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*This program is current as of 9/18. For the most up-to-date information see [www.aes.org/147/](http://www.aes.org/147/) or go to the mobile app.*





## **AUDIO ENGINEERING SOCIETY, INC.**

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Nadja Wallaszkovits

**W**elcome to the 147th Audio Engineering Society Convention in New York!

As President of AES it is an honor and my great pleasure to cordially welcome you to the annual highlight of our events!

The Convention in its home city is always a very special one. The sparkling, glamorous city of New York is full of life, a city that never sleeps, and one that has more to offer than any other metropolis in the world. Whether it is music, theater or visual arts, many of the most important protagonists can be found here, either as performing artists or as residents. This represents the perfect frame for an exceptional audio event. Following the New York State motto “Excelsior,” the New York AES Convention is representing the annual highlight for all audio enthusiasts around the world—always a little bigger, better, and more spectacular.

I remember vividly my first New York Convention attendance several years ago: It was like a journey into another dimension! I had no idea how to manage the split in order to be able to participate in as many parallel Workshops, Tutorials, Paper Sessions, and meetings as possible. And how to manage to see as much as possible in the exhibition?

Well, fortunately there is most useful guidance available: The convention committee has again organized the schedule into various tracks, to help you, assisted by the mobile app, to find the sessions relevant to your industry or area of interest. This year’s Convention also introduces several new Technical Program Tracks, including Electronic Dance Music, Electronic Instrument Design & Applications, and Hip-Hop and R&B. Always on top of technological development the program, covering the most talked-about topics in the industry, will definitely excite you! The exhibition will offer unique experience and options to connect with the industry as well—don’t miss to explore the newest technology trends and make your connections.

We all know that AES conventions do not happen of their own accord. The organization of this exciting Convention program is based on the tremendous energy and commitment of the Convention Committee, AES Headquarters office, contractors, as well as the numerous volunteers and supporting persons within and around our team. This is partnered by the vital process of bringing together exhibitors and sponsors to create an outstanding exhibition of the latest audio technology and services. I want to take this opportunity to express my sincere thanks!

Now I wish you an exciting experience and cordially invite you to stay connected—also throughout the year! There are so many more AES activities to explore and the next one is already waiting for you. Please enjoy the 147th Audio Engineering Society Convention in New York!

**NADJA WALLASZOKVITS**  
**AES PRESIDENT**



Agnieszka Roginska, Valerie Tyler, Jonathan Wyner

**H**ello and welcome to the 147th AES Convention! We're delighted you've joined us for the world's largest and most significant gathering of audio professionals, exhibitors, researchers, educators, students, and music creators. If you are a regular to the convention, we are glad to see you back. For those of you who are new to the show, we are happy to see you! We are confident that you will find your AES New York 2019 experience worthy of your time, the vital and comprehensive technical program worthy of your attendance, and the Audio Engineering Society worthy of membership and participation.

The Convention organizing committee has put together an exciting program, and you have a daunting task in front of you: curating your show experience from a wealth of options. The program offers something for everyone and addresses the specific needs for today's and tomorrow's generation of audio professionals. To help you navigate the convention, all of our special events, technical programs and sessions are tagged according to themed tracks, letting you presort by topics. These tracks include recognizable themes that take you on a deep dive into audio practice and research in Acoustics and Psychoacoustics, Archiving and Restoration, the Audio Builders Workshop, Audio for Cinema, Broadcast and Online Delivery, Education, Game Audio and VR, Historical, Immersive and Spatial Audio, Networked Audio, Product Development, Recording and Production, and Sound Reinforcement.

We are excited to introduce three new tracks at this Convention: Electronic Dance Music, Electronic Instrument Design and Applications, and Hip-Hop and R&B. Each contains workshops in technology and workflows used in music production today. Many of you first timers will have been attracted to the convention by this content, and by the added bonus of hip-hop pioneer Grand-Master Flash delivering the keynote address. We know that you will discover that there's compelling and relevant content for you throughout the Convention program.

We are going green! The AES is committed to reducing the environmental impact. This year's printed program booklet covers the essential information about the program and is complemented by a Mobile App containing all the comprehensive and most up to date information.

The AES embraces the diversification of the Convention's program, presenters and attendees to reflect our world, where people

of all identities, ages and interests are enthusiastically working to make audio awesome.

For the third year in a row, we are co-locating our convention with The NAB Show New York at the Javits, offering you a broader experience while confirming the strategic role audio plays in the entertainment and content creation industry that is growing alongside a rapid proliferation of distribution and experiential mediums.

The exhibition floor has been expanded to reflect the vital role that new technologies are playing, combining your talent and skills with the newest in creative tools and product development. All of audio production is experiencing a remarkable revival of fundamental tools and techniques, while being expanded in scope by new technologies. Optimize your creativity and future success opportunities by visiting our exhibitors and the exhibition stages and absorbing the critical knowledge that will enable you to profit from your heightened awareness and enhanced skills.

As co-chairpersons for the show we are grateful for the contributions of each committee volunteer, and the AES headquarters staff. We offer our appreciation for the time and energy devoted to planning and developing this Convention. The AES relies in great part on the efforts of hundreds of volunteers to make its conventions happen. While at AES New York, please take a moment to stop and thank the volunteers wearing Convention Committee badges, as well as the legion of student volunteers, as you move between audio adventures.

On behalf of the 147th Convention Committee, we wish you a most informative and exciting time while at the Convention and New York.

Dive deep and enjoy the show!

**AGNIESZKA ROGINSKA, VALERIE TYLER, JONATHAN WYNER**  
**CONVENTION COMMITTEE CO-CHAIRS**

## **JACOB K. JAVITS CONVENTION CENTER**

36th Street and 11th Avenue (main entrance)

New York, NY, USA

The Javits Center is located between 34th Street and 39th Street on 11th Avenue.

General Information Number: +1 212 216 2000

### **REGISTRATION**

#### **Registration Desk Hours:**

Tuesday, October 15	3:00 pm – 7:00 pm
Wednesday, October 16	8:00 am – 6:00 pm
Thursday, October 17	8:00 am – 6:00 pm
Friday, October 18	8:00 am – 6:00 pm
Saturday, October 19	8:00 am – 3:00 pm

### **REGISTRATION FEES:**

All AES New York 2019 registrations include the co-located NAB Show New York Exhibition and Core Sessions package, a \$75 value.

#### **Exhibits-Plus Badge Prices**

• Honorary/Life Members	No Fee
• Members & Associates	\$ 75
• Non-Member	\$ 75

#### **All Access Badge Prices**

• Honorary/Life Members	No Fee
• Members & Associates	\$620
• AES Student Member	\$165
• Non-Member	\$755

#### **Single-Day All Access Badge Prices**

• Members & Associates	\$230
• AES Student Member	\$ 75
• Non-Member	\$285

#### **Two-Day All Access Badge Prices**

• Members & Associates	\$420
• AES Student Member	\$120
• Non-Member	\$530

**All Access badges** include access to everything included with the Exhibits-Plus Badge, all AES New York 2019 Technical Program sessions, plus the co-located NAB Show New York Exhibition and Core Sessions package.

#### **Individual Tickets (members and nonmembers):**

Individual tickets may be bought in the Registration area. You must have purchased an Exhibits Plus pass to obtain individual event tickets.

## **PAYMENTS**

The AES will accept the following payments: cash or credit cards (Eurocard/Mastercard/Visa/American Express) are accepted for on-site registration.

## **TECHNICAL PAPERS, WORKSHOPS, SEMINARS, AND SPECIAL EVENTS HOURS**

Wednesday, October 16	9:00 am – 6:00 pm
Thursday, October 17	9:00 am – 6:00 pm
Friday, October 18	9:00 am – 6:00 pm
Saturday, October 19	9:00 am – 5:00 pm

These times are general; please refer to specific sections in this booklet and/or the Convention Planner for more specific information.

## **EXHIBITS**

The **Exhibit Booths** are located in Hall 3E. Demo Rooms are located on Levels 1 and 2. Please refer to the 147th Convention Exhibits-Plus Flyer for a complete list of exhibitors and their locations.

### **Exhibit Hours**

Wednesday, October 16	10:00 am – 6:00 pm
Thursday, October 17	10:00 am – 6:00 pm
Friday, October 18	10:00 am – 4:00 pm

## **MEMBERSHIP**

AES Membership Services are located at Registration in Hall 3E. Why not become a member of the Audio Engineering Society? The difference between the full program registration fee for nonmembers versus AES members equals the AES membership fee for the year and includes subscription to the 10-issue per year *Journal (JAES)* and lower rates for AES Publications. If you wish to become an AES member, please pay the nonmember registration fee and contact AES Membership in the registration area.

## **PRESS CENTER**

Press who have registered in advance can pick up their badges at the Advance Registration in Hall 3E. Press who register on site should go to the Press Center first for verification of credentials and then proceed to the Registration area in Hall 3E, to receive their badges.

Access to the Press Center is reserved exclusively for journalists and publication staff. Exhibitors are welcome to deliver press-kits and information for the press but are not permitted to collect any literature from other exhibitors.

### **Press Center Opening Hours**

Wednesday, October 16	9:00 am – 6:00 pm
Thursday, October 17	9:00 am – 6:00 pm



Friday, October 18  
Saturday, October 19

9:00 am – 6:00 pm  
9:00 am – 4:00 pm

### **JAVITS CONCIERGE DESK**

The Concierge Desk is located on Level 3, in the Crystal Palace. Literature, including sightseeing information and maps will be available to attendees wishing to explore New York City. Also, Broadway theater tickets can be purchased at this desk. A Javits Center specialist will be available to assist you.

### **AES DAILY**

The editorial office of the AES official Daily “Convention News” is located on level 2. Three issues are released, the third one serving days 3 and 4 of the convention.

### **FEDEX OFFICE AND PRINT CENTER**

FedEx, located on Level 2, is equipped to accommodate business needs, such as typing, photocopying, and Federal Express services. The center is open during convention exhibit hours.

### **PUBLIC TRANSPORTATION INFORMATION**

Please keep in mind that the public transportation fare is \$2.75. The subways accept MetroCards. Buses accept MetroCards and exact change fares. With MetroCards you can transfer from subway to bus and bus to subway for one fare. MetroCards are available at local stores.

**Buses**—M34 runs east/west on 34th Street and stops on 11th Avenue outside the Javits Center and at Penn Station. M42 runs east/west on 42nd street. The closest stop to the Javits Center is 42nd Street and 11th Avenue.

**Subways**—7 train now runs from midtown (Grand Central Terminal as well as the station at 42nd St. and 5th Avenue to 34th Street and 11th Avenue, serving Jacob K. Javits Convention Center.

**Ferry Service**—The NY Waterway operates a ferry from Weehawken, NJ. In 4 minutes the ferry takes you across the Hudson River to 39th Street and 12th Avenue, one block from the Javits Center. Park at the convenient lot adjacent to the ferry terminal in Weehawken and take a ferry which leaves every 10 to 15 minutes during peak hours.

### **PARKING**

The Javits Convention Center does not have a parking garage, but there are many parking facilities in the general area.

### **FIRST-AID SERVICES AT JAVITS CENTER**

First-aid services are located on Level 1, rear of Hall D.

## **AES CONVENTION HOTELS**

Courtyard New York Manhattan/Midtown West

+1 212 553 3000

Double Tree by Hilton

+1 212 607 8888

Paramount Hotel New York

+1 212 764 5500

Stewart Hotel

+1 212 563 1800

Wyndham New Yorker Hotel

+ 1 212 971 0101

YOTEL New York

+1 646 449 7700

# ACOUSTICS & PSYCHOACOUSTICS

AP-01	New Developments in Acoustical Simulations	Wednesday, Oct. 16 4:45 pm –5:45 pm Room 1E12
AP-02	Optical/Fiber Optic Microphone	Thursday, Oct. 17 9:00 am –10:00 am Room 1E08
AP-03	Shame on Us: Phase Is Not Polarity!	Thursday, Oct. 17 1:00 pm –1:45 pm Room 1E12
AP-04	Circles of Confusion	Thursday, Oct. 17 4:30 pm –5:30 pm Room 1E13
AP-05	How To Organize Unbiased PA/SR Shoot-Outs	Friday, Oct. 18 10:30 am –11:30 am Room 1E13
AP-06	Circles of Excellence	Friday, Oct. 18 1:15 pm –2:15 pm Room 1E12
AP-07	Digital Filters, Filter Banks and their Design	Friday, Oct. 18 3:00 pm –4:00 pm Room 1E13
AP-08	Listening Tests— Basic Concepts	Friday, Oct. 18 4:30 pm –5:30 pm Room 1E08
AP-09	To PEAQ or Not to PEAQ? BS.1387 Revisited	Saturday, Oct. 19 9:00 am –10:00 am Room 1E07

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## **AP01 - NEW DEVELOPMENTS IN ACOUSTIC SIMULATION: REFLECTIONS ON YEAR ONE IN AN ACOUSTIC LAB (PREDICTING AUDIO ACCURACY WITH ALGORITHMS & VIRTUAL REALITY)**

**Wednesday, October 16, 4:45 pm – 5:45 pm  
Room 1E12**

Presenters: **Peter D'Antonio**, WSDG, Walters Storyk Design Group  
**Sergio Molho**, WSDG, Walters Storyk Design Group,  
Highland, NY, USA; Miami, FL, USA  
**Dirk Noy**, WSDG, Basel, Switzerland

## **AP02 - OPTICAL/FIBER OPTIC MICROPHONE: WHEN AND WHY SHOULD I CONSIDER USING AN OPTICAL MICROPHONE?**

**Thursday, October 17, 9:00 am – 10:00 am  
Room 1E08**

## **Acoustics & Psychoacoustics**

Presenters: **Ronald Ajemian**, Owl Fiber Optics, Flushing, NY, USA  
**Yuvi Kahana**, Optoacoustics, Israel  
**Moshav Mazor**, Israel

*This session is presented in association with the AES Technical Committee on Fiber Optics for Audio*

### **AP03 - SHAME ON US: PHASE IS NOT POLARITY!**

**Thursday, October 17, 1:00 pm – 1:45 pm**

**Room 1E12**

Presenter: **Cesar Lamschtein**, Kaps Audio Production Services,  
Montevideo, Uruguay; Mixymaster, Montevideo,  
Uruguay

### **AP04 - CIRCLES OF CONFUSION**

**Thursday, October 17, 4:30 pm – 5:30 pm**

**Room 1E13**

Chair: **Thomas Lund**, Genelec Oy, Iisalmi, Finland

Panelists: **Sean Olive**, Harman International, Northridge, CA, USA  
**Susan Rogers**, Berklee College of Music, Boston, MA, USA

### **AP05 - HOW TO ORGANIZE UNBIASED PA/SR SHOOT-OUTS**

**Friday, October 18, 10:30 am – 11:30 am**

**Room 1E013**

Presenters: **Eddy Bøgh Brixen**, EBB-consult, Smørum, Denmark;  
DPA Microphones, Allerød, Denmark  
**Malle Kaas**, Women in Live Music  
**Bob McCarthy**, Meyer Sound, New York, NY, USA  
**Scott Sugden**, L-Acoustics, Oxnard, CA, USA

*This session is presented in association with the AES Technical Committee on Acoustics and Sound Reinforcement*

### **AP06 - CIRCLES OF EXCELLENCE**

**Friday, October 18, 1:15 pm – 2:15 pm**

**Room 1E012**

Moderator: **Thomas Lund**, Genelec Oy, Iisalmi, Finland

Panelists: *Florian Camerer*, ORF, Austrian TV - Vienna, Austria;  
EBU, European Broadcasting Union  
*Bob Katz*, Digital Domain Mastering, Orlando, FL, USA  
*George Massenburg*, Schulich School of Music, McGill  
University, Montreal, Quebec, Canada; Centre for  
Interdisciplinary Research in Music Media and  
Technology (CIRMMT), Montreal, Quebec, Canada

## Archiving & Restoration

### **AP07 - DIGITAL FILTERS, FILTER BANKS AND THEIR DESIGN FOR AUDIO APPLICATIONS—WITH PYTHON EXAMPLES**

**Friday, October 18, 3:00 pm – 4:00 pm**

**Room 1E13**

Presenter: **Gerald Schuller**, Ilmenau University of Technology, Ilmenau, Germany; Fraunhofer Institute for Digital Media technology (IDMT), Ilmenau, Germany

*This session is presented in association with the AES Technical Committee on Coding of Audio Signals*

### **AP08 - LISTENING TESTS— UNDERSTANDING THE BASIC CONCEPTS**

**Friday, October 18, 4:45 pm – 5:45 pm**

**Room 1E08**

Presenter: **Jan Berg**, Luleå University of Technology, Piteå, Sweden

*This session is presented in association with the AES Technical Committee on Perception and Subjective Evaluation of Audio Signals*

### **AP09 - TO PEAQ OR NOT TO PEAQ? - BS.1387 REVISITED**

**Saturday, October 19, 9:00 am – 10:00 am**

**Room 1E07**

Presenters: **Pablo Delgado**, International Audio Laboratories Erlangen, a joint institution of Universität Erlangen-Nürnberg and Fraunhofer IIS, Erlangen, Germany; Fraunhofer Institute for Integrated Circuits IIS, Erlangen, Germany  
**Thomas Sporer**, Fraunhofer Institute for Digital Media Technology IDMT, Ilmenau, Germany

*This session is presented in association with the AES Technical Committee on Perception and Subjective Evaluation of Audio Signals*

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## ARCHIVING & RESTORATION

**AR-01**    **Long Term Preservation  
Audio Assets  
(An AES Special Event)**

Thursday, Oct. 17  
4:30 pm – 5:30 pm  
Room 1E15+16

**AR-02**    **Preserving Hip Hop**

Friday, Oct. 18  
10:15 am – 11:15 am  
Room 1E11

## **Archiving & Restoration**

<b>AR-03</b>	<b>Metadata from Creation to Consumption to Preservation</b>	Friday, Oct. 18 11:15 am – 12:15 pm Room 1E11
<b>AR-04</b>	<b>Restoring Hank Williams</b>	Friday, Oct. 18 2:45 pm – 3:45 pm Room 1E11
<b>AR-05</b>	<b>Preserve This Podcast</b>	Friday, Oct. 18 4:00 pm – 4:30 pm Room 1E11
<b>AR-06</b>	<b>You Mean You Wanted Those Tracks?!</b>	Friday, Oct. 18 4:30 pm – 5:30 pm Room 1E11
<b>AR-07</b>	<b>Archiving the 90s!</b>	Saturday, Oct. 19 9:00 am – 10:00 am Room 1E21
<b>AR-08</b>	<b>Finding Funding</b>	Saturday, Oct. 19 10:00 am – 11:00 am Room 1E21
<b>AR09</b>	<b>Audio Repair and Restoration for Music and Post</b>	Saturday, Oct. 19 1:30 pm – 4:30 pm Room 1E13

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### **AR01 - LONG TERM PRESERVATION OF AUDIO ASSETS (AN AES SPECIAL EVENT)**

**Thursday, October 17, 4:30 pm – 5:30 pm  
Room 1E15+16**

Moderator: **Jessica Thompson**, Jessica Thompson Audio,  
Berkeley, CA, USA

Panelists: *Jeff Balding*, Recording Academy Producers  
& Engineers Wing  
*Rob Friedrich*, Library of Congress  
*Jamie Howarth*, Plangent Process  
*Pat Kraus*, UMG  
*Greg Parkin*, Iron Mountain  
*Cheryl Pawelski*, Omnivore Recording  
*Toby Seay*, Drexel University; IASAs

### **AR02 - CACHE RULES EVERYTHING AROUND ME: ARCHIVING AND PRESERVING HIP-HOP IN A DIGITAL AGE**

**Friday, October 18, 10:15 am – 11:15 am  
Room 1E11**

Chair: **Sommer McCoy**, The Mixtape Museum, New York,  
NY, USA

## **Archiving & Restoration**

Panelists: *Rocky Bucano*, Universal Hip-Hop Museum  
*Manny Faces*, The Center for Hip-Hop Advocacy  
*Syreeta Gates*  
*DJ Rich Nice*

### **AR03 - METADATA FROM CREATION TO CONSUMPTION TO PRESERVATION**

**Friday, October 18, 11:15 am – 12:15 pm**

**Room 1E11**

Chair: **Brad McCoy**, Library of Congress, Culpeper, VA, USA

Panelists: *Tony Brooke*  
*Maureen Droney*, The Recording Academy,  
Los Angeles, CA, USA  
*Tony Gerevino*  
*Paul Jessop*

### **AR04 - RESTORING HANK WILLIAMS**

**Friday, October 18, 2:45 pm – 3:45 pm**

**Room 1E11**

Presenters: **Michael Graves**, Osiris Studio, Los Angeles, CA, USA  
**Cheryl Pawelski**, Omnivore Records  
**Jett Williams**  
**Kelly Zumwalt**

### **AR05 - PRESERVE THIS PODCAST**

**Friday, October 18, 4:00 pm – 4:30 pm**

**Room 1E11**

Presenters: **Sarah Nguyen**, Metro  
**Molly Schwartz**

### **AR06 - YOU MEAN YOU WANTED THOSE TRACKS?!: CHALLENGES OF PRESERVING MULTITRACK RECORDINGS**

**Friday, October 18, 4:30 pm – 5:30 pm**

**Room 1E11**

Chair: **Jeff Willens**, New York Public Library,  
Fair Lawn, NJ, USA

Panelists: *Bryan Hoffa*  
*Kelly Pribble*, Iron Mountain Entertainment Services,  
Moonachie, New Jersey, USA

*Presented in collaboration with ARSC (Association for Recorded  
Sound Collections)*

## **Archiving & Restoration**

### **AR07 - ARCHIVING THE 90s!**

**Saturday, October 19, 9:00 am – 10:00 am**

**Room 1E21**

Moderator: **Jason Bitner**, Traffic Entertainment Group,  
Somerville, MA, USA

Panelists: *David Ackerman*, Harvard University, Cambridge,  
MA, USA  
*Eddie Ciletti*, Manhattan Sound Technicians, Inc.,  
West Saint Paul, MN, USA  
*Kelly Pribble*, Iron Mountain Entertainment Services,  
Moonachie, New Jersey, USA  
*Catherine Vericolti*

### **AR08 - FINDING FUNDING: HOW TO CONNECT AUDIO ARCHIVAL COLLECTIONS, VENDORS, AND FUNDERS**

**Saturday, October 19, 10:00 am – 11:00 am**

**Room 1E21**

Moderator: **John Krivit**, Professional Audio Design, Hanover, MA,  
USA; Emerson College, Boston, MA, USA

Panelists: *Joy Banks*, CLIR  
*Steve Rosenthal*, MARS (MagicShop Archive and  
Restoration Studios), Brooklyn, NY, USA  
*Gerald Seligman*  
*Derek Spencer*, GRAMMY Museum

### **AR09 - AUDIO REPAIR AND RESTORATION FOR MUSIC AND POST: BUILD YOUR SKILLS**

**Saturday, October 19, 1:30 pm – 4:30 pm**

**Room 1E13**

Presenters: **Dave Barber**, Juniper Post, Burbank, CA, USA  
**Jessica Thompson**, Jessica Thompson Audio,  
Berkeley, CA, USA  
**Jonathan Wyner**, M Works Studios/iZotope/Berklee  
College of Music, Boston, MA, USA; M Works  
Mastering

*Preregistration is required for this event.*

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## **AUDIO BUILDERS WORKSHOP**

**AB-01 Classroom DIY Projects**

Wednesday, Oct. 16  
11:00 am – 12:00 noon  
Room 1E08



## **Audio Builders Workshop**

<b>AB-02</b>	<b>Custom Consoles / Power and Grounding</b>	Wednesday, Oct. 16 1:30 pm – 2:30 pm Room 1E09
<b>AB-03</b>	<b>Project to Product</b>	Thursday, Oct. 17 4:30 pm – 5:30 pm Room 1E09
<b>AB-04</b>	<b>Reviving Classic and Esoteric Tech</b>	Friday, Oct. 18 1:45 pm – 2:45 pm Room 1E13
<b>AB-05</b>	<b>DIY Build Clinic</b>	Saturday, Oct. 19 9:00 am – 12:00 noon South Concourse B

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### **AB01 - CLASSROOM DIY PROJECTS**

**Wednesday, October 16, 11:00 am – 12:00 noon**

**Room 1E08**

Moderator: **Chris Kincaid**, Audio Builders Workshop,  
Louisville, KY, USA

Panelists: *Charlie DeVane*, Mathworks, Natick, MA, USA;  
University of Massachusetts Lowell, Lowell, MA, USA  
*Robert-Eric Gaskell*, McGill University, Montreal,  
QC, Canada  
*Paul Lehrman*, Tufts University, Medford, MA, USA

### **AB02 - CUSTOM CONSOLES / POWER AND GROUNDING**

**Wednesday, October 16, 1:30 pm – 2:30 pm**

**Room 1E09**

Chair: **Owen Curtin**, Audio Builders Workshop, Lexington,  
MA, USA; Bridge Sound and Stage, Cambridge,  
MA, USA

Panelists: *Eddie Ciletti*, Manhattan Sound Technicians, Inc.,  
West Saint Paul, MN, USA  
*David Thibodeau*, Analog Devices, Wilmington, MA,  
USA

### **AB03 - PROJECT TO PRODUCT**

**Thursday, October 17, 4:30 pm – 5:30 pm**

**Room 1E09**

Chair: **Owen Curtin**, Audio Builders Workshop, Lexington,  
MA, USA; Bridge Sound and Stage, Cambridge,  
MA, USA

Panelists: *Robert-Eric Gaskell*, McGill University, Montreal, QC,  
Canada

## **Audio Builders Workshop**

*Peterson Goodwyn*, DIY Recording Equipment,  
Philadelphia, PA, USA

*Denis Labrecque*, DeLab Consulting, Half Moon Bay,  
CA, USA

*Brewster LaMacchia*, Clockworks Signal Processing  
LLC, Andover, MA, USA

### **AB04 - REVIVING CLASSIC AND ESOTERIC TECH**

**Friday, October 18, 1:45 pm – 2:45 pm**

**Room 1E13**

Moderator: **Chris Kincaid**, Audio Builders Workshop,  
Louisville, KY, USA

Panelists: *Mike Buffington*  
*Stephen Masucci*

### **AB05 - DIY BUILD CLINIC: STARTING YOUR NEXT BUILD TODAY WITH AUDIO BUILDERS WORKSHOP**

**Saturday, October 19, 9:00 am – 12:00 noon**

**South Concourse B**

Co-Chairs: **Owen Curtin**, Audio Builders Workshop, Lexington,  
MA, USA; Bridge Sound and Stage, Cambridge,  
MA, USA

**Chris Kincaid**, Audio Builders Workshop,  
Louisville, KY, USA

Panelists: *Peterson Goodwyn*, DIY Recording Equipment,  
Philadelphia, PA, USA  
*Brewster LaMacchia*, Clockworks Signal Processing  
LLC, Andover, MA, USA  
*Matthew McGlynn*, MicParts.com, Sebastopol, CA,  
USA; Roswell Pro Audio

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## **AUDIO FOR CINEMA**

<b>AC-01</b>	<b>The Portable Score Mix</b>	Saturday, Oct. 19 9:00 am –10:00 am Room 1E17
<b>AC-02</b>	<b>Best Practices in Re-Recording Mixing</b>	Saturday, Oct. 19 10:15 am –11:15 am Room 1E12
<b>AC-03</b>	<b>You Don't Have to Go There: Recording Remotely</b>	Saturday, Oct. 19 1:30 pm –2:30 pm Room 1E17
<b>AC-04</b>	<b>Ambisonics in Cinema</b>	Saturday, Oct. 19 3:00 pm –4:00 pm Room 1E08

## **Broadcast & Online Delivery**

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### **AC01 - THE PORTABLE SCORE MIX: CINEMATIC SCORES ON AN EPISODIC BUDGET**

**Saturday, October 19, 9:00 am – 10:00 am**

**Room 1E17**

Presenter: **John Whynot**, Berklee College of Music,  
Los Angeles, CA, USA

### **AC02 - BEST PRACTICES IN RE-RECORDING MIXING**

**Saturday, October 19, 10:15 am – 11:15 am**

**Room 1E12**

Presenter: **Tom Fleischman**, Soundtrack Film & Television,  
New York, NY, USA

### **AC03 - YOU DON'T HAVE TO GO THERE: RECORDING CINEMA AUDIO REMOTELY**

**Saturday, October 19, 1:30 pm – 2:30 pm**

**Room 1E17**

Presenter: **Robert Marshall**, Source Elements

### **AC04 - AMBISONICS IN CINEMA**

**Saturday, October 19, 3:00 pm – 4:00 pm**

**Room 1E08**

Presenter: **John Escobar**, Berklee College of Music,  
Boston, MA, USA

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## **BROADCAST & ONLINE DELIVERY**

<b>B-01</b>	<b>Podcast Production Studios</b>	Wednesday, Oct. 16 10:30 am – 12:00 noon Room 1E07
<b>B-02</b>	<b>Innovations in Audio Processing</b>	Wednesday, Oct. 16 1:30 pm – 3:30 pm Room 1E07
<b>B-03</b>	<b>Advanced Audio for Sports</b>	Wednesday, Oct. 16 3:45 pm – 5:15 pm Room 1E07
<b>B-04</b>	<b>An Intimate Evening with Tesla and Twain</b>	Wednesday, Oct. 16 7:00 pm & 9:00 pm Radio Waves Building

## **Broadcast & Online Delivery**

<b>B-05</b>	<b>Performance Spaces for Broadcast</b>	Thursday, Oct. 17 9:00 am – 10:30 am Room 1E07
<b>B-06</b>	<b>Live Broadcasting with Object Based Audio</b>	Thursday, Oct. 17 1:30 pm – 3:00 pm Room 1E07
<b>B-07</b>	<b>Anatomy of a Stream</b>	Thursday, Oct. 17 1:00 pm – 2:30 pm Room 1E07
<b>B-08</b>	<b>Advanced Audio for ATSC 3.0 Broadcast</b>	Thursday, Oct. 17 4:30 pm – 6:00 pm Room 1E07
<b>B-09</b>	<b>The Technical History of WNYC</b>	Thursday, Oct. 17 4:00 pm – 5:30 pm Room 1E07
<b>B-10</b>	<b>Tour of Stitcher Studios</b>	Thursday, Oct. 17 7:00 pm – 8:00 pm Stitcher Studios
<b>B-11</b>	<b>Sound Knowledge</b>	Friday, Oct. 18 9:00 am – 10:30 am Room 1E07
<b>B-12</b>	<b>SBE Certification Exam</b>	Friday, Oct. 18 9:30 pm – 12:30 pm Room TBD
<b>B-13</b>	<b>Metadata—What Works, What Does Not and Why</b>	Friday, Oct. 18 10:30 am – 12:00 noon Room 1E07
<b>B-14</b>	<b>Telling Stories with Sound</b>	Friday, Oct. 18 1:15 pm – 2:30 pm Room 1E07
<b>B-15</b>	<b>Facility Designed for IP</b>	Friday, Oct. 18 2:30 pm – 4:00 pm Room 1E07
<b>B-16</b>	<b>Immersive Audio Mixing and Workflow for Broadcast</b>	Friday, Oct. 18 4:00 pm – 5:30 pm Room 1E07
<b>B-17</b>	<b>The Current War</b>	Friday, Oct. 18 6:30 pm – 8:00 pm Dolby Theater
<b>B-18</b>	<b>Convergence of Broadcast Over-the-Air and Streaming Delivery</b>	Saturday, Oct. 19 10:15 am – 11:45 am Room 1E07
<b>B-19</b>	<b>Emergency Preparedness Safety for Broadcasters</b>	Saturday, Oct. 19 1:30 pm – 2:45 pm Room 1E07

## **Broadcast & Online Delivery**

### **B01 - PODCAST PRODUCTION STUDIOS**

**Wednesday, October 16, 10:30 am – 12:00 noon**

**Room 1E07**

Moderators: **Romina Larregina**, WSDG Partner/Project Manager  
**John Storyk**, Walters-Storyk Design Group,  
Highland, NY, USA

Panelists: *John DeLore*, Chief Engineer, Stitcher (Scripps),  
New York, NY, USA  
*Judy Elliot-Brown*, Walters-Storyk Design Group  
*Austin Thompson*, Technical Director, Gimlet Media,  
Brooklyn, NY, USA

### **B02 - INNOVATIONS IN AUDIO PROCESSING**

**Wednesday, October 16, 1:30 pm – 3:30 pm**

**Room 1E07**

Moderator: **David Bialik**, Entercom.com, New York, NY, USA

Panelists: *Tim Carroll*, Dolby Laboratories, San Francisco,  
CA, USA  
*Steve Dove*, Wheatstone  
*Frank Filipetti*, The Living Room, New York, NY, USA  
*Frank Foti*, The Telos Alliance, Cleveland, Ohio, USA  
*Robert Orban*, Orban Labs Inc., Pennsauken, NJ, USA

*This session is presented in association with the AES Technical Committee on Broadcast and Online Delivery*

### **B03 - ADVANCED AUDIO FOR SPORTS**

**Wednesday, October 16, 3:45 pm – 5:15 pm**

**Room 1E07**

Moderator: **Peter Wharton**, Happy Robotz; SMPTE

Panelists: *Mike Babbitt*, Dolby Laboratories  
*Dennis Baxter*, Dennis Baxter Sound, Gainesville,  
GA, USA  
*Karl Malone*, NBC Universal, Stamford, CT, USA  
*Patrick Warrington*, Lawo AG

### **B04 - AN INTIMATE EVENING WITH TESLA AND TWAIN**

**Wednesday, October 16, 7:00 pm and 9:00 pm**

**The Radio Waves Building (49 West 27th Street, NYC) Penthouse**

*Presented by the HEAR Now Festival in tandem with SueMedia Radio Waves Studios at 7:00 pm and 9:00 pm. Tickets are required for each performance; free with your badge. Limited to 35 people per performance*

## **Broadcast & Online Delivery**

### **B05 - PERFORMANCE SPACES FOR BROADCAST**

**Thursday, October 17, 9:00 am – 10:30 am**

**Room 1E07**

Moderator: **Paul Mclane**, Radio World

Panelists: *Sam Berkow*, SIA Acoustics, Los Angeles, CA, USA  
*John Carraciola*, JVC Communications  
*Gary Kline*, Kline Consulting Group LLC,  
Atlanta, GA, USA  
*Jason Ornellas*, Bonneville International,  
Sacramento, CA, USA

### **B06 - LIVE BROADCASTING WITH OBJECT BASED AUDIO**

**Thursday, October 17, 10:45 am – 12:00 noon**

**Room 1E07**

Presenters: **Frédéric Changenet**, Radio France, Paris, France  
**Adrian Murtaza**, Fraunhofer Institute for Integrated  
Circuits IIS, Erlangen, Germany  
**Matthieu Parmentier**, francetélévisions, Paris, France

### **B07 - ANATOMY OF A STREAM**

**Thursday, October 17, 1:00 pm – 2:30 pm**

**Room 1E07**

Moderator: **Samuel Sousa**, Triton Digital, Montreal, QC, Canada

Panelists: *John Kean*, Kean Consultants LLC, Washington DC,  
USA; Cavell Mertz & Associates, Manassas VA, USA  
*Robert Orban*, Orban Labs Inc., Pennsauken, NJ, USA  
*Ioan Rus*, Telos Alliance, San Diego, CA, USA  
*Mike Smith*, MainStreaming, Inc., San Francisco,  
CA, USA

*This session is presented in association with the AES Technical Com-  
mittee on Broadcast and Online Delivery*

### **B08 - ADVANCED AUDIO FOR ATSC 3.0 BROADCAST**

**Thursday, October 17, 2:30 pm – 4:00 pm**

**Room 1E07**

Moderator: **Skip Pizzi**, NAB, Washington DC, USA

Panelists: *Robert Bleidt*, Fraunhofer USA Digital Media  
Technologies, San Jose, CA, USA  
*Tim Carroll*, Dolby Laboratories, San Francisco,  
CA, USA  
*Jim Starzynski*, NBCUniversal, New York, NY, USA;  
ATSC Group, Washington D.C.

## **Broadcast & Online Delivery**

### **B09 - THE TECHNICAL HISTORY OF WNYC**

**Thursday, October 17, 4:00 pm – 5:30 pm**

**Room 1E07**

Presenters: **Andy Lanset**, Director of Archives, New York Public Radio  
**Steve Shultis**, Chief Technology Officer, New York Public Radio  
**Jim Stagnitto**, Director of Engineering, New York Public Radio

*This session is presented in association with the AES Technical Committee on Broadcast and Online Delivery*

### **B10 - TOUR OF STITCHER STUDIOS**

**Thursday, October 17, 7:00 pm – 8:00 pm**

**Stitcher Studios, 5 Bryant Park (6th Ave. & 40th St.)**

*Limited to 20 people; tickets available at Registration*

### **B11 - SOUND KNOWLEDGE: LEARN HOW SMPTE ST 2110 HELPS AUDIO STAND OUT**

**Friday, October 18, 9:00 am – 10:30 am**

**Room 1E07**

Moderator: **Jeff Cohen**, SMPTE NY Section Chair

Panelists: *Andreas Hildebrand*, ALC NetworX GmbH, Munich, Germany  
*John Mailhot*, Imagine Communications, Bridgewater, NJ, USA

*Co-organized by the Audio Engineering Society and the Society of Motion Picture and Television Engineers*

### **B12 - SBE CERTIFICATION EXAMS**

**Friday, October 18, 9:30 am – 12:30 pm**

**Room TBA**

### **B13 - METADATA— WHAT WORKS, WHAT DOES NOT AND WHY?**

**Friday, October 18, 10:30 am – 12:00 noon**

**Room 1E07**

Presenters: **John Kean**, Kean Consultants LLC, Washington DC, USA; Cavell Mertz & Associates, Manassas VA, USA  
**Robert Orban**, Orban Labs Inc., Pennsauken, NJ, USA  
**Ioan Rus**, Telos Alliance, San Diego, CA, USA  
**Samuel Sousa**, Triton Digital, Montreal, QC, Canada  
**Kent Terry**, Dolby Laboratories Inc., San Francisco, CA, USA

## **Broadcast & Online Delivery**

### **B14 - TELLING STORIES WITH SOUND: WHAT CAN AUDIO STORYTELLING LEARN FROM SOUND FOR PICTURE?**

**Friday, October 18, 1:15 pm – 2:30 pm**

**Room 1E07**

Moderator: **Rob Byers**, Minnesota Public Radio | American Public Media, Minneapolis, MN, USA

Panelists: *Lon Bender*, The Formosa Group, Los Angeles, CA, USA

*Paula Fairfield*

*Jocelyn Gonzales*

### **B15 - FACILITY DESIGNED FOR IP**

**Friday, October 18, 2:30 pm – 4:00 pm**

**Room 1E07**

Moderator: **Andy Butler**, PBS

Panelists: *Emeric Feldmar*, WGBH, Boston, MA, USA

*Kent Terry*, Dolby Laboratories Inc., San Francisco, CA, USA

*Co-organized by the Audio Engineering Society and the Society of Broadcast Engineers*

### **B16 - IMMERSIVE AUDIO MIXING AND WORKFLOW FOR BROADCAST**

**Friday, October 18, 4:00 pm – 5:30 pm**

**Room 1E07**

Moderator: **Sean Richardson**, Starz Entertainment, Denver, CO, USA

Panelists: *Manuel Briand*

*Cheryl Ottenriter*, OTT House Audio

*Robert Reams*, Psy(x) Research

*Andrew Roundy*, Dolby Laboratories

### **B17 - THE CURRENT WAR: DIRECTOR'S CUT**

**Friday, October 18, 6:30 pm – 8:00 pm**

**Dolby Theater, 1350 6th Ave. at W. 55th St.**

*This event is limited to 70 people. Tickets are required (free) and can be obtained at the Registration area.*

### **B18 - CONVERGENCE OF BROADCAST OVER-THE-AIR AND STREAMING DELIVERY**

**Saturday, October 19, 10:15 am – 11:45 am**

**Room 1E07**



## **E-Brief Sessions**

Moderator: **David Layer**, National Association of Broadcasters,  
Washington, DC, USA

Panelists: *Sayon Deb*, Consumer Technology Association  
*Jeff Detweiler*, Xperi Corp.  
*Serhad Doken*, Verizon

### **B19 - EMERGENCY PREPAREDNESS AND SAFETY FOR BROADCASTERS**

**Saturday, October 19, 1:30 pm – 2:45 pm**  
**Room 1E07**

Moderator: **Scott Fybush**, Northeast Radio Watch

Panelists: *Jim Leifer*, American Tower, Boston, MA, USA  
*Howard Price*  
*Tom Ray*, Tom Ray Broadcast Consulting LLC

*This session is co-presented with SBE, the Society of Broadcast Engineers. This session is presented in association with the AES Technical Committee on Broadcast and Online Delivery*

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## **E-BRIEF SESSIONS**

<b>EB-01</b>	<b>Recording and Production</b>	Friday, Oct. 18 9:00 am – 10:15 am Room 1E11
<b>EB-02</b>	<b>Posters: Applications in Audio</b>	Friday, Oct. 18 9:00 am – 10:30 am South Concourse A
<b>EB-03</b>	<b>Posters: Spatial Audio</b>	Friday, Oct. 18 11:00 am – 12:30 pm South Concourse A
<b>EB-04</b>	<b>Posters: Recording and Production</b>	Friday, Oct. 18 3:30 pm – 5:00 pm South Concourse A
<b>EB-05</b>	<b>Transducers</b>	Saturday, Oct. 19 9:00 am – 11:30 am Room 1E11
<b>EB-06</b>	<b>Spatial Audio</b>	Saturday, Oct. 19 2:00 pm – 3:00 pm Room 1E11
<b>EB-07</b>	<b>Audio Signal Processing</b>	Saturday, Oct. 19 2:30 pm – 4:15 pm Room 1E10

## **E-Brief Sessions**

**EB-08 Applications in Audio** Saturday, Oct. 19  
3:30 pm – 4:30 pm  
Room 1E11

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### **Session EB1 RECORDING AND PRODUCTION**

**Friday, Oct. 18, 9:00 am – 10:00 am**

**Room 1E11**

Chair: **Tomasz Zernicki**, Zylia sp. z o.o., Poznan, Poland

**9:00 am**

**EB1-1 Recording and Mixing of Classical Music Using Non-Adjacent Spherical Microphone Arrays and Audio Source Separation Algorithms**—*Eduardo Patricio, Mateusz Skrok, Tomasz Zernicki*, Zylia sp. z o.o., Poznan, Poland

*Engineering Brief 525*

**9:15 am**

**EB1-2 Exploring Preference for Multitrack Mixes Using Statistical Analysis of MIR and Textual Features**—*Joseph Colonel, Joshua D. Reiss*, Queen Mary University of London, London, UK

*Engineering Brief 526*

**9:30 am**

**EB1-3 Machine Learning Multitrack Gain Mixing of Drums**—*Dave Moffat, Mark Sandler*, Queen Mary University of London, London, UK

*Engineering Brief 527*

**9:45 am**

**EB1-4 Why Microphone Arrays Are Not Better than Single-Diaphragm Microphones with Regard to Their Single Channel Output Quality**—*Helmut Wittek, Hannes Dieterle*, SCHOEPS Mikrofone GmbH, Karlsruhe, Germany

*[Presentation only; not in E-Library]*

**10:00 am**

**EB1-4 Predicting Objective Difficulty in Peak Identification Task of Technical Ear Training**—*Atsushi Marui, Toru Kamekawa*, Tokyo University of the Arts, Adachi, Tokyo, Japan

*Engineering Brief 565*

## **E-Brief Sessions**

### **Session EB2 – POSTERS: APPLICATIONS IN AUDIO**

**Friday, Oct. 18, 9:00 am – 10:30 am**

**South Concourse A**

**9:00 am**

- EB2-1 Personal Audio Systems in Car Cabin Using Loudspeaker Array Based on Measured Transfer Functions with Spectral Smoothing**—*Yefeng Cai,<sup>1,2</sup> Chao Ye,<sup>1,2</sup> Dengyong Ma,<sup>1,2</sup> Yongsheng Mu,<sup>1,2</sup> Jianming Zhou,<sup>2</sup> Guoqiang Chai<sup>2</sup>*  
<sup>1</sup> Colsonic Electronics Co., Ltd., Suzhou, China  
<sup>2</sup> Suzhou Sonavox Electronics Co.,Ltd., Suzhou, China

*Engineering Brief 528*

**9:00 am**

- EB2-2 A Latency Measurement Method for Networked Music Performances**—*Robert Hupke,<sup>1</sup> Sripathi Sridhar,<sup>2</sup> Andrea Genovese,<sup>2</sup> Marcel Nophut,<sup>1</sup> Stephan Preihs,<sup>1</sup> Tom Beyer,<sup>2</sup> Agnieszka Roginska,<sup>2</sup> Jürgen Peissig<sup>1</sup>*  
<sup>1</sup> Leibniz Universität Hannover, Hannover, Germany  
<sup>2</sup> New York University, New York, NY, USA

*Engineering Brief 529*

**9:00 am**

- EB2-3 An Investigation into the Effectiveness of Room Adaptation Systems: Listening Test Results**—*Pei Yu, Ziyun Liu, Shufeng Zhang, Yong Shen, Nanjing University, Nanjing, Jiangsu Province, China*

*Engineering Brief 530*

**9:00 am**

- EB2-4 Evaluating Four Variants of Sine Sweep Techniques for Their Resilience to Noise in Room Acoustic Measurements**—*Eric Segerstrom,<sup>1</sup> Ming-Lun Lee,<sup>2</sup> Steve Philbert<sup>2</sup>*  
<sup>1</sup> Rensselaer Polytechnic Institute, Troy, NY, USA  
<sup>2</sup> University of Rochester, Rochester, NY, USA

*Engineering Brief 531*

**9:00 am**

- EB2-5 Perceptually Affecting Electrical Properties of Headphone Cable—Factor Hunting Approach**—*Akihiko Yoneya,*  
Nagoya Institute of Technology, Nagoya, Aichi-pref., Japan

*Engineering Brief 532*

**9:00 am**

- EB2-6 An Investigation into the Location and Number of Microphone Measurements Necessary for Efficient Active Control of Low-Frequency Sound Fields in Listening**

## **E-Brief Sessions**

**Rooms**—*Tom Bell,<sup>1,2</sup> Filippo Maria Fazi<sup>2</sup>*

<sup>1</sup> Bowers & Wilkins, Southwater, West Sussex, UK

<sup>2</sup> University of Southampton, Southampton, Hampshire, UK

*Presentation only; not in E-Library*

**9:00 am**

**EB2-7 Measuring Speech Intelligibility Using Head-Oriented Binaural Room Impulse Responses**—*Allison Lam,<sup>1</sup>*

*Ming-Lun Lee,<sup>2</sup> Steve Philbert<sup>2</sup>*

<sup>1</sup> Tufts University, Medford, MA, USA

<sup>2</sup> University of Rochester, Rochester, NY, USA

*Engineering Brief 533*

**9:00 am**

**EB2-8 Compensation Filters for Excess Exciter Excursion on Flat-Panel Loudspeakers**—*David Anderson,* University of Pittsburgh, Pittsburgh, PA, USA

*Engineering Brief 534*

**Session EB3 - POSTERS—SPATIAL AUDIO**

**Friday, Oct. 18, 11:00 am – 12:30 pm**

**South Concourse A**

**11:00 am**

**EB3-1 Comparing Externalization Between the Neumann KU100 Versus Low Cost DIY Binaural Dummy Head**—*Kelley DiPasquale,* SUNY Potsdam, Potsdam, NY, USA

*Engineering Brief 535*

**11:00 am**

**EB3-2 SALTE Pt. 1: A Virtual Reality Tool for Streamlined and Standardized Spatial Audio Listening Tests**—*Daniel Johnston, Benjamin Tsui, Gavin Kearney,* University of York, York, UK

*Engineering Brief 536*

**11:00 am**

**EB3-3 SALTE Pt. 2: On the Design of the SALTE Audio Rendering Engine for Spatial Audio Listening Tests in VR**—*Tomasz Rudzki, Chris Earnshaw, Damian Murphy, Gavin Kearney,* University of York, York, UK

*Engineering Brief 537*

**11:00 am**

**EB3-4 Mixed Reality Collaborative Music**—*Andrea Genovese,*

## **E-Brief Sessions**

*Marta Gospodarek, Agnieszka Roginska, New York University, New York, NY, USA*

*Presentation only; not in E-Library*

**11:00 am**

**EB3-5 Calibration of a Reconfigurable Multichannel Loudspeaker System with an Ambisonic Microphone**—*Steve Philbert, Ming-Lun Lee, Mark F. Bocko, University of Rochester, Rochester, NY, USA*

*Presentation only; not in E-Library*

**11:00 am**

**EB3-6 Field Report: Immersive Recording of a Wind Ensemble Using Height Channels and Delay Compensation for a Realistic Playback Experience**—*Hyunjoung Yang, Alexander Dobson, Richard King, McGill University, Montreal, Quebec, Canada; The Centre for Interdisciplinary Research in Music Media and Technology, Montreal, Quebec, Canada*

*Engineering Brief 538*

### **Session EB4 - POSTERS: RECORDING AND PRODUCTION**

**Friday, Oct. 18, 3:30 pm – 5:00 pm**

**South Concourse A**

**3:30 pm**

**EB4-1 A Comparative Pilot Study and Analysis of Audio Mixing Using Logic Pro X and GarageBand for IOS**—*Jiayue Cecilia Wu,<sup>1</sup> Orchisama Das,<sup>2</sup> Vincent DiPasquale<sup>1</sup>*

<sup>1</sup> University of Colorado Denver, Denver, CO, USA

<sup>2</sup> Center for Computer Research in Music and Acoustics (CRMA), Stanford University, Stanford, CA, USA

*Engineering Brief 539*

**3:30 pm**

**EB4-2 The ANU School of Music Post-Production Suites: Design, Technology, Research, and Pedagogy**—*Samantha Bennett, Matt Barnes, Australian National University, Canberra, Australia*

*Engineering Brief 540*

**3:30 pm**

**EB4-3 A Case Study of Cultural Influences on Mixing Preference—Targeting Japanese Acoustic Major Students**—*Toshiki Tajima, Kazuhiko Kawahara, Kyushu University, Fukuoka, Japan*

*Engineering Brief 541*

## **E-Brief Sessions**

**3:30 pm**

**EB4-4 A Dataset of High-Quality Object-Based Productions—**  
*Giacomo Costantini,<sup>1</sup> Andreas Franck,<sup>1</sup> Chris Pike,<sup>2</sup> Jon  
Francombe,<sup>2</sup> James Woodcock,<sup>3</sup> Richard J. Hughes,<sup>3</sup> Philip  
Coleman,<sup>4</sup> Eloise Whitmore,<sup>5</sup> Filippo Maria Fazi<sup>1</sup>*

<sup>1</sup> University of Southampton, Southampton, UK

<sup>2</sup> BBC Research and Development, Salford, UK

<sup>3</sup> University of Salford, Salford, UK

<sup>4</sup> University of Surrey, Guildford, Surrey, UK

<sup>5</sup> Naked Productions, Manchester, UK

*Engineering Brief 542*

**3:30 pm**

**EB4-5 An Open-Access Database of 3D Microphone Array  
Recordings—***Hyunkook Lee, Dale Johnson, University  
of Huddersfield, Huddersfield, UK*

*Engineering Brief 543*

### **Session EB5 - TRANSDUCERS**

**Saturday, Oct. 19, 9:00 am – 11:30 am**

**Room 1E11**

Chair: **Alexander Voishvillo**, JBL/Harman Professional  
Solutions, Northridge, CA, USA

**9:00 am**

**EB5-1 The Application of Graphene Oxide-Based Loudspeaker  
Membranes in 40mm Headphone Drivers—***William  
Cardenas, Robert-Eric Gaskell, ORA Graphine Audio Inc.,  
Montreal, Quebec, Canada*

*Engineering Brief 544*

**9:15 am**

**EB5-2 MEMS Loudspeakers - A New Chip-Based Technology for  
Ultra-Small Speakers—***Fabian Stoppel,<sup>1</sup> Florian Niekkel,<sup>1</sup>  
Andreas Männchen,<sup>2</sup> Daniel Beer,<sup>2</sup> Bernhard Wagner<sup>1</sup>*

<sup>1</sup> Fraunhofer Institute for Silicon Technology ISIT,  
Itzehoe, Germany;

<sup>2</sup> Fraunhofer Institute for Digital Media Technology  
IDMT, Ilmenau, Germany

*[Presentation only; not in E-Library]*

**9:30 am**

**EB5-3 A Case Study on a Dynamic Driver: How Electromagnet  
Can Improve the Performance of a Micro Speaker—***Md  
Mehedi, Carpenter Technology Corporation, Philadelphia,  
PA, USA*

*Engineering Brief 545*

## **E-Brief Sessions**

9:45 am

- EB5-4 Alignment of Triple Chamber Eighth-Order Band-Pass Loudspeaker Systems**—*Hao Dong, Yong Shen, Rui Chen*, Nanjing University, Nanjing, China

*Engineering Brief 546*

10:00 am

- EB5-5 Analysis of a Vented-Box Loudspeaker System via the Impedance Function**—*James Lazar, Glenn S. Kubota*, Samsung Research America, Valencia, CA, USA

*Engineering Brief 547*

10:15 am

- EB5-6 Designing Listening Tests of SR/PA Systems, A Case Study**—*Eddy Bøgh Brixen*, EBB-consult, Smørum, Denmark; DPA Microphones, Allerød, Denmark

*Engineering Brief 548*

10:30

- EB5-7 Noise and Distortion Mechanisms Encountered in Switching Audio Power Amplifier Design**—*Robert Muniz*, Harmonic Power Conversion LLC, Douglas, MA, USA

*Engineering Brief 549*

10:45 am

- EB5-8 Acoustic Metamaterial in Loudspeaker Systems Design**—*Letizia Chisari, Mario Di Cola, Paolo Martignon*, Contralto Audio srl, Parma (PR), Italy

*Engineering Brief 550*

11:00 am

- EB5-9 Application of Matrix Analysis for Derivation of Acoustical Impedance of Horns**—*Alexander Voishvillo, Balázs Kákonyi, Brian McLaughlin*, Harman Professional Solutions, Northridge, CA, USA

*Engineering Brief 551*

11:15 am

- EB5-10 Application of Modulated Musical Multitone Signal for Evaluation of Horn Driver Sound Quality**—*Alexander Voishvillo, Balázs Kákonyi, Brian McLaughlin*, Harman Professional Solutions, Northridge, CA, USA

*Engineering Brief 552*

## **E-Brief Sessions**

### **Session EB6 - SPATIAL AUDIO**

**Saturday, Oct. 19, 2:00 pm – 3:00 pm**

**Room 1E11**

Chair: **Filippo Maria Fazi**, University of Southampton,  
Southampton, Hampshire, UK

**2:00 pm**

**EB6-1 Study of the Effect of Tikhonov Regularization on the Low Frequency Performance of Cross-Talk Cancellation Systems**—*Filippo Maria Fazi, Eric Hamdan, Marcos Simón, Andreas Franck*, University of Southampton, Southampton, Hampshire, UK

*[Presentation only; not available in E-Library]*

**2:15 pm**

**EB6-2 Subjective Comparison of Binaural Audio Rendering through Headphones and CTC**—*Jonathan Phillips, Marcos Simón*, University of Southampton, Southampton, UK

*[Presentation only; not available in E-Library]*

**2:30 pm**

**EB6-3 Tetra-Speaker: Continual Evaluation of the Immersive Experience of a Single-Point Reproduction System**—*Parichat Songmuang*, New York University, New York, NY, USA

*Engineering Brief 553*

**2:45 pm**

**EB6-4 Tetrahedral Microphones: An Effective A/B Main System**—*Alexander Dobson, Wieslaw Woszczyk*, McGill University, Montreal, QC, Canada

*Engineering Brief 554*

### **Session EB7 - AUDIO SIGNAL PROCESSING**

**Saturday, Oct. 19, 2:30 pm – 4:15 pm**

**Room 1E10**

Chair: **Dave Moffat**, Queen Mary University London,  
London, UK

**2:30 pm**

**EB7-1 Realistic Procedural Sound Synthesis of Bird Song Using Particle Swarm Optimization**—*Jorge Zúñiga, Joshua D. Reiss*, Queen Mary University of London, London, UK

*Engineering Brief 555*



## **E-Brief Sessions**

2:45 pm

**EB7-2 Multi-Scale Auralization for Multimedia Analytical Feature Interaction**—*Nguyen Le Thanh Nguyen,<sup>1</sup> Hyunhwan Lee,<sup>1</sup> Joseph Johnson,<sup>1</sup> Mitsunori Ogihara,<sup>1</sup> Gang Ren,<sup>1</sup> James Beauchamp<sup>2</sup>*

<sup>1</sup> University of Miami, Coral Gables, FL, USA

<sup>2</sup> University of Illinois at Urbana-Champaign, Urbana, IL, USA

*Engineering Brief 556*

3:00 pm

**EB7-3 Perceptually Motivated Hearing Loss Simulation for Audio Mixing Reference**—*Angeliki Mourgela,<sup>1</sup> Trevor Agus,<sup>2</sup> Joshua D. Reiss<sup>1</sup>*

<sup>1</sup> Queen Mary University of London, London, UK

<sup>2</sup> Queens University Belfast, Belfast, UK

*Engineering Brief 557*

3:15 pm

**EB7-4 Modeling between Partial Components for Musical Timbre Imitation and Migration**—*Angela C. Kihiko,<sup>1</sup> Mitsunori Ogihara,<sup>2</sup> Gang Ren,<sup>2</sup> James Beauchamp<sup>3</sup>*

<sup>1</sup> Spelman College, Atlanta, GA, USA

<sup>2</sup> University of Miami, Coral Gables, FL, USA

<sup>3</sup> University of Illinois at Urbana-Champaign, Urbana, IL, USA

*Engineering Brief 558*

3:30 pm

**EB7-5 Coherence as an Indicator of Distortion for Wide-Band Audio Signals such as M-Noise and Music**—*Merlijn van Veen, Roger Schwenke*, Meyer Sound Laboratories, Berkeley, CA, USA

*Engineering Brief 559*

3:45 pm

**EB7-6 Fast Time Domain Stereo Audio Source Separation Using Fractional Delay Filters**—*Oleg Golokolenkao, Gerald Schuller*, Ilmenau University of Technology, Ilmenau, Germany

*Engineering Brief 560*

4:00 pm

**EB7-7 Line Array Optimization through Innovative Multichannel Filtering**—*Paolo Martignon, Mario Di Cola, Letizia Chisari*, Contralto Audio srl, Casoli, Italy

*Engineering Brief 561*

## **E-Brief Sessions**

### **Session EB8 - APPLICATIONS IN AUDIO**

**Saturday, Oct. 19, 3:30 pm – 4:30 pm**

**Room 1E11**

Chair: **Sunil G. Bharitkar**, HP Labs., Inc., San Francisco, CA, USA

**3:30 pm**

**EB8-1 Vibraby: A Consumer-Trainable Music Tagging Utility**  
—*Scott Hawley*,<sup>1</sup> *Jason Bagley*,<sup>2</sup> *Brett Porter*,<sup>2</sup> *Daisey Traynham*<sup>2</sup>

<sup>1</sup> Belmont University, Nashville, TN, USA

<sup>2</sup> Art+Logic, Pasadena, CA, USA

*Engineering Brief 562*

**3:45 pm**

**EB8-2 Casualty Accessible and Enhanced (A&E) Audio: Trialling Object-Based Accessible TV Audio**—*Lauren Ward*,<sup>1,2</sup> *Matthew Paradis*,<sup>3</sup> *Ben Shirley*,<sup>1</sup> *Laura Russon*,<sup>4</sup> *Robin Moore*,<sup>2</sup> *Rhys Davies*<sup>4</sup>

<sup>1</sup> University of Salford, Salford, UK

<sup>2</sup> BBC R&D, North Lab, Salford, UK

<sup>3</sup> BBC R&D, South Lab, London, UK

<sup>4</sup> BBC Studios, Cardiff, Wales, UK

*Engineering Brief 563*

**4:00 pm**

**EB8-3 Generative Modeling of Metadata for Machine Learning Based Audio Content Classification**—*Sunil G. Bharitkar*, HP Labs., Inc., San Francisco, CA, USA

*Engineering Brief 564*

**4:15 pm**

**EB8-4 Individual Headphone Equalization at the Eardrum with New Apps for Computers and Cellphones**—*David Griesinger*, David Griesinger Acoustics, Cambridge, MA, USA

*[Presentation only; not available in E-Library]*

## Electronic Instrument Design

# ELECTRONIC DANCE MUSIC

<b>EDM-01</b>	<b>Mixing EDM Masterclass</b>	Thursday, Oct. 17 2:00 pm – 3:00 pm Room 1E12
<b>EDM-02</b>	<b>Art &amp; Origins of Sampling</b>	Thursday, Oct. 17 3:15 pm – 4:15 pm Room 1E12
<b>EDM-03</b>	<b>Remixing—Breaking the Illusion</b>	Thursday, Oct. 17 4:30 pm – 5:30 pm Room 1E12

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### **EDM01 - MIXING EDM MASTERCLASS** **Thursday, October 17, 2:00 pm – 3:00 pm** **Room 1E12**

Presenter: Ariel Borujow, Westward Music Group Inc.

### **EDM02 - THE ART & ORIGINS OF SAMPLING: FROM VINYL TO DAW; FROM HIP-HOP TO DANCE MUSIC** **Thursday, October 17, 3:15 pm – 4:15 pm** **Room 1E12**

Moderator: Nate Mars, Electronic Music Collective

### **EDM03 - REMIXING—BREAKING THE ILLUSION** **Thursday, October 17, 4:30 pm – 5:30 pm** **Room 1E12**

Presenter: Rick Snoman, Dance Music Productio,  
Manchester, UK

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# ELECTRONIC INSTRUMENT DESIGN & APPLICATIONS

<b>EI-01</b>	<b>Drum Machines, Groove Boxes, Etc.</b>	Thursday, Oct. 17 9:00 am –10:00 am Room 1E17
<b>EI-02</b>	<b>Not Your Everyday Filters</b>	Thursday, Oct. 17 10:15 am –11:15 am Room 1E17

## **Electronic Instrument Design**

<b>EI-03</b>	<b>Modular Synthesizer Designs</b>	Thursday, Oct. 17 2:15 pm –3:45 pm Room 1E17
<b>EI-04</b>	<b>Embedded Computing and Instrument Design</b>	Thursday, Oct. 17 4:00 pm –5:30 pm Room 1E17

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### **EI01 - DRUM MACHINES, GROOVE-BOXES, AND TEMPO-BASED ELECTRONIC INSTRUMENTS**

**Thursday, October 17, 9:00 am – 10:00 am**

**Room 1E17**

Presenters: **Michael Bierylo**, Berklee College of Music, Brookline, MA, USA  
**Dave Rossum**

### **EI02 - NOT YOUR EVERYDAY FILTERS**

**Thursday, October 17, 10:15 am – 11:45 am**

**Room 1E17**

Presenter: **Jayant Datta**, Audio Precision, Beaverton, OR, USA

*This session is presented in association with the AES Technical Committee on Signal Processing*

### **EI03 - MODULAR SYNTHESIZER DESIGNS - FROM THE PAST TO FUTURE DIRECTIONS**

**Thursday, October 17, 2:15 pm – 3:45 pm**

**Room 1E17**

Moderator: **Michael Bierylo**, Berklee College of Music, Brookline, MA, USA

Panelists: *Andrew Ikenberry*  
*Dave Rossum*

### **EI04 - EMBEDDED COMPUTING AND INSTRUMENT DESIGN**

**Thursday, October 17, 4:00 pm – 5:30 pm**

**Room 1E17**

Moderator: **Paul Lehrman**, Tufts University, Medford, MA, USA

Panelists: *Richard Graham*  
*Andrew Ikenberry*  
*Denis Labrecque*  
*Teresa Marrin Nakra*  
*Dave Rossum*

**GAME AUDIO & XR**

<b>GA-01</b>	<b>4-pi Reverb Effects for In-Game Sounds</b>	Wednesday, Oct. 16 9:00 am – 10:30 am Room 1E06
<b>GA-02</b>	<b>Abbey Road Spatial Audio Forum</b>	Wednesday, Oct. 16 9:15 am – 10:45 am Room 1E08
<b>GA-03</b>	<b>Interactive AR Audio Using Spark</b>	Wednesday, Oct. 16 10:45 am – 11:45 am Room 1E13
<b>GA-04</b>	<b>Real-Time Mixing and Monitoring Practices</b>	Wednesday, Oct. 16 1:30 pm – 2:30 pm Room 1E13
<b>GA-05</b>	<b>Spatial Storytelling in Games</b>	Wednesday, Oct. 16 2:45 pm – 4:15 pm Room 1E08
<b>GA-06</b>	<b>Simulating Real World Acoustic Phenomena</b>	Wednesday, Oct. 16 4:30 pm – 5:30 pm Room 1E08
<b>GA-07</b>	<b>MPEG-H 3D Audio Goes VR</b>	Thursday, Oct. 17 9:00 am – 10:30 am Room 1E21
<b>GA-08</b>	<b>Intro to Machine Learning for Game Audio</b>	Thursday, Oct. 17 10:15 am – 11:45 am Room 1E08
<b>GA-09</b>	<b>Audio Productivity in Mixed Reality</b>	Thursday, Oct. 17 1:15 pm – 2:15 pm Room 1E13
<b>GA-10</b>	<b>Lessons Learned in Game Audio</b>	Thursday, Oct. 17 2:15 pm – 3:15 pm Room 1E13
<b>GA-11</b>	<b>Microtalks</b>	Thursday, Oct. 17 3:30 pm – 4:30 pm Room 1E13
<b>GA-12</b>	<b>Not Playing Games with Your Business</b>	Friday, Oct. 18 9:00 am – 10:30 am Room 1E13
<b>GA-13</b>	<b>Borderlands 3—Wild West of Atmos</b>	Friday, Oct. 18 10:30 am – 12:00 noon Room 1E06
<b>GA-14</b>	<b>Just Cause 4 OST: Creative Collaboration</b>	Friday, Oct. 18 1:30 pm – 2:30 pm Room 1E17
<b>GA-15</b>	<b>Binaural Audio—Just a 360/VR Geek Thing?</b>	Saturday, Oct. 20 1:30 pm – 3:00 pm Room 1E08

## **Game Audio & XR**

### **GA01 - 4-Pi REVERB EFFECTS FOR IN-GAME SOUNDS**

**Wednesday, October 16, 9:00 am – 10:30 am**

**Room 1E06**

Presenters: **Tomoya Kishi**, CAPCOM Co., Ltd., Japan  
**Steve Martz**, THX Ltd., San Rafael, CA, USA  
**Masataka Nakahara**, ONFUTURE Ltd., Tokyo, Japan;  
SONA Corp., Tokyo, Japan  
**Kazutaka Someya**, beBlue Co., Ltd., Tokyo, Japan

*This session is presented in association with the AES Technical Committee on Audio for Games and AES Technical Committee on Spatial Audio*

### **GA02 - ABBEY ROAD SPATIAL AUDIO FORUM— MUSIC PRODUCTION IN VR AND AR**

**Wednesday, October 16, 9:15 am – 10:45 am**

**Room 1E08**

Chair: **Gavin Kearney**, University of York, York, UK

Panelists: *Stephen Barton*, Afterlight Inc.  
*Axel Drioli*, Philharmonia Orchestra, London, UK  
*Oliver Kadel*, 1.618 Digital, London, UK; University  
of West London, London, UK  
*Muki Kulhan*, Muki International, UK  
*Hyunkook Lee*, University of Huddersfield,  
Huddersfield, UK  
*Mirek Stiles*, Abbey Road Studios, London, UK

*This session is presented in association with the AES Technical Committee on Audio for Games*

### **GA03 - INTERACTIVE AR AUDIO USING SPARK**

**Wednesday, October 16, 10:45 am – 11:45 am**

**Room 1E13**

Moderator: **Dren McDonald**, Facebook

Panelists: *Kristi Boeckmann*  
*Matt Nichols*, Facebook  
*Grey Robbins*, Facebook

*This session is presented in association with the AES Technical Committee on Audio for Games*

### **GA04 - REAL-TIME MIXING AND MONITORING BEST PRACTICES FOR VIRTUAL, MIXED, AND AUGMENTED REALITY**

**Wednesday, October 16, 1:30 pm – 2:30 pm**

**Room 1E13**

## **Game Audio & XRs**

Moderator: **Scott Selfon**, Audio Experiences Lead, Facebook Reality Labs (Oculus Research)

*This session is presented in association with the AES Technical Committee on Audio for Games*

### **GA05 - SPATIAL STORYTELLING IN GAMES**

**Wednesday, October 16, 2:45 pm – 4:15 pm**

**Room 1E08**

Moderator: **Rob Bridgett**, Eidos Montreal, Montreal, Canada

Panelists: *Jason Kanter*, Audio Director, Avalanche Studios, New York, NY, USA

*Phillip Kovats*, WWS Sound, Sony Interactive Entertainment

*Mark Petty*, Gearbox Software

### **GA06 - SIMULATING REAL WORLD ACOUSTIC PHENOMENA: FROM GRAPHICS TO AUDIO**

**Wednesday, October 16, 4:30 pm – 5:30 pm**

**Room 1E08**

Presenter: **Christophe Tornieri**, Audiokinetic

*This session is presented in association with the AES Technical Committee on Audio for Games and AES Technical Committee on Spatial Audio*

### **GA07 - MPEG-H 3D AUDIO GOES VR**

**Thursday, October 17, 9:00 am – 10:30 am**

**Room 1E21**

Chair: **Jürgen Herre**, International Audio Laboratories Erlangen, Erlangen, Germany; Fraunhofer IIS, Erlangen, Germany

Panelists: *Adrian Murtaza*, Fraunhofer Institute for Integrated Circuits IIS, Erlangen, Germany

*Nils Peters*, Qualcomm, Advanced Tech R&D, San Diego, CA, USA

*This session is presented in association with the AES Technical Committee on Coding of Audio Signals*

### **GA08 - INTRODUCTION TO MACHINE LEARNING FOR GAME AUDIO**

**Thursday, October 17, 10:15 am – 11:45 am**

**Room 1E08**

Presenter: **John Byrd**, Gigantic Software, Santa Ana, CA, USA

*This session is presented in association with the AES Technical Committee on Audio for Games*

## **Game Audio & XR**

### **GA09 - AUDIO PRODUCTIVITY IN MIXED REALITY**

**Thursday, October 17, 1:15 pm – 2:15 pm**

**Room 1E13**

Presenters: **Sally Kellaway**, Microsoft, Seattle, WA, USA  
**Joe Kelly**, Microsoft, Seattle, WA, USA

*This session is presented in association with the AES Technical Committee on Audio for Games*

### **GA10 - LESSONS LEARNED IN GAME AUDIO**

**Thursday, October 17, 2:15 pm – 3:15 pm**

**Room 1E13**

Presenter: **Alex Wilmer**, Wilmer Sound, San Francisco, CA, USA  
**Sae Wilmer**, Wilmer Sound, San Francisco, CA, USA

### **GA11 - Micro Talks**

**Thursday, October 17, 3:30 pm – 4:30 pm**

**Room 1E13**

Presenters: **Sally Kellaway**, Microsoft, Seattle, WA, USA  
**Steve Martz**, THX Ltd., San Rafael, CA, USA

*This session is presented in association with the AES Technical Committee on Audio for Games*

### **GA12 - NOT PLAYING GAMES WITH YOUR BUSINESS**

**Friday, October 18, 9:00 am – 10:30 am**

**Room 1E13**

Chair: **Alex Wilmer**, Wilmer Sound, San Francisco, CA, USA

Panelists: *Jason Kanter*, Audio Director, Avalanche Studios  
*Adam Levensen*, Sr. Dir. of Business Development  
& Marketing, Waves Audio  
*Michael Sinterniklaas*, President, NYAV Post

### **GA13 - BORDERLANDS 3—THE WILD WEST OF ATMOS**

**Friday, October 18, 10:30 am – 12:00 noon**

**Room 1E06**

Presenters: **Brian Fieser**, Gearbox Software  
**Julian Kwasneski**, Bay Area Sound  
**Mark Petty**, Gearbox Software  
**William Storkson**, Bay Area Sound

*This session is presented in association with the AES Technical Committee on Audio for Games*

### **GA14 - JUST CAUSE 4 OST: CREATIVE COLLABORATION**

**Friday, October 18, 1:30 pm – 2:30 pm**

**Room 1E17**



## **Hip-Hop and R&B**

Presenter: **Zach Abramson**, YouTooCanWoo

*This session is presented in association with the AES Technical Committee on Audio for Games*

### **GA15 - BINAURAL AUDIO - JUST A 360/VR GEEK THING OR FUTURE AUDIO ENTERTAINMENT?**

**Saturday, October 19, 1:30 pm – 3:00m**

**Room 1E08**

Chair: **Tom Ammermann**, New Audio Technology GmbH, Hamburg, Germany

Panelists: *David Miles Huber*, Seattle, WA, USA  
*Andres A. Mayo*, Andres Mayo Mastering & Audio Post, Buenos Aires, Argentina  
*Agnieszka Roginska*, New York University, New York, NY, USA  
*Thilo Schaller*, SUNY Buffalo, Buffalo, NY, USA

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## **HIP-HOP AND R&B**

<b>HH-01</b>	<b>Chopped and Looped (An AES Special Event)</b>	Thursday, Oct. 17 9:30 am – 11:00 am Room 1E15+16
<b>HH-02</b>	<b>The Soul of an R&amp;B Mix</b>	Friday, Oct. 18 2:30 pm – 3:30 pm Room 1E12
<b>HH-03</b>	<b>Studio Design for Hip-Hop and R&amp;B</b>	Friday, Oct. 18 3:30 pm – 4:30 pm Room 1E12
<b>HH-04</b>	<b>Engineering for The Abstract</b>	Friday, Oct. 18 4:30 pm – 5:30 pm Room 1E12

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### **HH01 - CHOPPED AND LOOPED—INSIDE THE ART OF SAMPLING FOR HIP-HOP (AN AES SPECIAL EVENT)**

**Thursday, October 17, 9:30 am – 11:00 am**

**Room 1E15+16**

Moderator: **Paul “Willie Green” Womack**, Willie Green Music, Brooklyn, NY, USA

Panelists: *Just Blaze*, Jay-Z, Kanye West  
*Breakbeat Lou*, Ultimate Breaks and Beats  
Hank Shocklee, Shocklee Entertainment, New York, NY, USA

## **Hip-Hop and R&B**

*Ebonie Smith, Atlantic Records/Hamilton Cast Album*

### **HH02 - THE SOUL OF AN R&B MIXS**

**Friday, October 18, 2:30 pm – 3:30 pm**

**Room 1E12**

Moderator: **Paul “Willie Green” Womack**, Willie Green Music,  
Brooklyn, NY, USA

Panelists: *Prince Charles Alexander*, Berklee College of Music,  
Boston, MA, USA  
*Neal Pogue*, Neal H Pogue, Atlanta, GA, USA

### **HH03 - STUDIO DESIGN FOR HIP-HOP AND R&B**

**Friday, October 18, 3:30 pm – 4:30 pm**

**Room 1E12**

Moderators: **David Malekpour**, Professional Audio Design, Inc.  
**Paul “Willie Green” Womack**, Willie Green Music,  
Brooklyn, NY, USA

Panelists: *Larrance Dopson*  
*James Fauntleroy*  
*Frank Hendler*  
*Rick St. Hilaire*

### **HH04 - ENGINEERING FOR THE ABSTRACT: RECORDING Q-TIP AND A TRIBE CALLED QUEST**

**Friday, October 18, 4:30 pm – 5:30 pm**

**Room 1E12**

Presenter: **Gloria Kaba**, Little Underground

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## **HISTORICAL SESSIONS**

<b>H-01</b>	<b>Integrating History into Modern Curriculum</b>	Wednesday, Oct. 16 9:15 am – 10:15 am Room 1E12
<b>H-02</b>	<b>Building Success through Your Team</b>	Wednesday, Oct. 16 5:00 pm – 6:00 pm Room 1E21
<b>H-03</b>	<b>Rudy Van Gelder: A Legacy</b>	Thursday, Oct. 17 1:15 pm – 2:45 pm Room 1E08
<b>H-04</b>	<b>Spike Jones: Posterous Precision</b>	Thursday, Oct. 17 2:45 pm – 4:15 pm Room 1E08

## **Historical Sessions**

<b>H-05</b>	<b>Tom Dowd Film</b>	Thursday, Oct. 17 5:30 pm – 7:00 pm Dolby Theater
<b>H-06</b>	<b>African Americans in Audio (An AES Special Event)</b>	Friday, Oct. 18 9:30 am – 11:00 am Room 1E15+16
<b>H-07</b>	<b>Compression Driver DNA</b>	Friday, Oct. 18 11:15 am – 12:15 pm Room 1E10

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### **H01 - INTEGRATING HISTORY INTO THE MODERN AUDIO CURRICULUM**

**Wednesday, October 16, 9:15 am – 10:15 am**  
**Room 1E12**

Chair: **Scott Burgess**, University of Colorado Denver,  
Denver, CO, USA

Panelists: *Gabe Herman*, The University of Hartford, The Hartt  
School, Hartford, CT, USA  
*Susan Schmidt Horning*, St. John's University  
*Jessica Thompson*, Jessica Thompson Audio,  
Berkeley, CA, USA

### **H02 - BUILDING SUCCESS THROUGH YOUR TEAM—VIEWS FROM THE FIRST WOMAN BROADCAST ENGINEER**

**Wednesday, October 16, 5:00 pm – 6:00 pm**  
**Room 1E21**

Presenter: **Pamela Gibson**

### **H03 - RUDY VAN GELDER: A LEGACY IN AUDIO ENGINEERING**

**Thursday, October 17, 1:15 pm – 2:45 pm**  
**Room 1E08**

Presenters: **Richard Capeless**, Deep Groove Mono, New York,  
NY, USA  
**Michael Cuscuna**, Mosaic Records  
**Don Sickler**, Second Floor Music  
**Maureen Sickler**, Second Floor Music

### **H04 - SPIKE JONES: PREPOSTEROUS PRECISION**

**Thursday, October 17, 2:45 pm – 4:15 pm**  
**Room 1E08**

Chair: **Mike Wisland**, Utah Valley University, Orem, UT, USA

Panelists: *Arlen Card*, Utah Valley University, Orem, UT, USA  
*Skip Craig*

## **Historical Sessions**

*Leslie Ann Jones*, Recording Engineer and Producer,  
Director of Music Recording and Scoring, Skywalker  
Sound, San Rafael, CA, USA  
*Emily Taggart*

### **H05 - LIMITED ENGAGEMENT SCREENING, TOM DOWD AND THE LANGUAGE OF MUSIC**

**Thursday, October 18, 5:30 pm – 7:00 pm**  
**Dolby Theater, 1350 Ave. of the Americas**

### **H06 - AFRICAN AMERICANS IN AUDIO (AN AES SPECIAL EVENT)**

**Friday, October 18, 9:30 am — 11:00 am**  
**Room 1E15+16**

Moderator: **Leslie Gaston-Bird**, Mix Messiah Productions,  
Brighton, UK; Institute of Contemporary Music  
Performance, London, UK

Panelists: *Prince Charles Alexander*, Berklee College of Music,  
Boston, MA, USA  
*Abhita Austin*, Audio Engineer-Producer and Founder  
of The Creator's Suite  
*James Henry*, recording engineer/producer  
and audio educator  
*Ebonie Smith*, Atlantic Records/Hamilton Cast Album  
*Paul "Willie Green" Womack*, Willie Green Music,  
Brooklyn, NY, USA  
*Bobby Wright*, Hampton University

### **H07 - COMPRESSION DRIVER DNA: THE ORIGIN AND SEEDS OF PROGRESS**

**Friday, October 18, 11:15 am – 12:15 pm**  
**Room 1E10**

Presenters: **Thomas Dunker**  
**Bjørn Kolbrek**, Celestion, Ipswich, UK

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## **IMMERSIVE & SPATIAL AUDIO**

**IS-01**     **Music Production in  
Immersive Formats**

Wednesday, Oct. 16  
10:45 am – 12:00 noon  
Room 1E06

## **Immersive & Spatial Audio**

<b>IS-02</b>	<b>Reproduction and Evaluation</b>	Wednesday, Oct. 16 4:15 pm – 5:45 pm Room 1E17
<b>IS-03</b>	<b>ISSP</b>	Thursday, Oct. 17 10:15 am – 11:15 am Room 1E06
<b>IS-04</b>	<b>3D Audio Philosophies for Commercial Music</b>	Thursday, Oct. 17 4:30 pm – 5:30 pm Room 1E08
<b>IS-05</b>	<b>Building Listening Tests in VR</b>	Friday, Oct. 18 9:00 am – 10:00 am Room 1E08
<b>IS-06</b>	<b>6DoF Case Studies</b>	Friday, Oct. 17 2:15 pm – 3:15 pm Room 1E08
<b>IS-07</b>	<b>6DoF Sound Capture and Playback</b>	Friday, Oct. 17 3:30 pm – 4:30 pm Room 1E08
<b>IS-08</b>	<b>Ambisonics Tools: Session 1</b>	Saturday, Oct. 19 9:00 am – 12:00 noon Room 1E13
<b>IS-09</b>	<b>Producing Hi-Quality 360/3D VR Videos</b>	Saturday, Oct. 19 9:00 am – 10:30 am Room 1E08
<b>IS-10</b>	<b>Music Production for Dolby Atmos</b>	Saturday, Oct. 19 11:30 am – 12:30 pm Room 1E06

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### **IS01 - ISSP: IMMERSIVE SOUND SYSTEM PANNING. AN INTERACTIVE SOFTWARE APPLICATION AND TOOLS FOR LIVE PERFORMANCES**

**Wednesday, October 16, 10:30 am – 12:00 noon  
Room 1E06**

Presenter: **Ianina Canalis**, National University of Lanús,  
Buenos Aires, Argentina

### **IS02 - MUSIC PRODUCTION IN IMMERSIVE FORMATS: ALTERNATIVE PERSPECTIVES**

**Wednesday, October 16, 10:45 am – 12:00 noon  
Room 1E17**

Presenters: **Thomas Aichinger**, scopeaudio, Austria  
**Zachary Bresler**, University of Agder, Kristiansand S,  
Vest-Agder, Norway  
**Eve Klein**, University of Queensland, Brisbane,  
Queensland, Australia  
**Jo Lord**, University of West London, London, UK

## **Immersive & Spatial Audio**

### **IS03 - REPRODUCTION AND EVALUATION OF SPATIAL AUDIO THROUGH SPEAKERS**

**Wednesday, October 16, 4:15 pm – 5:45 pm**

**Room 1E06**

Presenters: **Juan Simon Calle Benitez**, THX Ltd., San Francisco, CA, USA  
**Patrick Flangan**, THX Ltd.  
**Gavin Kearney**, University of York, York, UK  
**Nils Peters**, Qualcomm, Advanced Tech R&D, San Diego, CA, USA  
**Marcos Simon**, AudioScenic, Southampton UK

*This session is presented in association with the AES Technical Committee on Audio for Games and AES Technical Committee on Spatial Audio*

### **IS04 - 3D AUDIO PHILOSOPHIES & TECHNIQUES FOR COMMERCIAL MUSIC**

**Thursday, October 17, 4:30 pm – 5:30 pm**

**Room 1E08**

Presenter: **Bt Gibbs**, Skyline Entertainment and Publishing, Morgan Hill, CA, USA; Tool Shed Studios, Morgan Hill, CA, USA

### **IS05 - BUILDING LISTENING TESTS IN VR**

**Friday, October 18, 9:00 am – 10:00 am**

**Room 1E08**

Presenters: **Gavin Kearney**, University of York, York, UK  
**Tomasz Rudzki**, University of York, York, UK  
**Benjamin Tsui**, University of York, York, UK

*This session is presented in association with the AES Technical Committee on Audio for Games*

### **IS06 - CAPTURING REALITY WITH THE USE OF SPATIAL SOUND AND HIGH ORDER AMBISONICS—ETHNOGRAPHIC AND SIX DEGREES OF FREEDOM (6DOF) CASE STUDIES**

**Friday, October 18, 2:15 pm – 3:15 pm**

**Room 1E08**

Moderator: **Tomasz Zernicki**, Zylia sp. z o.o., Poznan, Poland

Panelists: *Florian Grond*, McGill University, Montreal, Canada  
*Eduardo Patricio*, Zylia Sp. z o.o., Poznan, Poland  
*Zack Settel*, University of Montreal, Montreal, Quebec, Canada

### **IS07 - SIX-DEGREES-OF-FREEDOM (6DOF) SOUND CAPTURE AND PLAYBACK USING MULTIPLE HIGHER**

## **Immersive & Spatial Audio**

### **ORDER AMBISONICS (HOA) MICROPHONES**

**Friday, October 18, 3:30 pm – 4:30 pm**

**Room 1E08**

Presenters: **Lukasz Januszkiewicz**, Zylia Sp. z o.o., Poznan, Poland  
**Eduardo Patricio**, Zylia Sp. z o.o., Poznan, Poland  
**Tomasz Zernicki**, Zylia sp. z o.o., Poznan, Poland

### **IS08 - AMBISONICS TOOLS FOR IMMERSIVE AUDIO CAPTURE AND POST-PRODUCTION**

**Saturday, October 19, 9:00 am – 12:00 noon**

**Room 1E13**

Presenters: **Ianina Canalis**, National University of Lanús, Buenos Aires, Argentina  
**Brian Glasscock**, Sennheiser  
**Andres A. Mayo**, Andres Mayo Mastering & Audio Post, Buenos Aires, Argentina  
**Martin Muscatello**, 360 Music Lab

*Preregistration is required for this event. Tickets are \$75 (member) and \$125 (non-member) and can be purchased on-line when you register for the convention All Access Badge. Seating is limited.*

### **IS09 - PRODUCING HIGH-QUALITY 360/3D VR CONCERT VIDEOS WITH 3D IMMERSIVE AUDIO**

**Saturday, October 19, 9:00 am – 10:30 am**

**Room 1E08**

Presenters: **Ming-Lun Lee**, University of Rochester, Rochester, NY, USA  
**Steve Philbert**, University of Rochester, Rochester, NY, USA

### **IS10 - MUSIC PRODUCTION FOR DOLBY ATMOS**

**Thursday, October 17, 10:30 am – 11:30 am**

**Room 1E06**

Presenter: **Lasse Nipkow**, Silent Work LLC, Zurich, Switzerland

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## **NETWORKED AUDIO**

NA-01	<b>Solution-Based Approaches</b>	Wednesday, Oct. 16 9:00 am – 10:30 am Room 1E13
NA-02	<b>An Introductory Tutorial to AES70</b>	Wednesday, Oct. 16 2:45 pm – 4:15 pm Room 1E13

## **Networked Audio**

<b>NA-03</b>	<b>Media Networks</b>	Saturday, Oct. 19 10:45 am – 12:15 pm Room 1E08
<b>NA-04</b>	<b>Network Audio Strategies</b>	Saturday, Oct. 19 1:30 pm – 2:30 pm Room 1E21
<b>NA-05</b>	<b>Network Media Open Specifications</b>	Saturday, Oct. 19 2:45 pm – 4:15 pm Room 1E21

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### **NA01 - SOLUTION-BASED APPROACHES FOR NETWORKED AUDIO IN LIVE PRODUCTION**

**Wednesday, October 16, 9:00 am – 10:30 am**  
**Room 1E13**

Moderator: **Dan Ferrisi**, Sound & Communications,  
Port Washington, NY, USA

Panelists: *Guido Esch*, New Motion Touring  
*Genio Kronauer*, L-Acoustics, Marcoussis, France  
*Morten Lave*, Morten Lave, Toronto, ON, Canada  
*Patrice Lavoie*, Solotech  
*Rob Mele*, Meyer Sound Laboratories  
*Jamie Pollock*, Kore Audio Design LLC

### **NA02 - AN INTRODUCTORY TUTORIAL TO AES70**

**Wednesday, October 16, 2:45 pm – 4:15 pm**  
**Room 1E13**

Presenters: **Jeff Berryman**, OCA Alliance  
**Simon Jones**, Focusrite  
**Ethan Wetzell**, OCA Alliance

### **NA03 - WHAT AUDIO ENGINEERS NEED TO KNOW ABOUT MEDIA NETWORKS**

**Saturday, October 19, 10:45 am – 12:15 pm**  
**Room 1E08**

Presenter: **Patrick Killianey**, Audinate, Buena Park, CA, USA

### **NA04 - NETWORK AUDIO STRATEGIES: CHARTING SOFTWARES, HARDWARES, INTERNET REQUIREMENTS**

**Saturday, October 19, 1:30 pm – 2:30 pm**  
**Room 1E21**

Presenter: **Sarah Weaver**, NowNet Arts, Inc.



## **Off-Site Events**

### **NA05 - NETWORK MEDIA OPEN SPECIFICATIONS (NMOS)— HOW THEY RELATE TO AUDIO NETWORKING**

**Saturday, October 19, 2:45 pm – 4:15 pm**

**Room 1E21**

Presenter: **Andreas Hildebrand**, ALC NetworX GmbH, Munich,  
Germany

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## **OFF-SITE EVENTS**

<b>B-04</b>	<b>An Intimate Evening with Tesla and Twain</b>	Wednesday, Oct. 16 7:00 pm & 9:00 pm Radio Waves Building
<b>H-05</b>	<b>Tom Dowd Film</b>	Thursday, Oct. 17 5:30 pm – 7:00 pm Dolby Theater
<b>B-10</b>	<b>Tour of Stitcher Studios</b>	Thursday, Oct. 17 7:00 pm – 8:00 pm Stitcher Studios
<b>TT-01</b>	<b>Quad Recording Studio</b>	Friday, Oct. 18 11:00 am – 2:00 pm Quad Studios
<b>B-17</b>	<b>The Current War</b>	Friday, Oct. 18 6:30 pm – 8:00 pm Dolby Theater

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### **B04 - AN INTIMATE EVENING WITH TESLA AND TWAIN**

**Wednesday, October 16, 7:00 pm and 9:00 pm**

**The Radio Waves Building (49 West 27th Street, NYC) Penthouse**

*Presented by the HEAR Now Festival in tandem with SueMedia Radio Waves Studios at 7:00 pm and 9:00 pm. Tickets are required for each performance; free with your badge. Limited to 35 people per performance*

### **H05 - LIMITED ENGAGEMENT SCREENING, TOM DOWD AND THE LANGUAGE OF MUSIC**

**Thursday, October 18, 5:30 pm – 7:00 pm**

**Dolby Theater, 1350 Ave. of the Americas**

*Seating is limited to 75 people and by advance ticket only.*

*NOTE: No food or drink (including water) is allowed in the Dolby Theater, so come hydrated and fed.*

*Doors will open shortly after 5, the program will start promptly at*

## **Off-Site Events**

*5:30. Movie at 5:35pm, Q&A will follow at 7:05; event ends at 8:00 sharp.*

*Presented by the AES Historical Track in conjunction with Language of Music Films LLC and Dana Dowd*

### **B10 - TOUR OF STITCHER STUDIOS**

**Thursday, October 17, 7:00 pm – 8:00 pm**

**Stitcher Studios, 5 Bryant Park (6th Ave. & 40th St.)**

*Limited to 20 people; tickets available at Registration*

### **TT01 - TOUR OF QUAD RECORDING STUDIOS**

**Friday, October 18, 11:00 am – 2:00 pm**

**Quad Recording Studios, 723 7th Ave.**

*Limited to 30 people; tickets available at Registration*

### **B17 - THE CURRENT WAR: DIRECTOR'S CUT**

**Friday, October 18, 6:30 pm – 8:00 pm**

**Dolby Theater, 1350 6th Ave. at W. 55th St.**

*This event is limited to 70 people. Tickets are required (free) and can be obtained at the Registration area.*

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## **PAPER SESSIONS**

<b>P-01</b>	<b>Applications in Audio</b>	Wednesday, Oct. 16 9:00 am – 11:30 am Room 1E10
<b>P-02</b>	<b>Audio Signal Processing</b>	Wednesday, Oct. 16 9:00 am – 11:30 am Room 1E11
<b>P-03</b>	<b>Posters: Transducers</b>	Wednesday, Oct. 16 10:30 am – 12:00 noon South Concourse A
<b>P-04</b>	<b>Room Acoustics</b>	Wednesday, Oct. 16 1:30 pm – 5:00 pm Room 1E10
<b>P-05</b>	<b>Transducers</b>	Wednesday, Oct. 16 1:30 pm – 5:00 pm Room 1E11
<b>P-06</b>	<b>Posters: Audio Signal Processing</b>	Wednesday, Oct. 16 3:00 pm – 4:30 pm South Concourse A
<b>P-07</b>	<b>Perception</b>	Thursday, Oct. 17 9:00 am – 12:00 noon

## **Paper Sessions**

<b>P-08</b>	<b>Recording, Production, and Live Sound</b>	Room 1E10 Thursday, Oct. 17 9:00 am – 12:00 noon
<b>P-09</b>	<b>Posters: Applications in Audio</b>	Room 1E11 Thursday, Oct. 17 10:00 am – 11:30 am South Concourse A
<b>P-10</b>	<b>Spatial Audio—Part 1</b>	Thursday, Oct. 17 1:15 pm – 4:15 pm Room 1E10
<b>P-11</b>	<b>Semantic Audio</b>	Thursday, Oct. 17 1:15 pm – 2:45 pm Room 1E11
<b>P-12</b>	<b>Posters: Room Acoustics</b>	Thursday, Oct. 17 3:00 pm – 4:30 pm South Concourse A
<b>P-13</b>	<b>Spatial Audio—Part 2</b>	Friday, Oct. 18 9:00 am – 11:00 am Room 1E10
<b>P-14</b>	<b>Spatial Audio—Part 3</b>	Friday, Oct. 18 1:45 pm – 4:15 pm Room 1E10
<b>P-15</b>	<b>Audio Education</b>	Saturday, Oct. 19 9:00 am – 11:30 am Room 1E10
<b>P-16</b>	<b>Posters: Spatial Audio</b>	Saturday, Oct. 19 10:30 am – 12:00 noon South Concourse A
<b>P-17</b>	<b>Product Development</b>	Saturday, Oct. 20 3:00 pm – 5:30 pm Room 1E09
<b>P-18</b>	<b>Posters: Perception</b>	Saturday, Oct. 20 3:00 pm – 4:30 pm South Concourse A

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### **Session P1 - APPLICATIONS IN AUDIO** **Wednesday, Oct. 16, 9:00 am – 11:30 am** **Room 1E10**

Chair: **Kevin Bastyr**, Harman International, Novi, MI, USA

**9:00 am**

**P1-1 Personal Sound Zones: A Comparison between Frequency and Time Domain Formulations in a Transportation Context**—*Lucas Vindrola,<sup>1,2</sup> Manuel Melon,<sup>1</sup> Jean-Christophe Chamard,<sup>2</sup> Bruno Gazengel,<sup>1</sup> France; Guy Plantier<sup>1</sup>*

<sup>1</sup> LAUM, Le mans Université, Les Mans, France

## **Paper Sessions**

<sup>2</sup> PSA Group, Rueil-Malmison, France

*Convention Paper 10216*

**9:30 am**

- P1-2 Mitigating the Effect of In-Vehicle Road Noise Cancellation on Music Playback**—*Tao Feng, Kevin Bastyr*, Harman International, Novi, MI, USA

*Convention Paper 10217*

**10:00 am**

- P1-3 Effect of a Global Metronome on Ensemble Accuracy in Networked Music Performance**—*Robert Hupke, Lucas Beyer, Marcel Nophut, Stephan Preihs, Jürgen Peissig*, Leibniz Universität Hannover, Hannover, Germany

*Convention Paper 10218*

**10:30 am**

- P1-4 Evaluation of Multichannel Audio in Automobiles versus Mobile Phones**—*Fesal Toosy, Muhammad Sarwar Ehsan*, University of Central Punjab, Lahore, Pakistan

*Convention Paper 10219*

**11:00 am**

- P1-5 Realizing An Acoustic Vector Network Analyzer**—*Marcus MacDonell, Jonathan Scott*, University of Waikato, Hamilton, Waikato, New Zealand

*Convention Paper 10220*

### **Session P2 - AUDIO SIGNAL PROCESSING**

**Wednesday, Oct. 16, 9:00 am – 12:00 noon**

**Room 1E11**

Chair: **Scott Hawley**, Belmont University, Nashville, TN, USA

**9:00 am**

- P2-1 Analyzing and Extracting Multichannel Sound Field**—*Pei-Lun Hsieh*, Ambidio, Glendale, CA, USA

*Convention Paper 10221*

**9:30 am**

- P2-2 Profiling Audio Compressors with Deep Neural Networks**—*Scott Hawley,<sup>1</sup> Benjamin Colburn,<sup>2</sup> Stylianos Ioannis Mimitakis<sup>3</sup>*

<sup>1</sup> Belmont University, Nashville, TN, USA

## **Paper Sessions**

<sup>2</sup> ARiA Acoustics, Washington, DC, USA

<sup>3</sup> Fraunhofer Institute for Digital Media Technology (IDMT), Ilmenau, Germany

*Convention Paper 10222*

**10:00 am**

**P2-3 Digital Parametric Filters Beyond Nyquist Frequency—**  
*Juan Sierra*, Stanford University, Stanford, CA, USA

*Convention Paper 10224*

**10:30 am**

**P2-4 Using Volterra Series Modeling Techniques to Classify Black-Box Audio Effects—***Ethan Hoerr, Robert C. Maher*, Montana State University, Bozeman, MT, USA

*Convention Paper 10225*

**11:00 am**

**P2-5 Modifying Audio Signals for Reproduction with Reduced Room Effect—***Christof Faller*, Illusonic GmbH, Uster, Zürich, Switzerland

*Convention Paper 10226*

**11:30 am**

**P2-6 On the Similarity between Feedback/Loopback Amplitude and Frequency Modulation—***Tamara Smyth*, University of California, San Diego, San Diego, CA, USA

*Convention Paper 10223*

### **Session P3 - POSTERS: TRANSDUCERS**

**Wednesday, Oct. 16, 10:30 am – 12:00 noon**

**South Concourse A**

**10:30 am**

**P3-1 Acoustic Beamforming on Transverse Loudspeaker Array Constructed from Micro-Speakers Point Sources for Effectiveness Improvement in High-Frequency Range—***Bartłomiej Chojnacki, Klara Juros, Daniel Kaczor, Tadeusz Kamisinski*, AGH University of Science and Technology, Cracow, Poland

*Convention Paper 10227*

**10:30 am**

**P3-2 Spherical Microphone Array Shape to Improve Beamforming Performance—***Sakurako Yazawa, Hiroaki Itou, Ken'ichi Noguchi, Kazunori Kobayashi, Noboru*

## **Paper Sessions**

*Harada*, NTT Media Intelligence Laboratories, NTT Corporation, Japan

*Convention Paper 10228*

**10:30 am**

**P3-3 Infinite Waveguide Termination by Series Solution in Finite Element Analysis**—*Patrick Macey*, PACSYS Limited, Nottingham, UK

*Convention Paper 10229*

**10:30 am**

**P3-4 Evaluating Listener Preference of Flat-Panel Loudspeakers**—*Stephen Roessner, Michael Heilemann, Mark F. Bocko*, University of Rochester, Rochester, NY, USA

*Convention Paper 10230*

**10:30 am**

**P3-5 Modelling of a Chip Scale Package on the Acoustic Behavior of a MEMS Microphone**—*Yafei Nie, Jinqiu Sang, Chengshi Zheng, Xiaodong Li*, Chinese Academy of Sciences, Beijing, China; University of Chinese Academy of Sciences, Beijing, China

*Convention Paper 10231*

**10:30 am**

**P3-6 Personalized and Self-Adapting Headphone Equalization Using Near Field Response**—*Adrian Celestinos, Elisabeth McMullin, Ritesh Banka, Pascal Brunet*, Samsung Research America, Digital Media Solutions, Valencia, CA USA

*Convention Paper 10232*

**10:30 am**

**P3-7 Applying Sound Equalization to Vibrating Sound Transducers Mounted on Rigid Panels**—*Stefania Cecchi*,<sup>1</sup> *Alessandro Terenzi*,<sup>1</sup> *Francesco Piazza*,<sup>1</sup> *Ferruccio Bettarelli*<sup>2</sup>

<sup>1</sup> Università Politecnica della Marche, Ancona, Italy

<sup>2</sup> Leaff Engineering, Osimo, Italy

*Convention Paper 10233*

### **Session P4 - ROOM ACOUSTICS**

**Wednesday, Oct. 16, 1:30 pm – 5:00 pm**

**Room 1E10**

Chair: **David Griesinger**, David Griesinger Acoustics, Cambridge, MA, USA

## **Paper Sessions**

**1:30 pm**

**P4-1 Use of Wavelet Transform for the Computation of Modal Decay Times in Rooms**—Roberto Magalotti,<sup>1</sup> Daniele Ponteggia<sup>2</sup>,

<sup>1</sup> B&C Speakers S.p.A., Bagno a Ripoli (FI), Italy

<sup>2</sup> Audiomatica Srl, Firenze, Italy

*Convention Paper 10235*

**2:00 pm**

**P4-2 What's Old Is New Again: Using a Physical Scale Model Echo Chamber as a Real-Time Reverberator**—Kevin Delcourt,<sup>1,2</sup> Franck Zagala,<sup>2</sup> Alan Blum,<sup>1</sup> Brian F. G. Katz<sup>2</sup>

<sup>1</sup> École Nationale Supérieure Louis Lumière,  
Saint-Denis, France

<sup>2</sup> Sorbonne Université, Paris, Paris, France

*Convention Paper 10236*

**2:30 pm**

**P4-3 Synthesis of Binaural Room Impulse Responses for Different Listening Positions Considering the Source Directivity**—Ulrike Sloma, Florian Klein, Stephan Werner, TTyson Pappachan Kannookadan, TU- Ilmenau, Ilmenau, Germany

*Convention Paper 10237*

**3:00 pm**

**P4-4 Extracting the Fundamental Mode from Sound Pressure Measurements in an Acoustic Tube**—Joerg Panzer, R&D Team, Salgen, Germany

*Convention Paper 10238*

**3:30 pm**

**P4-5 Accurate Reproduction of Binaural Recordings through Individual Headphone Equalization and Time Domain Crosstalk Cancellation**—David Griesinger, David Griesinger Acoustic, Cambridge, MA, USA

*Convention Paper 10239*

**4:00 pm**

**P4-6 Concert Hall Acoustics' Influence on the Tempo of Musical Performances**—Jan Berg, Luleå University of Technology, Piteå, Sweden

*Convention Paper 10240*

**4:30 pm**

**P4-7 Optimum Measurement Locations for Large-Scale Loud-**

## **Paper Sessions**

**speaker System Tuning Based on First-Order Reflections Analysis**—*Samuel Moulin, Etienne Corteel, François Montignies*, L-Acoustics, Marcoussis, France

*Convention Paper 10234*

### **Session P5 - SIGNAL PROCESSING—PART 2**

**Wednesday, Oct. 16, 1:30 pm – 5:00 pm**

**Room 1E11**

Chair: **Todd Welti**, Harman International Inc., Northridge, CA, USA

**1:30 pm**

**P5-1 Nonlinear Control of Loudspeaker Based on Output Flatness and Trajectory Planning**—*Pascal Brunet, Glenn S. Kubota*, Samsung Research America, Valencia, CA, USA

*Convention Paper 10241*

**2:00 pm**

**P5-2 Perceptual Assessment of Distortion in Low-Frequency Loudspeakers**—*Louis Fielder*,<sup>1</sup> Michael Smithers<sup>2</sup>

<sup>1</sup> Retired, Millbrae, CA, USA

<sup>2</sup> Dolby Laboratories, Sydney, NSW, Australia

*Convention Paper 10242*

**2:30 pm**

**P5-3 Rethinking Flat Panel Loudspeakers—An Objective Acoustic Comparison of Different Speaker Categories**—*Benjamin Zenker, Sebastian Merchel, M. Ercan Altinsoy*, TU Dresden, Dresden, Germany

*Convention Paper 10243*

**3:00 pm**

**P5-4 Modelling and Measurement of Nonlinear Intermodal Coupling in Loudspeaker Diaphragm Vibrations**—*William Cardenas*, ORA Graphine Audio Inc., Montreal, Quebec, Canada

*Convention Paper 10244*

**3:30 pm**

**P5-5 Sound Capture by Microphone Vibration inside Playback Devices**—*Rivanaldo De Oliveira*, Qualcomm Technologies, Inc., San Diego, CA, USA

*Convention Paper 10245*



## **Paper Sessions**

4:00 pm

- P5-6 Low Deviation and High Sensitivity—Optimized Exciter Positioning for Flat Panel Loudspeakers by Considering Averaged Sound Pressure Equalization**—*Benjamin Zenker, TShanavaz Sanjay Abdul Rawoof, Sebastian Merchel, M. Ercan Altinsoy*, TU Dresden, Dresden, Germany

*Convention Paper 10246*

4:30 pm

- P5-7 A Comparison of Test Methodologies to Personalize Headphone Sound Quality**—*Todd Welti, Omid Khonsaripour, Sean Olive, Dan Pye*, Harman International, Northridge, CA, USA

*Convention Paper 10247*

### **Session P6 - POSTERS: AUDIO SIGNAL PROCESSING**

**Thursday, Oct. 16, 3:00 pm – 4:30 pm**

**South Concourse A**

3:00 pm

- P6-1 Modal Representations for Audio Deep Learning**—*Travis Skare, Jonathan S. Abel, Julius O. Smith, III*, Stanford University, Stanford, CA, USA

*Convention Paper 10248*

3:00 pm

- P6-2 Distortion Modeling of Nonlinear Systems Using Ramped-Sines and Lookup Table**—*Paul Mayo*,<sup>1</sup> *Wesley Bulla*<sup>2</sup>

<sup>1</sup> University of Maryland, College Park, MD, USA

<sup>2</sup> Belmont University, Nashville, TN, USA

*Convention Paper 10249*

3:00 pm

- P6-3 An Open Audio Processing Platform Using SoC FPGAs and Model-Based Development**—*Trevor Vannoy*,<sup>1,2</sup> *Tyler Davis*,<sup>2</sup> *Connor Dack*,<sup>2</sup> *Dustin Sobrero*,<sup>2</sup> *Ross Snider*<sup>1,2</sup>

<sup>1</sup> Montana State University, Bozeman, MT, USA

<sup>2</sup> Flat Earth Inc., Bozeman, MT, USA

*Convention Paper 10250*

3:00 pm

- P6-4 Objective Measurement of Stereophonic Audio Quality in the Directional Loudness Domain**—*Pablo Delgado*,<sup>1</sup> *Jürgen Herre*<sup>1,2</sup>

## **Paper Sessions**

<sup>1</sup> International Audio Laboratories Erlangen,  
Erlangen, Germany

<sup>2</sup> Fraunhofer Institute for Integrated Circuits IIS,  
Erlangen, Germany

*Convention Paper 10251*

**3:00 pm**

**P6-5 Detection of the Effect of Window Duration in an Audio Source Separation Paradigm**—*Ryan Miller, Wesley Bulla, Eric Tarr*, Belmont University, Nashville, TN, USA

*Convention Paper 10252*

**3:00 pm**

**P6-6 Use of DNN-Based Beamforming Applied to Different Microphone Array Configurations**—*Tae Woo Kim, Nam Kyun Kim, Geon Woo Lee, Inyoung Park, Hong Kook Kim*, Gwangju Institute of Science and Tech (GIST), Gwangju, Korea

*Convention Paper 10253*

**3:00 pm**

**P6-7 Deep Neural Network Based Guided Speech Bandwidth Extension**—*Konstantin Schmidt*,<sup>1</sup> Bernd Edler<sup>1,2</sup>

<sup>1</sup> Friedrich-Alexander-University (FAU), Erlangen, Germany;

<sup>2</sup> Fraunhofer Institute for Integrated Circuits IIS, Erlangen, Germany

*Convention Paper 10254*

**3:00 pm**

**P6-8 Analysis of the Sound Emitted by Honey Bees in a Beehive**—*Stefania Cecchi, Alessandro Terenzi, Simone Orcioni, Francesco Piazza*, Università Politecnica della Marche, Ancona (AN), Italy

*Convention Paper 10255*

**3:00 pm**

**P6-9 Improvement of DNN-Based Speech Enhancement with Non-Normalized Features by Using an Automatic Gain Control**—*Linjuan Cheng, Chengshi Zheng, Renhua Peng, Xiaodong Li*, Key Laboratory of Noise and Vibration Research, Institute of Acoustics, Chinese Academy of Sciences, Beijing, China; University of Chinese Academy of Sciences, Beijing, China

*Convention Paper 10256*

## **Paper Sessions**

### **Session P7 - PERCEPTION**

**Thursday, Oct. 17, 9:00 am – 12:00 noon**

**Room 1E10**

Chair: **Elisabeth McMullin**, Samsung Research America,  
Valencia, CA, USA

**9:00 am**

**P7-1 A Binaural Model to Estimate Room Impulse Responses from Running Signals and Recordings**—*Jonas Braasch, David Dahlbom, Nate Keil*, Rensselaer Polytechnic Institute, Troy, NY, USA

*Convention Paper 10257*

**9:30 am**

**P7-2 Describing the Audible Effects of Nonlinear Loudspeaker Distortion**—*Elisabeth McMullin, Pascal Brunet, Zhongran Wang*, Samsung Research America, Valencia, CA, USA

*Convention Paper 10258*

**10:00 am**

**P7-3 Spatial Auditory Masking for Three-Dimensional Audio Coding**—*Masayuki Nishiguchi, Kodai Kato, Kanji Watanabe, Koji Abe, Shouichi Takane*, Akita Prefectural University, Yurihonjo, Akita, Japan

*Convention Paper 10259*

**10:30 am**

**P7-4 Investigation of Masking Thresholds for Spatially Distributed Sound Sources**—*Sascha Dick*,<sup>1</sup> *Rami Sweidan*,<sup>1,2</sup> *Jürgen Herre*<sup>1</sup>

<sup>1</sup> International Audio Laboratories Erlangen, a joint institution of Universität Erlangen-Nürnberg and Fraunhofer IIS, Erlangen, Germany

<sup>2</sup> University of Stuttgart, Stuttgart, Germany

*Convention Paper 10260*

**11:00 am**

**P7-5 An Attempt to Elicit Horizontal and Vertical Auditory Precedence Percepts without Pinnae Cues**—*Wesley Bulla*,<sup>1</sup> *Paul Mayo*<sup>2</sup>

<sup>1</sup> Belmont University, Nashville, TN, USA

<sup>2</sup> University of Maryland, College Park, MD, USA

*Convention Paper 10261*

## **Paper Sessions**

**11:30 am**

- P7-6 Perceptual Weighting to Improve Coding of Harmonic Signals**—*Elias Nemer, Zoran Fejzo, Jeff Thompson*, XPERI/DTS, Calabasas, CA, USA

*Convention Paper 10262*

**Session P8 - RECORDING, PRODUCTION, AND LIVE SOUND**

**Thursday, Oct. 17, 9:00 am – 11:30 am**

**Room 1E11**

Chair: **Wieslaw Woszczyk**, McGill University, Montreal, QC, Canada

**9:00 am**

- P8-1 Microphone Comparison: Spectral Feature Mapping for Snare Drum Recording**—*Matthew Cheshire, Ryan Stables, Jason Hockman*, Birmingham City University, Birmingham, UK

*Convention Paper 10263*

**9:30 am**

- P8-2 An Automated Approach to the Application of Reverberation**—*Dave Moffat, Mark Sandler*, Queen Mary University of London, London, UK

*Convention Paper 10264*

**10:00 am**

- P8-3 Subjective Graphical Representation of Microphone Arrays for Vertical Imaging and Three-Dimensional Capture of Acoustic Instruments, Part II**—*Bryan Martin, Denis Martin, Richard King, Wieslaw Woszczyk*, Montreal, QC, Canada; Centre for Interdisciplinary Research in Music Media and Technology (CIRMMT), Montreal, QC, Canada;

*Convention Paper 10265*

**10:30 am**

- P8-4 Filling The Space: The Impact of Convolution Reverberation Time on Note Duration and Velocity in Duet Performance**—*James Weaver*,<sup>1</sup> *Mathieu Barthes*,<sup>1</sup> *Elaine Chew*<sup>2</sup>

<sup>1</sup> Queen Mary University London, London, UK

<sup>2</sup> CNRS-UMR9912/STMS (IRCAM), Paris, France

*Convention Paper 10266*

**11:00 am**

- P8-5 The Effects of Spectators on the Speech Intelligibil-**

## **Paper Sessions**

### **ity Performance of Sound Systems in Stadia and Other Large Venues—Peter Mapp,<sup>1</sup> Ross Hammond<sup>2</sup>**

<sup>1</sup> Peter Mapp Associates - Colchester, Essex, UK;

<sup>2</sup> University of Derby, Derby, Derbyshire

*Convention Paper 10267*

### **Session P9 - POSTERS: APPLICATIONS IN AUDIO**

**Thursday, Oct. 17, 9:00 am – 10:30 am**

**South Concourse A**

**9:00 am**

**P9-1 Analyzing Loudness Aspects of 4.2 Million Musical Albums in Search of an Optimal Loudness Target for Music Streaming—Eelco Grimm, HKU University of the Arts, Utrecht, Netherlands**

*Convention Paper 10268*

**9:00 am**

**P9-2 Audio Data Augmentation for Road Objects Classification—Ohad Barak, Nizar Sallem, Mentor Graphics, Mountain View, CA, USA**

*Convention Paper 10269*

**9:00 am**

**P9-3 Is Binaural Spatialization the Future of Hip-Hop?—Kierian Turner,<sup>1</sup> Amandine Pras<sup>1,2</sup>**

<sup>1</sup> University of Lethbridge, Lethbridge, AB, Canada

<sup>2</sup> School for Advanced Studies in the Social Sciences (EHSS), Paris, France

*Convention Paper 10270*

**9:00 am**

**P9-4 Alignment and Timeline Construction for Incomplete Analogue Audience Recordings of Historical Live Music Concerts—Thomas Wilmering, Florian Thalmann, Mark Sandler, Queen Mary University of London, London, UK**

*Convention Paper 10271*

**9:00 am**

**P9-5 Noise Robustness Automatic Speech Recognition with Convolutional Neural Network and Time Delay Neural Network—Jie Wang,<sup>1</sup> Dunze Wang,<sup>1</sup> Yunda Chen,<sup>1</sup> Xun Lu,<sup>2</sup> Chengshi Zheng<sup>3</sup>,**

<sup>1</sup> Guangzhou University, Guangzhou, China

<sup>2</sup> Power Grid Planning Center, Guangdong Power Grid Company, Guangdong, China

## **Paper Sessions**

<sup>3</sup> Institute of Acoustics, Chinese Academy of Sciences,  
Beijing, China

*Convention Paper 10272*

### **Session P10 - SPATIAL AUDIO, PART 1**

**Thursday, Oct. 17, 1:15 pm – 4:15 pm**

**Room 1E10**

Chair: **Sungyoung Kim**, Rochester Institute of Technology,  
Rochester, NY, USA

**1:15 pm**

**P10-1 Use of the Magnitude Estimation Technique in Reference-Free Assessments of Spatial Audio Technology**—*Alex Brandmeyer, Dan Darcy, Lie Lu, Richard Graff, Nathan Swedlow, Poppy Crum*, Dolby Laboratories, San Francisco, CA, USA

*Convention Paper 10273*

**1:45 pm**

**P10-2 Subjective Assessment of the Versatility of Three-Dimensional Near-Field Microphone Arrays for Vertical and Three-Dimensional Imaging**—*Bryan Martin*,<sup>1,2</sup>  
*Jack Kelly*,<sup>1,2</sup> *Brett Leonard*<sup>3,4</sup>

<sup>1</sup> McGill University, Montreal, QC, Canada

<sup>2</sup> Centre for Interdisciplinary Research in Music Media and Technology (CIRMMT), Montreal, QC, Canada

<sup>3</sup> University of Indianapolis, Indianapolis, IN, USA

<sup>4</sup> BLPaudio, Indianapolis, IN, USA

*Convention Paper 10274*

**2:15 pm**

**P10-3 Defining Immersion: Literature Review and Implications for Research on Immersive Audiovisual Experiences**—*Sarvesh Agrawal*,<sup>1,2</sup> *Adèle Simon*,<sup>1</sup> *Søren Bech*,<sup>1,3</sup> *Klaus Børntsen*,<sup>4</sup> *Søren Forchhammer*<sup>2</sup>

<sup>1</sup> Bang & Olufsen a/s, Struer, Denmark

<sup>2</sup> Technical University of Denmark, Lyngby, Denmark

<sup>3</sup> Aalborg University, Aalborg, Denmark

<sup>4</sup> Aarhus University, Aarhus, Denmark

*Convention Paper 10275*

**2:45 pm**

**P10-4 Evaluation on the Perceptual Influence of Floor Level Loudspeakers for Immersive Audio Reproduction**—*Yannik Grewe, Andreas Walther, Julian Klapp*, Fraunhofer Institute for Integrated Circuits IIS, Erlangen, Germany

*Convention Paper 10276*

## **Paper Sessions**

**3:15 pm**

- P10-5 Investigating Room-Induced Influences on Immersive Experience Part II: Effects Associated with Listener Groups and Musical Excerpts—Sungyoung Kim,<sup>1</sup> Shuichi Sakamoto<sup>2</sup>**

<sup>1</sup> Rochester Institute of Technology, Rochester, NY, USA

<sup>2</sup> Tohoku University, Sendai, Japan

*Convention Paper 10277*

**3:45 pm**

- P10-6 Comparison Study of Listeners' Perception of 5.1 and Dolby Atmos—Tomas Oramus, Petr Neubauer, Academy of Performing Arts in Prague, Prague, Czech Republic**

*Convention Paper 10278*

### **Session P11 - SEMANTIC AUDIO**

**Thursday, Oct. 17, 1:15 pm – 2:45 pm**

**Room 1E11**

Chair: **Robert C. Maher**, Montana State University, Bozeman, MT, USA

**1:15 pm**

- P11-1 Impact of Statistical Parameters of Late Reverberation on the Instantaneous Frequencies of Reverberant Audio—Sarah R. Smith, Mark F. Bocko, University of Rochester, Rochester, NY, USA**

*Convention Paper 10279*

**1:45 pm**

- P11-2 Precise Temporal Localization of Sudden Onsets in Audio Signals Using the Wavelet Approach—Yuxuan Wan, Yijia Chen, Keegan Yi Hang Sim, Lijia Wu, Xianzheng Geng, Kevin Chau, Hong Kong University of Science and Technology, Clean Water Bay, Hong Kong**

*Convention Paper 10280*

**2:15 pm**

- P11-3 Forensic Comparison of Simultaneous Recordings of Gunshots at a Crime Scene—Robert C. Maher, Ethan Hoerr, Montana State University, Bozeman, MT, USA**

*Convention Paper 10281*

## **Paper Sessions**

### **Session P12 - POSTERS: ROOM ACOUSTICS**

**Thursday, October 17, 3:00 pm – 4:30 pm**

**South Concourse A**

**3:00 pm**

**P12-1 Transparent Office Screens Based on Microperforated Foil**—*Krzysztof Brawata*,<sup>1</sup> *Katarzyna Baruch*,<sup>1</sup> *Tadeusz Kamisinski*,<sup>2</sup> *Bartłomiej Chojnacki*<sup>2</sup>

<sup>1</sup> Gorycki&Szynterman Sp. z o.o., Cracow, Poland

<sup>2</sup> AGH University of Science and Technology, Cracow, Poland

*Convention Paper 10282*

**3:00 pm**

**P12-2 A Novel Spatial Impulse Response Capture Technique for Realistic Artificial Reverberation in the 22.2 Multichannel Audio Format**—*Jack Kelly*, *Richard King*, *Wiesław Woszczyk*, McGill University, Montreal, QC, Canada, The Centre for Interdisciplinary Research in Music Media and Technology, Montreal, Quebec, Canada

*Convention Paper 10283*

**3:00 pm**

**P12-3 Impulse Response Simulation of a Small Room and in situ Measurements Validation**—*Daniel Núñez-Solano*, *Virginia Puyana-Romero*, *Cristian Ordóñez-Andrade*, *Luis Bravo-Moncaño*, *Christiam Garzón-Pico*, Universidad de Las Américas, Quito, Ecuador

*Convention Paper 10284*

**3:00 pm**

**P12-4 Calculation of Directivity Patterns from Spherical Microphone Array Recordings**—*Carlotta Anemüller*, *Jürgen Herre*, International Audio Laboratories Erlangen, Erlangen, Germany

*Convention Paper 10285*

### **Session P13 - SPATIAL AUDIO, PART 2**

**Friday, Oct. 18, 9:00 am – 11:00 pm**

**Room 1E10**

Chair: **Doyuen Ko**, Belmont University, Nashville, TN, USA

**9:00 am**

**P13-1 Simplified Source Directivity Rendering in Acoustic Virtual Reality Using the Directivity Sample Combination**—*Georg Götz*, *Ville Pulkki*, Aalto University, Espoo, Finland



## **Paper Sessions**

*Convention Paper 10286*

**9:30 am**

- P13-2 Classification of HRTFs Using Perceptually Meaningful Frequency Arrays**—*Nolan Eley*, New York University, New York, NY, USA

*Convention Paper 10288*

**10:00 am**

- P13-3 An HRTF Based Approach towards Binaural Sound Source Localization**—*Kaushik Sunder*,<sup>1</sup> *Yuxiang Wang*<sup>2</sup>  
<sup>1</sup> Embody VR, Mountain View, CA, USA  
<sup>2</sup> Rochester Institute of Technology, Rochester, NY, USA

*Convention Paper 10289*

**10:30 am**

- P13-4 Physical Controllers vs. Hand-and-Gesture Tracking: Control Scheme Evaluation for VR Audio Mixing**—*Justin Bennington*, *Doyuen Ko*, Belmont University, Nashville, TN, USA

*Convention Paper 10290*

### **Session P14 - SPATIAL AUDIO, PART 3**

**Friday, Oct. 18, 1:45 pm – 4:15 pm**

**Room 1E10**

Chair: **Christof Faller**, Illusonic GmbH, Uster, Zürich, Switzerland; EPFL, Lausanne, Switzerland

**1:45 pm**

- P14-1 Measurement of Oral-Binaural Room Impulse Response by Singing Scales**—*Munhum Park*, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand

*Convention Paper 10291*

**2:15 pm**

- P14-2 Effects of Capsule Coincidence in FOA Using MEMS: Objective Experiment**—*Gabriel Zalles*, University of California, San Diego, La Jolla, CA, USA

*Convention Paper 10292*

**2:45 pm**

- P14-3 Spatial B-Format Equalization**—*Alexis Favrot*, *Christof Faller*, Illusonic GmbH, Uster, Zürich, Switzerland

*Convention Paper 10293*

## **Paper Sessions**

3:15 pm

- P14-4 Exploratory Research into the Suitability of Various 3D Input Devices for an Immersive Mixing Task**—*Diego I Quiroz Orozco, Denis Martin*, McGill University, Montreal, QC, Canada; Centre for Interdisciplinary Research in Music Media and Technoogy (CIRMMT), Montreal, QC, Canada

*Convention Paper 10294*

3:45 pm

- P14-5 The 3DCC Microphone Technique: A Native B-format Approach to Recording Musical Performance**—*Kathleen “Ying-Ying” Zhang, Paul Geluso*, New York University, New York, NY, USA

*Convention Paper 10295*

### **Session P15 - AUDIO EDUCATION**

**Saturday, Oct. 19, 9:00 am – 11:30 am**

**Room 1E10**

Chair: **Amandine Pras**, Digital Audio Arts, University of Lethbridge, Lethbridge, Alberta, Canada; School for Advanced Studies in the Social Sciences, Paris, France

9:00 am

- P15-1 Production Processes of Pop Music Arrangers in Bamako, Mali**—*Amandine Pras*,<sup>1,2</sup> *Kierian Turner*,<sup>1</sup> *Toby Bol*,<sup>1</sup> *Emmanuelle Olivier*<sup>2,3</sup>

<sup>1</sup> Digital Audio Arts, University of Lethbridge, Lethbridge, Alberta, Canada

<sup>2</sup> School for Advanced Studies in the Social Sciences, Paris, France

<sup>3</sup> National Centre for Scientific Research, Paris, France

*Convention Paper 10296*

9:30 am

- P15-2 Towards a Pedagogy of Multitrack Audio Resources for Sound Recording Education**—*Kirk McNally*,<sup>1</sup> *Paul Thompson*,<sup>2</sup> *Ken Scott*<sup>2</sup>

<sup>1</sup> University of Victoria, Victoria, BC, Canada

<sup>2</sup> Leeds Beckett University, Leeds, West Yorkshire, UK

*Convention Paper 10297*

10:00 am

- P15-3 The History of Record Production as a Learning Element for Audio Education—The Particular Case of the Recording Arts Program at the ITM in Medellín Colombia**—*Daniel Marin Jaramillo*,<sup>1</sup> *Carlos Andrés Caballero Parra*<sup>1,2</sup>

## **Paper Sessions**

<sup>1</sup> Instituto Tecnológico Metropolitano, Medellín, Colombia

<sup>2</sup> Universidad Politécnica de Valencia, Valencia, Spain

*Convention Paper 10298*

**10:30 am**

- P15-4 Mental Representations in Critical Listening Education: A Preliminary Study**—*Stephane Elmosnino*, University of Technology Sydney, Sydney, New South Wales, Australia

*Convention Paper 10299*

**11:00 am**

- P15-5 The Generation Gap—Perception and Workflow of Analog vs. Digital Mixing**—*Ryland Chambers-Moranz*,<sup>1</sup>  
*Amandine Pras*,<sup>1,2</sup> *Nate Thomas*<sup>1</sup>

<sup>1</sup> Digital Audio Arts, University of Lethbridge, Lethbridge, Alberta, Canada

<sup>2</sup> School for Advanced Studies in the Social Sciences, Paris, France

*Convention Paper 10300*

### **Session P16 - POSTERS: SPATIAL AUDIO**

**Saturday, Oct. 19, 10:30 am – 12:00 noon**

**South Concourse A**

**10:30 am**

- P16-1 Calibration Approaches for Higher Order Ambisonic Microphone Arrays**—*Charles Middlicott*,<sup>1,2</sup> *Bruce Wiggins*<sup>1</sup>

<sup>1</sup> University of Derby, Derby, Derbyshire, UK

<sup>2</sup> Sky Labs Brentwood, Essex, UK

*Convention Paper 10301*

**10:30 am**

- P16-2 A Qualitative Investigation of Soundbar Theory**—  
*Julia Perla*, *Wesley Bulla*, Belmont University, Nashville, TN, USA

*Convention Paper 10302*

**10:30 am**

- P16-3 The Effect of the Grid Resolution of Binaural Room Acoustic Auralization on Spatial and Timbral Fidelity**—  
*Dale Johnson*, *Hyunkook Lee*, University of Huddersfield, Huddersfield, UK

*Convention Paper 10303*

**10:30 am**

- P16-4 A Compact Loudspeaker Matrix System to Create 3D**

## **Paper Sessions**

**Sounds for Personal Uses**—*Aya Saito, Takahiro Nemoto, Akira Saji, Jie Huang*, University of Aizu, Aizuwakamatsu City, Japan

*Convention Paper 10304*

**10:30 am**

**P16-5 Evaluation of Spatial Audio Quality of the Synthesis of Binaural Room Impulse Responses for New Object Positions**—*Stephan Werner, Florian Klein, Clemens Müller*, Technical University of Ilmenau, Ilmenau, Germany

*Convention Paper 10305*

**10:30 am**

**P16-6 Investigating the Importance of Height Channels of Cinema Surround Systems**—*Ahmed Shalabi*, Overdub Productions, London, UK

*Convention Paper 10306*

**10:30 am**

**P16-7 An Adaptive Crosstalk Cancellation System Using Microphones at the Ears**—*Tobias Kabzinski, Peter Jax*, RWTH Aachen University, Aachen, Germany

*Convention Paper 10307*

**10:30 am**

**P16-8 Immersive Sound Reproduction in Real Environments Using a Linear Loudspeaker Array**—*Valeria Bruschi, Nicola Ortolani, Stefania Cecchi, Francesco Piazza*, Università Politecnica della Marche, Ancona (AN), Italy

*Convention Paper 10308*

**10:30 am**

**P16-9 The Influences of Microphone System, Video, and Listening Position on the Perceived Quality of Surround Recording for Sport Content**—*Aimee Moulson, Hyunkook Lee*, University of Huddersfield, Huddersfield, UK

*Convention Paper 10309*

**10:30 am**

**P16-10 Sound Design and Reproduction Techniques for Co-Located Narrative VR Experiences**—*Marta Gospodarek, Andrea Genovese, Dennis Dembeck, Corinne Brenner, Agnieszka Roginska, Ken Perlin*, New York University, New York, NY, USA

*Convention Paper 10287*

## **Product Development**

### **Session P17 - PRODUCT DEVELOPMENT**

**Saturday, Oct. 19, 3:00 pm – 5:30 pm**

**Room 1E09**

Chair: **Phil Brown**, Dolby Laboratories, San Francisco, CA, USA

**3:00 pm**

**P17-1 Summed Efficiency-Method for Efficient Vented Box Speaker Design**—*Niels Elkjær Iversen*,<sup>1,2</sup> *Theis Christensen*,<sup>2</sup> *Anders Bjørnskov*,<sup>2</sup> *Lars Petersen*<sup>2</sup>

<sup>1</sup> Technical University of Denmark, Kogens Lyngby, Denmark

<sup>2</sup> ICEpower, Søborg, Denmark

*Convention Paper 10310*

**3:30 pm**

**P17-2 Loudspeaker Port Design for Optimal Performance and Listening Experience**—*Andri Bezzola*, *Allan Devantier*, *Elisabeth McMullin*, Samsung Research America, Valencia, CA USA

*Convention Paper 10311*

**4:00 pm**

**P17-3 A Method for Three-Dimensional Horn Geometry Optimization**—*Christoper Smolen*, *Jerome Halley*, QSC Audio Products LLC, Costa Mesa, CA, USA

*Convention Paper 10312*

**4:30 pm**

**P17-4 A Perceptually-Motivated Headphone Transparency Algorithm**—*Josh Lando*, *Alex Brandmeyer*, *Phil Brown*, *Alan Seefeldt*, *Andy Jaspar*, Dolby Laboratories, San Francisco, CA, USA

*Convention Paper 10313*

**5:00 pm**

**P17-5 Temporal Envelope-Based Psychoacoustic Modelling for Evaluating Non-Waveform Preserving Audio Codecs**—

*Steven van de Par*,<sup>1,2</sup> *Sascha Disch*,<sup>3,4</sup> *Andreas Niedermeier*,<sup>3</sup> *Elena Burdiel Pérez*,<sup>3</sup> *Bernd Edler*<sup>4</sup>

<sup>1</sup> University of Oldenburg, Oldenburg, Germany

<sup>2</sup> Fraunhofer HSA, Oldenburg, Germany

<sup>3</sup> Fraunhofer IIS, Erlangen, Germany

<sup>4</sup> Friedrich Alexander University, Erlangen-Nürnberg, Germany

*Convention Paper 10314*

## **Paper Sessions**

### **Session P18 - POSTERS: PERCEPTION**

**Saturday, Oct. 19, 3:00 pm – 4:30 pm**

**South Concourse A**

**3:00 pm**

- P18-1 Comparison of Human and Machine Recognition of Electric Guitar Types**—*Renato Profeta, Gerald Schuller*, Ilmenau University of Technology, Ilmenau, Germany

*Convention Paper 10315*

**3:00 pm**

- P18-2 Preference for Harmonic Intervals Based on Overtone Content of Complex Tones**—*Benjamin Fox, Wesley Bulla*, Belmont University, Nashville, TN, USA

*Convention Paper 10316*

**3:00 pm**

- P18-3 Just Noticeable Difference for Dynamic Range Compression via “Limiting” of a Stereophonic Mix**—*Christopher Hickman, Wesley Bulla*, Belmont University, Nashville, TN, USA

*Convention Paper 10317*

**3:00 pm**

- P18-4 Discrimination of High-Resolution Audio without Music**—*Yuki Fukuda, Shunsuke Ishimitsu*, Hiroshima City University, Hiroshima, Japan

*Convention Paper 10318*

**3:00 pm**

- P18-5 Subjective Evaluation of Multichannel Audio and Stereo on Cell Phones**—*Fesal Toosy, Muhammad Sarwar Ehsan*, University of Central Punjab, Lahore, Pakistan

*Convention Paper 10319*

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## **PRODUCT DEVELOPMENT**

<b>PD-01</b>	<b>The Predictable Horn</b>	Wednesday, Oct. 16 9:00 am –10:30 am Room 1E09
<b>PD-02</b>	<b>Directivity Optimization Passive Loudspeaker System</b>	Wednesday, Oct. 16 10:30 am –12:00 noon Room 1E09

## **Product Development**

<b>PD-03</b>	<b>Patents and Product Development</b>	Wednesday, Oct. 16 2:45 pm – 4:15 pm Room 1E09
<b>PD-04</b>	<b>Microphone Electroacoustics</b>	Wednesday, Oct. 16 4:30 pm – 5:45 pm Room 1E09
<b>PD-05</b>	<b>Vendor Event 1: Audio Precision</b>	Wednesday, Oct. 16 5:30 pm – 6:00 pm Demo Room 1E01
<b>PD-06</b>	<b>Can DSP Fix a Bad Speaker?</b>	Thursday, Oct. 17 9:00 am – 10:30 am Room 1E09
<b>PD-07</b>	<b>Introducing A2B</b>	Thursday, Oct. 17 10:45 am – 12:15 pm Room 1E09
<b>PD-08</b>	<b>Vendor Event 2: Analog Devices</b>	Thursday, Oct. 17 12:15 pm – 1:30 pm Demo Room 2D03
<b>PD-09</b>	<b>Does Automotive Audio Need a Systems Approach?</b>	Thursday, Oct. 17 1:30 pm – 3:00 pm Room 1E09
<b>PD-10</b>	<b>Diagnostics for Production Vehicle Audio Systems</b>	Thursday, Oct. 17 3:15 pm – 4:30 pm Room 1E09
<b>PD-11</b>	<b>Product Management Modeling</b>	Friday, Oct. 18 9:00 am – 10:30 am Room 1E09
<b>PD-12</b>	<b>Advanced Materials for Audio Products</b>	Friday, Oct. 18 10:45 am – 12:15 pm Room 1E09
<b>PD-13</b>	<b>Vendor Event 3: Menlo Scientific</b>	Friday, Oct. 18 12:15 pm – 1:30 pm Demo Room 457
<b>PD-14</b>	<b>Deep Learning and AI for Audio Applications</b>	Friday, Oct. 18 1:30 pm – 3:00 pm Room 1E09
<b>PD-15</b>	<b>Hardware Development Using JIRA</b>	Friday, Oct. 18 3:15 pm – 4:45 pm Room 1E09
<b>PD-16</b>	<b>How to Add AES70 to Your Products</b>	Saturday, Oct. 19 9:00 am – 10:30 am Room 1E09
<b>PD-17</b>	<b>Using Gage R&amp;R Tools</b>	Saturday, Oct. 19 10:45 am – 12:15 pm Room 1E09
<b>PD-18</b>	<b>Acoustic Metamaterial in LS Systems</b>	Saturday, Oct. 19 1:30 pm – 3:00 pm Room 1E09

## **Product Development**

### **PD01 - THE PREDICTABLE HORN: THE WHY, HOW, AND WHEN OF HORN SIMULATION**

**Wednesday, October 16, 9:00 am – 10:30 am**

**Room 1E09**

Presenters: **Mark Dodd**, Celestion, Woodbridge, Suffolk, UK  
**Charles Hughes**, Excelsior Audio, Gastonia, NC, USA;  
AFMG - Berlin, Germany  
**Bjørn Kolbrek**, Celestion, Ipswich, UK  
**David Murphy**, Krix Loudspeakers, Henley Beach,  
South Australia, Australia

### **PD02 - DIRECTIVITY OPTIMIZATION OF A PASSIVE LOUDSPEAKER SYSTEM**

**Wednesday, October 16, 10:30 am – 12:00 noon**

**Room 1E09**

Presenter: **Charles Hughes**, Excelsior Audio, Gastonia, NC, USA;  
AFMG, Berlin, Germany

### **PD03 - PATENTS AND PRODUCT DEVELOPMENT**

**Wednesday, October 16, 2:45 pm – 4:15 pm**

**Room 1E09**

Presenters: **Joseph Reid**, Perkins Coie, San Diego, CA, USA  
**John Strawn**, S Systems, Inc., Larkspur, CA, USA  
**Babak Tehranchi**, Perkins Coie, San Diego, CA, USA

### **PD04 - MICROPHONE ELECTROACOUSTICS**

**Wednesday, October 16, 4:30 pm – 5:45 pm**

**Room 1E09**

Presenter: **Christopher Struck**, CJS Labs, San Francisco, CA, USA

### **PD05 - VENDOR EVENT 1: AUDIO PRECISION**

**Wednesday, October 16, 5:30 pm – 6:00 pm**

**Demo Room 1E01**

### **PD06 - CAN DSP FIX A BAD SPEAKER?**

**Thursday, October 17, 9:00 am – 10:30 am**

**Room 1E09**

Presenters: **Jonathan Gerbet**, Klippel GmbH, Dresden, Germany

### **PD07 - INTRODUCING A2B—A LOW-LATENCY DIGITAL AUDIO BUS STANDARD**

**Thursday, October 17, 10:45 am – 12:15 pm**

**Room 1E09**

Presenters: **Joseph Beauchemin**, Analog Devices  
**Denis Labrecque**, DeLab Consulting, Half Moon Bay,  
CA, USA



## **Product Development**

### **PD08 - VENDOR EVENT 2: ANALOG DEVICES**

**Thursday, October 17, 12:15 pm – 1:30 pm**

**Demo Room 2D03**

### **PD09 - DOES AUTOMOTIVE AUDIO NEED A SYSTEMS APPROACH?**

**Thursday, October 17, 1:30 pm — 3:00 pm**

**Room 1E09**

Presenters: **John Busenitz**, Bose Corporation, Framingham, MA, USA

**Patrick Dennis**, Nissan Technical Center North America, Farmington Hills, MI, USA

*This session is presented in association with the AES Technical Committee on Automotive Audio*

### **PD10 - DIAGNOSTICS FOR PRODUCTION VEHICLE AUDIO SYSTEMS**

**Thursday, October 17, 3:15 pm – 4:30 pm**

**Room 1E09**

Presenter: **Steven Hutt**, Equity Sound Investments, Bloomington, IN, USA

*This session is presented in association with the AES Technical Committee on Loudspeakers and Headphones*

### **PD11 - Product Management Modeling**

**Friday, October 18, 9:00 am – 10:30 am**

**Room 1E09**

Presenter: **Scott Leslie**, PD Squared, Irvine, CA USA

### **PD12 - ADVANCED MATERIALS FOR AUDIO PRODUCTS**

**Friday, October 18, 10:45 am – 12:15 pm**

**Room 1E09**

Presenter: **Michael Klasco**, Menlo Scientific Ltd., Richmond, CA, USA

### **PD13 - VENDOR EVENT 3: MENLO SCIENTIFIC**

**Friday, October 18, 12:15 pm – 1:30 pm**

**Demo Room 457**

### **PD14 - DEEP LEARNING AND AI FOR AUDIO APPLICATIONS—ENGINEERING BEST PRACTICES FOR DATA**

**Friday, October 18, 1:30 pm – 3:00 pm**

**Room 1E09**

Presenter: **Gabriele Bunkheila**, MathWorks, Madrid, Spain

## **Product Development**

### **PD15 - HARDWARE DEVELOPMENT USING JIRA**

**Friday, October 18, 3:15 pm – 4:45 pm**

**Room 1E09**

Presenter: **Remi Vaucher**, QSC, Costa Mesa, CA, USA

### **PD16 - HOW TO ADD AES70 CONTROL TO YOUR PRODUCTS**

**Saturday, October 19, 9:00 am – 10:30 am**

**Room 1E09**

Presenters: **Jeff Berryman**, OCA Alliance

**Simon Jones**, Focusrite

**Ethan Wetzell**, OCA Alliance

### **PD17 - USING GAGE R&R TOOLS TO VALIDATE AND CHARACTERIZE ACOUSTIC MEASUREMENT SYSTEMS**

**Saturday, October 19, 10:45 am – 12:15 pm**

**Room 1E09**

Presenter: **Emily Wigley**, Acoustical Engineer, Shure Inc.,  
Chicago, IL, USA

### **PD18 - ACOUSTIC METAMATERIAL IN LOUDSPEAKER SYSTEMS DESIGN**

**Saturday, October 19, 1:30 pm – 3:00 pm**

**Room 1E09**

Presenters: **Letizia Chisari**, Contralto Audio srl, Casoli, Ital  
**Mario Di Cola**, Contralto Audio srl, Casoli, Italy  
**Paolo Martignon**, Contralto Audio srl, Casoli, Italy

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## **RECORDING AND PRODUCTION**

<b>RP-01</b>	<b>Miniature Microphones</b>	Wednesday, Oct. 16 9:15 am – 10:45 am Room 1E21
<b>RP-02</b>	<b>Evolution of Album Production</b>	Wednesday, Oct. 16 11:00 pm – 12:00 noon Room 1E21
<b>RP-03</b>	<b>So Unforgettable—2 Iconic Albums</b>	Wednesday, Oct. 16 1:30 pm – 3:00 pm Room 1E21
<b>RP-04</b>	<b>Spatial Audio Microphones</b>	Wednesday, Oct. 16 3:15 pm – 4:45m Room 1E21

## **Recording & Production**

<b>RP-05</b>	<b>3D Microphone Technique Shootout—9.1 Demo</b>	Wednesday, Oct. 16 4:30 pm – 6:00 pm Room 1E06
<b>RP-06</b>	<b>Immersive Music Listening Session</b>	Thursday, Oct. 17 10:30 am – 12:00 noon Room 1E06
<b>RP-07</b>	<b>Podcast Production</b>	Thursday, Oct. 17 10:45 am – 11:45 am Room 1E12
<b>RP-08</b>	<b>Changing Roles in the Audio Industry</b>	Thursday, Oct. 18 11:15 am – 12:15 pm Room 1E21
<b>RP-09</b>	<b>The Doppler Gang</b>	Thursday, Oct. 17 1:30 pm – 2:30 pm Room 1E21
<b>RP-10</b>	<b>Tuning the Vocal—Watch, Listen, and Learn</b>	Thursday, Oct. 17 2:45 pm – 3:45 pm Room 1E21
<b>RP-11</b>	<b>Pitch Shift FXpertise</b>	Thursday, Oct. 17 4:00 pm – 5:30 pm Room 1E21
<b>RP-12</b>	<b>Recording/Realizing Immersive Classical Music</b>	Friday, Oct. 18 9:00 am – 10:30 am Room 1E17
<b>RP-13</b>	<b>Mastering Immersive Audio</b>	Friday, Oct. 18 10:15 am – 11:15 am Room 1E08
<b>RP-14</b>	<b>For the Record: Engineering Prince</b>	Friday, Oct. 18 11:00 am – 12:00 noon Room 1E21
<b>RP-15</b>	<b>Studio Design for 2070</b>	Friday, Oct. 18 1:00 pm – 2:00 pm Room 1E08
<b>RP-16</b>	<b>Hybrid Audio</b>	Friday, Oct. 18 1:30 pm – 2:30 pm Room 1E11
<b>RP-17</b>	<b>Platinum Latin Engineers (An AES Special Event)</b>	Friday, Oct. 18 2:45 pm – 4:15 pm Room 1E15+16
<b>RP-18</b>	<b>Color in Mastering</b>	Friday, Oct. 18 4:30 pm – 5:30 pm Room 1E10
<b>RP-19</b>	<b>Sound on Wheels</b>	Friday, Oct. 19 4:45 pm – 5:45 pm Room 1E09
<b>RP-20</b>	<b>Live Concert Sound</b>	Saturday, Oct. 19 11:15 am – 12:15 pm Room 1E21

## **Recording & Production**

### **RP01 - MINIATURE MICROPHONES— WHY ARE THEY SO ATTRACTIVE?**

**Wednesday, October 16, 9:15 am – 10:45 am**

**Room 1E21**

Chair: **Eddy Bøgh Brixen**, EBB-consult, Smørum, Denmark;  
DPA Microphones, Allerød, Denmark

Panelists: *Antoin Cox*, Production Sound Mixer  
*Mark Gilbert*, Shure, Niles, IL, USA  
*Nanna-Karina Schleimann*, Danish National School  
of Performing Arts, Copenhagen, Denmark

*This session is presented in association with the AES Technical Committee on Microphones and Applications*

### **RP02 - EVOLUTION OF ALBUM PRODUCTION FROM START TO FINISH**

**Wednesday, October 16, 11:00 am – 12:00 noon**

**Room 1E21**

Moderator: **Terri Winston**, Women's Audio Mission,  
San Francisco, CA, USA

Panelists: *Rachel Alina*, P!nk, Selena Gomez  
*Gloria Kaba*, Little Underground  
*Heba Kadry*, Timeless Mastering, Brooklyn, NY, USA  
*Simone Torres*, Vocal Producer and Multi-Platinum  
engineer (Sia, Dua Lipa, Usher)

*This session is presented in association with the AES Technical Committee on Recording Technology and Practices*

### **RP03 - SO UNFORGETTABLE—2 ICONIC ALBUMS FROM 2 NON-STUDIO SPACES**

**Wednesday, October 16, 1:30 pm – 3:00 pm**

**Room 1E21**

Moderator: **Alex Case**, University of Massachusetts Lowell,  
Lowell, MA, USA

Presenter: *Kevin Killen*, New York, NY, USA

### **RP04 - SPATIAL AUDIO MICROPHONES**

**Wednesday, October 16, 3:15 pm – 4:45 pm**

**Room 1E21**

Presenters: **Gary Elko**, mh acoustics, Summit, NJ USA  
**Brian Glasscock**, Sennheiser  
**Len Moskowitz**, Core Sound LLC, Teaneck, NJ, USA

## **Recording & Production**

**Helmut Wittek**, SCHOEPS Mikrofone GmbH,  
Karlsruhe, Germany

**Tomasz Zernicki**, Zylia sp. z o.o., Poznan, Poland

*This session is presented in association with the AES Technical Committee on Microphones and Applications*

### **RP05 - 3D MICROPHONE TECHNIQUE SHOOTOUT— 9.1 DEMO AND DISCUSSION**

**Wednesday, October 16, 4:30 pm – 6:00 pm**

**Room 1E06**

Presenter: **Hyunkook Lee**, University of Huddersfield,  
Huddersfield, UK

### **RP06 - IMMERSIVE MUSIC LISTENING SESSION: CRITICAL LISTENING AND RECORDING TECHNIQUES**

**Thursday, October 17, 10:30 am – 12:00 noon**

**Room 1E06**

Presenters: **David Bowles**, Swineshead Productions LLC,  
Berkeley, CA, USA  
**Paul Geluso**, New York University, New York, NY, USA

### **RP07 - PODCAST PRODUCTION**

**Thursday, October 17, 10:45 am – 11:45 am**

**Room 1E12**

Moderator: **Elena Botkin-Levy**

Panelists: *Chiquita Paschal*, Uncivil, Another Round  
*Haley Shaw*, Gimlet Media, Brooklyn, NY, USA  
*Jenna Weiss-Berman*, Pineapple Media

*This session is presented in association with the AES Technical Committee on Recording Technology and Practices*

### **RP08 - CHANGING ROLES IN THE AUDIO INDUSTRY**

**Thursday, October 17, 11:15 am - 12:15 pm**

**Room 1E21**

Moderator: **Paul “Willie Green” Womack**, Willie Green Music,  
Brooklyn, NY, USA

Panelists: *Ariel Borujow*, Westward Music Group Inc.  
*Ricardo Gutierrez*, Drake/Mariah Carey/The Rolling  
Stones  
*Ken “Duro” Ifill*, Jay-Z & Alicia Keys/Erykah Badu/Will  
Smith

## **Recording & Production**

### **RP09 - THE DOPPLER GANG—A PANEL OF PROS DISCUSS THE PROS AND CONS OF PITCH CHANGE**

**Thursday, October 17, 1:30 pm – 2:30 pm**

**Room 1E21**

Moderators: **Anthony Agnello**, Eventide Inc., Little Ferry, NJ, USA  
**Richard Factor**, Eventide Inc., Little Ferry, NJ, USA

Panelists: *Alex Case*, University of Massachusetts Lowell,  
Lowell, MA, USA  
*Bob Clearmountain*, Mix This!, Pacific Palisades,  
CA, USA  
*George Massenburg*, McGill University, Montreal,  
Quebec, Canada  
*Susan Rogers*, Berklee College of Music, Boston,  
MA, USA  
*Tony Visconti*, David Bowie, T.Rex

### **RP10 - TUNING THE VOCAL—WATCH, LISTEN, AND LEARN**

**Thursday, October 17, 2:45 pm – 3:45 pm**

**Room 1E21**

Presenters: **Alex Case**, University of Massachusetts Lowell,  
Lowell, MA, USA  
**Ian Kagey**, Berklee NYC, New York, NY, USA

### **RP11 - PITCH SHIFT EXPERTISE—RECORD AND MIX STRATEGIES FOR THE BROAD RANGE PITCH EFFECT POSSIBILITIES**

**Thursday, October 17, 4:00 pm – 5:30 pm**

**Room 1E21**

Presenter: **Alex Case**, University of Massachusetts Lowell,  
Lowell, MA, USA

### **RP12 - RECORDING AND REALIZING IMMERSIVE CLASSICAL MUSIC FOR, AND WITH, DOLBY ATMOS**

**Friday, October 18, 9:00 am – 10:30 am**

**Room 1E17**

Moderator: **John Loose**, Dolby Laboratories, Inc., San  
Francisco, CA, USA

Panelists: *David Bowles*, Swineshead Productions LLC,  
Berkeley, CA, USA  
*Morten Lindberg*, 2L (Lindberg Lyd AS), Oslo, Norway  
*Jack Vad*, San Francisco Symphony, San Francisco,  
CA, USA

## **Recording & Production**

### **RP13 - MASTERING IMMERSIVE AUDIO**

**Friday, October 18, 10:15 am – 11:45 am**

**Room 1E08**

Moderator: **Michael Romanowski**, Coast Mastering, Berkeley, CA, USA; The Tape Project

Panelists: *Stefan Bock*, msm-studios GmbH, Munich, Germany  
*Gavin Lurssen*, Lurssen Mastering, Los Angeles, CA, USA  
*Andres A. Mayo*, Andres Mayo Mastering & Audio Post, Buenos Aires, Argentina  
*Darcy Proper*, Darcy Proper Mastering, Eemnes, The Netherlands; Wisseloord Studios, Hilversum, The Netherlands  
*Mark Wilder*

### **RP14 - FOR THE RECORD: ENGINEERING PRINCE**

**Friday, October 18, 11:00 am – 12:00 noon**

**Room 1E21**

Moderator: **Leslie Ann Jones**, Recording Engineer and Producer, Director of Music Recording and Scoring, Skywalker Sound, San Rafael, CA, USA

Panelists: *Lisa Chamblee*  
*Sylvia Massy*  
*Peggy McCreary*  
*Susan Rogers*, Berklee College of Music, Boston, MA, USA

*This session is presented in association with the AES Technical Committee on Recording Technology and Practices*

### **RP15 - STUDIO DESIGN FOR 2070 —50 YEARS FROM NOW— DARE WE LOOK?**

**Friday, October 18, 1:00 pm – 2:00 pm**

**Room 1E08**

Presenters: **Ann Mincieli**, Jungle City Studios  
**Sergio Molho**, WSDG - Walters Storyk Design Group, Highland, NY, USA; Miami, FL, USA  
**John Storyk**, Walters-Storyk Design Group, Highland, NY, USA

### **RP16 - HYBRID AUDIO: MIXING VIRTUAL AND ACOUSTIC INSTRUMENTS FOR MEDIA PRESENTATIONS**

**Friday, October 18, 1:30 pm – 2:30 pm**

**Room 1E11**

Presenters: **Brandie Lane**, West Point Band, West Point, NY, USA;

## **Recording & Production**

New York University, New York, NY, USA  
**Noah Taylor**, Staff Sergeant, United States Military  
Academy Band, West Point, NY, USA

### **RP17 - PLATINUM LATIN ENGINEERS & PRODUCERS (AN AES SPECIAL EVENT)**

**Friday, October 18, 2:45 pm – 4:15 pm**

**Room 1E15+16**

Chair: **Andres A. Mayo**, Andres Mayo Mastering & Audio Post,  
Buenos Aires, Argentina

Panelists: *Carli Beguerie*, Studio Instrument Rentals/Mastering  
Boutique, New York, NY, USA  
*Mauricio Gargel*, Mauricio Gargel Audio Mastering,  
Murfreesboro, TN, USA  
*Andres Millan*, Diffusion Magazine; Boutique  
Pro Audio, Bogotá, Cundinamarca, Colombia  
*Martin Muscatello*, 360 Music Lab  
*Camilo Silva F.*, Camilo Silva F. Mastering, Chia,  
Cundinamarca, Colombia

### **RP18 - COLOR IN MASTERING: THE CREATIVE SIDE OF THE DISCIPLINE**

**Friday, October 18, 4:30 pm – 5:30 pm**

**Room 1E10**

Chair: **Jonathan Wyner**, M Works Studios/iZotope/Berklee  
College of Music, Boston, MA, USA; M Works  
Mastering

Panelists: *Adam Ayan*, Gateway Mastering Studios, Portland,  
ME USA  
*Bob Katz*, Digital Domain Mastering, Orlando,  
FL, USA  
*Mandy Parnell*, Black Saloon Studios, London, UK  
*Alex Psaroudakis*, Mworks Mastering, Quincy,  
MA, USA

### **RP19 - SOUND REPRODUCTION ON WHEELS: HOW TO SERVE THE ART**

**Friday, October 18, 4:45 pm – 5:45 pm**

**Room 1E09**

Chair: **Rafael Kassier**, Harman Becker Automotive Systems  
GmbH, Karlsbad, Germany

### **RP20 - LIVE CONCERT SOUND**

**Saturday, October 19, 11:15 am – 12:15 pm**

**Room 1E21**



## **Sound Reinforcement**

Moderator: **Terri Winston**, Women's Audio Mission,  
San Francisco, CA, USA

Panelists: *Fela Davis*, Christian McBride, KRS One  
*Michelle Sabolchick Pettinato*, Gwen Stefani, Jewel  
*Caroline Sanchez*, Saturday Night Live, Good Morning  
America

*This session is presented in association with the AES Technical Committee on Recording Technology and Practices*

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## **SOUND REINFORCEMENT**

<b>SR-01</b>	<b>Large-Scale LS System Calibration</b>	Wednesday, Oct. 16 1:30 pm – 3:00 pm Room 1E12
<b>SR-02</b>	<b>Immersive and Surround Techniques</b>	Wednesday, Oct. 16 3:00 pm – 4:30 pm Room 1E12
<b>SR-03</b>	<b>RF Super Session</b>	Thursday, Oct. 17 9:00 am – 12 noon Room 1E13
<b>SR-04</b>	<b>IP Based Live Production Intercom Systems</b>	Thursday, Oct. 17 3:00 pm – 5:00 pm Room 1E11
<b>SR-05</b>	<b>AC Power, Grounding, &amp; Shielding Super Session</b>	Friday, Oct. 18 9:00 am – 12:00 noon Room 1E12
<b>SR-06</b>	<b>A Cookbook Approach to Sound System Optimization</b>	Friday, Oct. 18 1:15 pm – 3:15 pm Room 1E21
<b>SR-07</b>	<b>Psychoacoustics for Sound Engineers</b>	Friday, Oct. 18 3:15 pm – 5:15 pm Room 1E21
<b>SR-08</b>	<b>Your Noise Isn't My Noise</b>	Friday, Oct. 18 4:15 pm – 5:45 pm Room 1E13
<b>SR-09</b>	<b>The Audio Vendor and Band Mixer</b>	Saturday, Oct. 19 11:30 am – 12:30 pm Room 1E12
<b>SR-10</b>	<b>Seven Steps to a Successful Design</b>	Saturday, Oct. 20 1:45 pm – 3:00 pm Room 1E08

## **Sound Reinforcement**

### **SR01 - LARGE-SCALE LOUDSPEAKER SYSTEM CALIBRATION, FROM SIMULATION-BASED DESIGN TO ONSITE TUNING**

**Wednesday, October 16, 1:30 pm – 3:00 pm**

**Room 1E12**

Presenters: **Etienne Corteel**, L-Acoustics, Marcoussis, France  
**François Montignies**, L-Acoustics, Marcoussis, France  
**Scott Sugden**, L-Acoustics, Oxnard, CA, USA

*This session is presented in association with the AES Technical Committee on Acoustics and Sound Reinforcement*

### **SR02 - IMMERSIVE AND SURROUND TECHNIQUES FOR LIVE PERFORMANCE**

**Wednesday, October 16, 3:00 pm – 4:30 pm**

**Room 1E12**

Presenter: **Andrew Keister**

### **SR03 - RF SUPER SESSION**

**Thursday, October 17, 9:00 am – 12:00 noon**

**Room 1E13**

Presenters: **Henry Cohen**, CP Communications  
**Jason Glass**, Clean Wireless  
**James Stoffo**, Independent, Key West, FL, USA

### **SR04 - IP BASED LIVE PRODUCTION INTERCOM SYSTEMS**

**Thursday, October 17, 3:00 pm – 5:00 pm**

**Room 1E11**

Presenters: **Henry Cohen**, CP Communications  
**Peter Erskine**, Best Audio, Mt. Vernon, NY, USA

### **SR05 - AC POWER, GROUNDING, AND SHIELDING SUPER SESSION**

**Friday, October 18, 9:00 am – 12:00 noon**

**Room 1E12**

Chair: **Henry Cohen**, CP Communications

Panelists: *Bruce Olson*, Olson Sound Design, LLC, Minneapolis, MN, USA; AFMG Services North America, LLC, Minneapolis, MN, USA  
*Bill Whitlock*, Whitlock Consulting, Ventura, CA, USA

### **SR06 - A COOKBOOK APPROACH TO SOUND SYSTEM OPTIMIZATION WITH BOB MCCARTHY**

**Friday, October 18, 1:15 pm – 3:15 pm**

**Room 1E21**

Presenters: **Jamie Anderson**, Rational Acoustics

## **Sound Reinforcement**

**Bob McCarthy**, Meyer Sound, New York, NY, USA  
**Merlijn Van Veen**, Meyer Sound Labs

### **SR07 - PSYCHOACOUSTICS FOR SOUND ENGINEERS**

**Friday, October 18, 3:15 pm – 5:15 pm**

**Room 1E21**

Presenter: **Peter Mapp**, Peter Mapp Associates, Colchester,  
Essex, UK

*This session is presented in association with the AES Technical Committee on Acoustics and Sound Reinforcement*

### **SR08 - YOUR NOISE ISN'T MY NOISE: IMPROVING SOUND EXPOSURE AND NOISE POLLUTION MANAGEMENT AT OUTDOOR EVENTS**

**Friday, October 18, 4:15 pm – 5:45 pm**

**Room 1E13**

Chair: **Adam J. Hill**, University of Derby, Derby,  
Derbyshire, UK

Panelists: *Etienne Corteel*, L-Acoustics, Marcoussis, France  
*Bob McCarthy*, Meyer Sound, New York, NY, USA  
*Elena Shabalina*, d&b audiotechnik, Backnang,  
Germany  
*Andy Wardle*, University of the Highlands & Islands,  
UK

*This session is presented in association with the AES Technical Committee on Acoustics and Sound Reinforcement*

### **SR09 - IMPROVING EDUCATION AND KNOWLEDGE TRANSFER IN SOUND REINFORCEMENT**

**Saturday, October 19, 11:30 am – 12:30 pm**

**Room 1E12**

Chair: **Elena Shabalina**, d&b audiotechnik, Backnang,  
Germany

Panelists: *Etienne Corteel*, L-Acoustics, Marcoussis, France  
*Adam J. Hill*, University of Derby, Derby,  
Derbyshire, UK  
*Malle Kaas*, Women in Live Music  
*Manuel Melon*, Le Mans Université, Le Mans, France

*This session is presented in association with the AES Technical Committee on Acoustics and Sound Reinforcement*

## **Sound Reinforcement**

### **SR10 - SEVEN STEPS TO A SUCCESSFUL SOUND SYSTEM DESIGN**

**Saturday, October 19, 3:30 pm – 5:00 pm**

**Room 1E12**

Presenter: **Josh Loar**, Michigan Technological University,  
Houghton, MI, USA; The Producers Group,  
Burbank, CA, USA

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## **SPECIAL EVENTS**

<b>SE-01</b>	<b>Opening Ceremonies/ Awards/Keynote</b>	Wednesday, Oct. 16 12:00 noon – 1:30 pm Room 1E15+16
<b>SE-02</b>	<b>Mixing &amp; Mastering for Immersive Audio</b>	Wednesday, Oct. 16 1:30 pm – 2:30 pm Room 1E08
<b>SE-03</b>	<b>The Loudness War Is Over (If You Want It)</b>	Wednesday, Oct. 16 2:45 pm – 4:15 pm Room 1E15+16
<b>SE04</b>	<b>Making Sheryl Crow's "Threads"</b>	Wednesday, Oct. 16 4:30 pm – 5:30 pm Room 1E15+16
<b>HH-01</b>	<b>Chopped and Looped (An AES Special Event)</b>	Thursday, Oct. 17 9:30 am – 11:00 am Room 1E15+16
<b>SE-05</b>	<b>Show Me the Money: Funding</b>	Thursday, Oct. 17 11:15 am – 12:15 pm Room 1E15+16
<b>SE-06</b>	<b>Lunchtime Keynote: Linda Perry</b>	Thursday, Oct. 17 1:30 pm – 2:30 pm Room 1E15+16
<b>SE-07</b>	<b>Triple Threat</b>	Thursday, Oct. 17 3:00 pm – 4:00 pm Room 1E15+16
<b>AR-01</b>	<b>Long-Term Preservation of Audio Assets (An AES Special Event)</b>	Thursday, Oct. 17 4:30 pm – 5:30 pm Room 1E15+16
<b>SE-08</b>	<b>DTVAG Forum</b>	Thursday, Oct. 17 4:30 pm – 5:30 pm Room 1E10
<b>SE-09</b>	<b>Heyser Lecture</b>	Thursday, Oct. 17 6:30 pm – 8:00 pm Room 1E15+16
<b>H-06</b>	<b>African Americans in Audio (An AES Special Event)</b>	Friday, Oct. 18 9:30 am – 11:00 am Room 1E15+16

## **Special Events**

<b>SE-10</b>	<b>How We Make Music</b>	Friday, Oct. 18 11:15 am – 12:15 pm Room 1E15+16
<b>SE-11</b>	<b>Lunchtime Keynote: 1500 or Nothin'</b>	Friday, Oct. 18 1:30 pm – 2:30 pm Room 1E15+16
<b>RP-17</b>	<b>Platinum Latin Engineers &amp; Producers (An AES Special Event)</b>	Friday, Oct. 18 2:45 pm – 4:15 pm Room 1E15+16
<b>SE-12</b>	<b>The Legendary Quad Building</b>	Friday, Oct. 18 4:30 pm – 5:30 pm Room 1E15+16

### **SE01 - OPENING CEREMONIES / AWARDS / KEYNOTE SPEECH**

**Wednesday, October 16, 12:00 pm – 1:30 pm**  
**Room 1E15+16**

Presenters: **Agnieszka Roginska**, New York University, New York, NY, USA  
**Valerie Tyler**, College of San Mateo, San Mateo, CA, USA  
**Jonathan Wyner**, M Works Studios/iZotope/Berklee College of Music, Boston, MA, USA; M Works Mastering  
**Prince Charles Alexander** introducing  
**Grandmaster Flash**, Keynote Speaker

*This session is presented in association with the AES Technical Committee on Recording Technology and Practices*

### **SE02 - MIXING & MASTERING FOR IMMERSIVE AUDIO**

**Wednesday, October 16, 1:30 pm – 2:30 pm**  
**Room 1E08**

Presenters: **Reuben Cohen**, Lurssen Mastering, Burbank, CA, USA  
**Bob Ludwig**, Gateway Mastering Studios, Inc., Portland, ME, USA  
**Gavin Lurssen**, Lurssen Mastering, Los Angeles, CA, USA  
**Greg Penny**

### **SE03 - THE LOUDNESS WAR IS OVER (IF YOU WANT IT)**

**Wednesday, October 16, 2:45 pm – 4:15 pm**  
**Room 1E15+16**

Moderator: **George Massenburg**, McGill University, Montreal, Quebec, Canada

Panelists: *Serban Ghenea*  
*Gimel "Guru" Keaton*

## **Special Events**

*Bob Ludwig*, Gateway Mastering Studios, Inc.,  
Portland, ME, USA  
*Thomas Lund*, Genelec Oy, Iisalmi, Finland  
*Ann Mincieli*, Jungle City Studios, New York, NY, USA

### **SE04 - THE MAKING OF SHERYL CROW'S "THREADS"**

**Wednesday, October 16, 4:30 pm – 5:30 pm**

**Room 1E15+16**

Moderator: **Glenn Lorbecki**, Glenn Sound Inc., Seattle, WA, USA

Panelists: *Dave O'Donnell*, Mixer/Engineer  
*TBA*

### **SE00 - DIVERSITY & INCLUSION COCKTAIL PARTY**

**Wednesday, October 16, 5:30 pm – 7:00 pm**

**Hall 1E**

### **HH01 - CHOPPED AND LOOPED—INSIDE THE ART OF SAMPLING FOR HIP-HOP (AN AES SPECIAL EVENT)**

**Thursday, October 17, 9:30 am – 11:00 am**

**Room 1E15+16**

Moderator: **Paul "Willie Green" Womack**, Willie Green Music,  
Brooklyn, NY, USA

Panelists: *Just Blaze*, Jay-Z, Kanye West  
*Breakbeat Lou*, Ultimate Breaks and Beats  
*Hank Shocklee*, Shocklee Entertainment, New York,  
NY, USA  
*Ebonie Smith*, Atlantic Records/Hamilton Cast Album

### **SE05 - SHOW ME THE MONEY: FUNDING YOUR AUDIO DREAM**

**Thursday, October 17, 11:15 am – 12:15 pm**

**Room 1E15+16**

Moderator: **Heather D. Rafter**, RafterMarch US

Panelists: *Phil Duddereridge*, Executive Chariman,  
Focusrite PLC  
*Mark Ethier*, CEO iZotope, Cambridge, MA, USA  
*Ethan Jacks*, Founder, MediaBridge Capital  
*Piper Payne*, Neato Mastering, San Francisco  
Bay Area, CA, USA  
*Wisam Reid*, Harvard Medical School

## **Special Events**

### **SE06 - LUNCHTIME KEYNOTE: LINDA PERRY**

**Thursday, October 17, 1:30 pm – 2:30 pm**

**Room 1E15+16**

Presenter: **Linda Perry**

### **SE07 - TRIPLE THREAT: THE ART, PRODUCTION & TECHNOLOGY OF MAKING MUSIC**

**Thursday, October 17, 3:00 pm – 4:00 pm**

**Room 1E15+16**

Presenters: **Danny Kortchmar**, Legendary GRAMMY nominated guitarist, songwriter and producer (Jackson Browne, Don Henley, James Taylor)  
**Linda Perry**

### **AR01 - LONG TERM PRESERVATION OF AUDIO ASSETS (AN AES SPECIAL EVENT)**

**Thursday, October 17, 4:30 pm – 5:30 pm**

**Room 1E15+16**

Moderator: **Jessica Thompson**, Jessica Thompson Audio, Berkeley, CA, USA

Panelists: *Jeff Balding*, NARAS P&E Wing  
*Rob Friedrich*, Library of Congress  
*Jamie Howarth*, Plangent Processes, Nantucket, MA, USA  
*Pat Kraus*, UMG  
*Greg Parkin*, Iron Mountain  
*Cheryl Pawelski*, Omnivore Records  
*Toby Seay*, Drexel University, Philadelphia, PA, USA

### **SE08 - DTVAG FORUM: AUDIO FOR A NEW TELEVISION LANDSCAPE**

**Thursday, October 17, 4:30 pm – 5:30 pm**

**Room 1E10**

Presenters: **Roger Charlesworth**, DTV Audio Group, New York, NY, USA  
**Tim Carroll**, Dolby Laboratories, San Francisco, CA, USA  
**Scott Kramer**, Netflix, Los Angeles, CA, USA  
**Sean Richardson**, Starz Entertainment, Denver, CO, USA  
**Tom Sahara**, Turner Sports, Atlanta, GA, USA  
**Jim Starzynski**, NBCUniversal, New York, NY, USA;  
ATSC Group, Washington D.C.

## **Special Events**

### **SE09 - HEYSER LECTURE**

**Thursday, October 17, 6:30 pm – 8:00 pm**

**Room 1E15+16**

Lecturer: **Louis Fielder**, Retired, Millbrae, CA, USA

### **H06 - AFRICAN AMERICANS IN AUDIO**

**(AN AES SPECIAL EVENT)**

**Friday, October 18, 9:30 am – 11:00 am**

**Room 1E15+16**

Moderator: **Leslie Gaston-Bird**, Mix Messiah Productions,  
Brighton, UK; Institute of Contemporary Music  
Performance, London, UK

Panelists: *Prince Charles Alexander*, Berklee College of Music,  
Boston, MA, USA  
*Abhita Austin*, Audio Engineer-Producer and Founder  
of The Creator's Suit  
*James Henry*, recording engineer/producer and  
audio educator  
*Ebonie Smith*, Atlantic Records/Hamilton Cast Album  
*Paul "Willie Green" Womack*, Willie Green Music,  
Brooklyn, NY, USA  
*Bobby Wright*, Hampton University

### **SE10 - HOW WE MAKE MUSIC—CROSSING THE DECADES FROM ANALOG TO DIGITAL**

**Friday, October 18, 11:15 am – 12:15 pm**

**Room 1E15+16**

Moderator: **Chris Lord-Alge**, Mix LA, Los Angeles, CA, USA

Panelists: *Niko Bolas*, The Surf Shack Studio, Ventura, CA USA;  
Germano Studio, NYC, NY USA  
*Danny Kortchmar*, Legendary GRAMMY nominated  
guitarist, songwriter and producer (Jackson Browne,  
Don Henley, James Taylor)  
*Tom Lord-Alge*, SPANK Studios, South Beach, FL, USA

### **SE11 - LUNCHTIME KEYNOTE: 1500 OR NOTHIN'**

**Friday, October 18, 1:30 pm – 2:30 pm**

**Room 1E15+16**

Presenters: **Larrance Dopson**  
**James Fauntleroy**

### **RP17 - PLATINUM LATIN ENGINEERS & PRODUCERS**

**(AN AES SPECIAL EVENT)**

**Friday, October 18, 2:45 pm – 4:15 pm**

**Room 1E15+16**



## **Student Events & Career Development**

Chair: **Andres A. Mayo**, Andres Mayo Mastering & Audio Post,  
Buenos Aires, Argentina

Panelists: *Carli Beguerie*, Studio Instrument Rentals/Mastering  
Boutique, New York, NY, USA  
*Mauricio Gargel*, Mauricio Gargel Audio Mastering,  
Murfreesboro, TN, USA  
*Andres Millan*, Diffusion Magazine - Boutique Pro  
Audio, Bogotá, Cundinamarca, Colombia  
*Martin Muscatello*, 360 Music Lab  
*Camilo Silva F.*, Camilo Silva F. Mastering, Chia,  
Cundinamarca, Colombia

### **SE12 - THE PAST PRESENT AND FUTURE OF THE LEGENDARY QUAD BUILDING**

**Friday, October 18, 4:30 pm – 5:30 pm**

**Room 1E15+16**

Moderator: **Prince Charles Alexander**, Berklee College of Music,  
Boston, MA, USA

Panelists: *DG*  
*Ricky Hosn*  
*Dave Malekpour*  
*Carla Springer*

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## **STUDENT EVENTS & CAREER DEVELOPMENT**

<b>SC-00</b>	<b>Resume Review</b>	Wednesday, Oct. 16 9:00 am – 5:00 pm SDA Booth
<b>SC-01</b>	<b>Empowering the Next Generation</b>	Wednesday, Oct. 16 9:15 am – 10:15 am Room 1E07
<b>SC-02</b>	<b>Education Forum</b>	Wednesday, Oct. 16 10:30 am – 12:00 non Room 1E12
<b>SC-03</b>	<b>Recording Critiques</b>	Wednesday, Oct. 16 1:30 pm – 2:30 pm Room 1E06
<b>SC04</b>	<b>Mix It!</b>	Wednesday, Oct. 16 3:00 pm – 4:00 pm Room 1E17

## **Student Events & Career Development**

SC-05	<b>Student Delegate Assembly, Part 1</b>	Wednesday, Oct. 16 4:15 pm – 5:30 pm Room 1E13
SC-06	<b>AES MatLab Plugin Competition</b>	Thursday, Oct. 17 9:00 am – 10:30 am Room 1E12
SC-07	<b>Resume Review</b>	Thursday, Oct. 17 9:00 am – 5:00 pm SDA Booth
SC-08	<b>Saul Walker Student Design Competition</b>	Thursday, Oct. 17 10:45 am – 12:15 pm South Concourse A
SC-09	<b>Recording Critiques</b>	Thursday, Oct. 17 12:00noon – 1:00 pm Room 1E06
SC-10	<b>MatLab Plugin Open Demos</b>	Thursday, Oct. 17 1:30 pm – 2:30 pm South Concourse A
SC-11	<b>Recording Competition —Part 1</b>	Thursday, Oct. 17 3:00 pm – 6:00 pm Room 1E06
SC-12	<b>Resume Review</b>	Friday, Oct. 18 9:00 am – 5:00 pm SDA Booth
SC-13	<b>Recent Graduate Panel</b>	Friday, Oct. 18 9:30 am – 11:00 am Room 1E21
SC-14	<b>The Art of Listening (High School Event)</b>	Friday, Oct. 18 11:30 am – 12:30 pm Room 1E13
SC-15	<b>Education and Career Fair</b>	Friday, Oct. 18 11:30 am – 1:30 pm South Concourse B
SC-16	<b>Recording Critiques</b>	Friday, Oct. 18 12:00 noon – 1:00 pm Room 1E06
SC-17	<b>SPARS Mentoring</b>	Friday, Oct. 18 2:30 pm – 4:00 pm South Concourse A
SC-18	<b>Recording Competition —Part 2</b>	Friday, Oct. 18 3:00 pm – 6:00 pm Room 1E06
SC-19	<b>Sound Girls Mentoring</b>	Friday, Oct. 18 4:00 pm – 5:30 pm South Concourse A
SC-20	<b>Resume Review</b>	Saturday, Oct. 19 9:00 am – 6:00 pm SDA Booth
SC-21	<b>Student Delegate Assembly, Part 2</b>	Saturday, Oct. 19 10:45 am – 12:15 pm

## **Student Events & Career Development**

<b>SC-22</b>	<b>Recording Critiques</b>	Room 1E15+16 Saturday, Oct. 19 12:30 pm – 1:30 pm
<b>SC-23</b>	<b>Essential Elements of Ear Training</b>	Room 1E06 Saturday, Oct. 19 3:00 pm – 4:30 pm Room 1E07

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### **SC00 - RESUME REVIEW (FOR STUDENTS, RECENT GRADS, AND YOUNG PROFESSIONALS)**

**Wednesday, October 16, 9:00 am – 5:00 pm**  
**SDA Booth**

Moderator: **Alex Kosiorek**, Central Sound at Arizona PBS,  
Phoenix, AZ, USA

*This review will take place during the duration of the convention by  
appointment only.*

### **SC01 - EMPOWERING THE NEXT-GENERATION OF AUDIO INDUSTRY LEADERS**

**Wednesday, October 16, 9:15 am – 10:15 am**  
**Room 1E07**

Moderator: **Jay LeBoeuf**, Executive Director at Real Industry,  
Lecturer at Stanford University

### **SC02 - EDUCATION FORUM - EDUCATION OUTSIDE SCHOOL**

**Wednesday, October 16, 10:30 am – 12:00 noon**  
**Room 1E12**

Moderator: **Magdalena Piotrowska**, Gdansk University of  
Technology, Poland; Hear Candy Mastering, Poland

### **SC03 - STUDENT RECORDING CRITIQUES**

**Wednesday, October 16, 1:30 pm – 2:30 pm**  
**Room 1E06**

Moderator: **Ian Corbett**, Kansas City Kansas Community College,  
Kansas City, KS, USA; off-beat-open-hats recording &  
sound reinforcement

### **SC04 - MIX IT! IMPROVING YOUR MIXES AND YOUR MIXING WORKFLOW**

**Wednesday, October 16, 3:00 pm – 4:00 pm**  
**Room 1E17**

## **Student Events & Career Development**

Chair: **Ian Corbett**, Kansas City Kansas Community College,  
Kansas City, KS, USA; off-beat-open-hats recording &  
sound reinforcement

Panelists: *Cosette Collier*, Middle Tennessee State University,  
Murfreesboro, TN, USA  
*Yuri Lysolvanov*, Flashpoint Chicago, a campus of  
Columbia College Hollywood, Chicago, IL, USA

### **SC05 - STUDENT DELEGATE ASSEMBLY, PART 1**

**Wednesday, October 16, 4:15 pm – 5:30 pm**

**Room 1E13**

### **SC06 - AES MATLAB PLUGIN STUDENT COMPETITION**

**Thursday, October 17, 9:00 am – 10:30 am**

**Room 1E12**

### **SC07 - RESUME REVIEW (FOR STUDENTS, RECENT GRADS, AND YOUNG PROFESSIONALS)**

**Thursday, October 17, 9:00 am – 5:00 pm**

**SDA Booth**

Moderator: **Alex Kosiorek**, Central Sound at Arizona PBS,  
Phoenix, AZ, USA

*This review will take place during the duration of the convention by  
appointment only.*

### **SC08 - SAUL WALKER STUDENT DESIGN COMPETITION**

**Thursday, October 18, 5:00 pm – 6:00 pm**

**South Concourse A**

### **SC09 - STUDENT RECORDING CRITIQUES**

**Thursday, October 17, 12:00 noon – 1:00 pm**

**Room 1E06**

Moderator: **Ian Corbett**, Kansas City Kansas Community College,  
Kansas City, KS, USA; off-beat-open-hats recording &  
sound reinforcement

### **SC10 - MATLAB PLUGIN AES STUDENT COMPETITION— OPEN DEMOS**

**Thursday, October 17, 1:30 pm – 2:30 pm**

**South Concourse A**

### **SC11 - STUDENT RECORDING COMPETITION—PART 1**

**Thursday, October 17, 3:00 pm – 6:00 pm**

**Room 1E06**

## **Student Events & Career Development**

### **SC12 - RESUME REVIEW (FOR STUDENTS, RECENT GRADS, AND YOUNG PROFESSIONALS)**

**Friday, October 18, 9:00 am – 5:00 pm**

**SDA Booth**

Moderator: **Alex Kosiorek**, Central Sound at Arizona PBS,  
Phoenix, AZ, USA

*This review will take place during the duration of the convention by appointment only.*

### **SC13 - RECENT GRADUATE PANEL**

**Friday, October 18, 9:30 am – 11:00 am**

**Room 1E21**

Moderator: **Justin Chervony**, University of Miami, Frost School  
of Music, Miami, FL, USA

Panelists: *TBA*

### **SC14 - THE ART OF LISTENING**

**Friday, October 18, 11:30 am – 12:30 pm**

**Room 1E13**

Presenter: **Rick Snoman**, Dance Music Production, Manchester,  
UK

*This is a High School event limited for HS students.*

### **SC15 - EDUCATION AND CAREER FAIR**

**Friday, October 18, 11:30 am – 1:30 pm**

**South Concourse B**

### **SC16 - STUDENT RECORDING CRITIQUES**

**Friday, October 18, 12:00 pm – 1:00 pm**

**Room 1E06**

Moderator: **Ian Corbett**, Kansas City Kansas Community College,  
Kansas City, KS, USA; off-beat-open-hats recording &  
sound reinforcement

### **SC17 - SPARS MENTORING**

**Friday, October 18, 2:30 pm – 4:00 pm**

**South Concourse A**

Moderator: **Drew Waters**, VEVA Sound

### **SC18 - STUDENT RECORDING COMPETITION—PART 2**

**Friday, October 18, 3:00 pm – 6:00 pm**

**Room 1E06**

## **Student Events & Career Development**

### **SC19 - SOUND GIRLS MENTORING**

**Friday, October 18, 4:00 pm – 5:30 pm**

**South Concourse A**

### **SC20 - RESUME REVIEW (FOR STUDENTS, RECENT GRADS, AND YOUNG PROFESSIONALS)**

**Saturday, October 19, 9:00 am – 5:00 pm**

**SDA Booth**

Moderator: **Alex Kosiorek**, Central Sound at Arizona PBS,  
Phoenix, AZ, USA

*This review will take place during the duration of the convention by appointment only.*

### **SC21 - STUDENT DELEGATE ASSEMBLY, PART 2**

**Saturday, October 19, 10:45 am – 12:15 pm**

**Room 1E15+16**

### **SC22 - STUDENT RECORDING CRITIQUES**

**Saturday, October 19, 12:30 pm – 1:30 pm**

**Room 1E06**

Presenters: **Ian Corbett**, Kansas City Kansas Community College,  
Kansas City, KS, USA; off-beat-open-hats recording &  
sound reinforcement

### **SC23 - ESSENTIAL ELEMENTS OF EAR TRAINING FOR CONTEMPORARY AUDIO ENGINEERS**

**Saturday, October 19, 3:00 pm – 4:30 pm**

**Room 1E07**

Presenters: **Jason Corey**, University of Michigan, Ann Arbor,  
MI, USA  
**Kazuhiko Kawahara**, Kyushu University, Fukuoka,  
Japan  
**Sungyoung Kim**, Rochester Institute of Technology,  
Rochester, NY, USA  
**Doyuen Ko**, Belmont University, Nashville, TN, USA  
**Sean Olive**, Harman International, Northridge,  
CA, USA  
**Timothy Ryan**, Webster University

## **AES Standards Meetings**

# **AES MEETINGS**

### **HISTORICAL COMMITTEE MEETING**

**Friday, October 18, 2:00 pm – 3:30 pm**  
**Room 1C04**

### **REGIONS & SECTIONS MEETING**

**Friday, October 18, 4:00 pm – 6:00 pm**  
**Room 1C04**

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# **AES TECHNICAL COMMITTEE**

Meetings of Technical Committees take place throughout the Convention. They take place in **Room 1C02** (except for the BOD meetings which take place in **Room 1E07**).

The meetings are open to all interested individuals.

The schedule of meetings can be found at:

<http://www.aes.org/technical/meetings>.

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# **AES STANDARDS MEETINGS**

### **SC-02-12-R TASK GROUP ON STREAMING METADATA**

**Wednesday, October 16, 9:00 am – 10:30 am**  
**Room 1C03**

### **SC-02-12-N TASK GROUP ON MEDIA NETWORK DIRECTORY ARCHITECTURE**

**Wednesday, October 16, 10:30 am – 12:00 noon**  
**Room 1E07**

### **SC-04-04 WORKING GROUP ON MICROPHONE MEASUREMENT AND CHARACTERIZATION**

**Wednesday, October 16, 1:30 pm – 2:30 pm**  
**Room 1E07**

## **AES Standards Meetings**

### **SC-04-09 WORKING GROUP ON ASSESSMENT OF ACOUSTIC ANNOYANCE**

**Wednesday, October 16, 2:30 pm – 4:00 pm  
Room 1E07**

### **SC-02-01 WORKING GROUP ON DIGITAL AUDIO MEASUREMENT TECHNIQUES**

**Wednesday, October 16, 4:00 pm – 5:00 pm  
Room 1E07**

### **SC-02-08 WORKING GROUP ON AUDIO-FILE TRANSFER AND EXCHANGE**

**Thursday, October 17, 9:00 am – 10:00 am  
Room 1E07**

### **SC-04-03-A TASK GROUP ON MEASURING LOUDSPEAKER MAXIMUM LINEAR PEAK SPL USING NOISE**

**Thursday, October 17, 10:00 am – 11:00 am  
Room 1E07**

### **SC-04-03 WORKING GROUP ON LOUDSPEAKER MODELING AND MEASUREMENT**

**Thursday, October 17, 11:00 am – 12:30 pm  
Room 1E07**

### **SC-05-02 WORKING GROUP ON AUDIO CONNECTORS**

**Thursday, October 17, 3:00 pm – 4:00 pm  
Room 1E07**

### **SC-04-08 WORKING GROUP ON MEASUREMENT AND EQUALIZATION OF SOUND SYSTEMS IN ROOMS**

**Thursday, October 17, 4:00 pm – 5:30 pm  
Room 1E07**

### **SC-02-12-L TASK GROUP ON OPEN CONTROL ARCHITECTURE**

**Friday, October 18, 9:00 am – 10:30 am  
Room 1E07**

### **SC-07-01 WORKING GROUP ON AUDIO METADATA**

**Friday, October 18, 10:30 am – 11:30 am  
Room 1E07**

### **SC-02-02 WORKING GROUP ON DIGITAL INPUT/OUTPUT INTERFACING**

**Friday, October 18, 11:30 am – 12:30 pm  
Room 1E07**



## **AES Standards Meetings**

### **SC-05-05 WORKING GROUP ON GROUNDING AND EMC PRACTICES**

**Friday, October 18, 1:30 pm – 2:30 pm  
Room 1E07**

### **SC-02-12 WORKING GROUP ON AUDIO APPLICATIONS OF NETWORKS**

**Friday, October 18, 4:00 pm – 5:30 pm  
Room 1E07**

### **AESSC PLENARY**

**Saturday, October 19, 9:00 am – 11:00 am  
Room 1E07**

## **Upcoming AES Conventions and Conferences**

**2020 AES Academy 2020**  
**at the NAMM Show**  
Anaheim, CA, USA  
2020 January 16–19



**148th CONVENTION**  
Austria Center Vienna  
Vienna, Austria  
2020 May 25–28



**2020 International Conference**  
“Audio Education”  
Murfreesboro & Nashville, TN, USA  
2020 July 23–25



**2020 International Conference**  
“Audio for Virtual and Augmented Reality 2020”  
Redmond, WA, USA  
2020 August 17–19



**149th CONVENTION**  
Javits Convention Center  
New York, NY, USA  
Dates TBA

For the latest information  
on AES conventions  
and conferences, visit  
the AES Web site at  
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