CONFERENCE REPORT

For roughly nine months of the year the lives of full-time faculty, including those who teach audio, electroacoustics, communications, and music, are tightly bound to academic calendars consisting of class meetings and office hours, committee work, grant deadlines, and the recurring cycle of evaluating homework and exams.

Summer break offers a precious respite from this pattern along with welcomed time for research, renewal, and, on occasion, some type of professional development. It's no accident that the inaugural AES conference on audio education took place mid-summer (for the northern hemisphere at least), drawing 145 faculty, staff, and industry professionals from around the world to share perspectives on the state of academic audio programs—their goals, outcomes, successes, and challenges.

The "Ed Conference" (officially designated the AES 50th International Conference) was a three-day residential event set in the relaxed environment of Middle Tennessee State University's campus in Murfreesboro, Tennessee, from July 25–27, 2013. By orienting its content toward both academia and industry, the conference embraced a dual mission: to explore the relationship between contemporary audio education programs and the commercial audio industry, and to present examples of effective curricular content and instructional methods supported by research and case studies.

Image courtesy of Nashville Convention & Visitors Corporation

Formal audio education programs have expanded significantly on a worldwide basis in recent decades following their first appearance in Europe in the 1960s and in the United States in the early 1970s. Today, hundreds of colleges, universities, career schools, and high schools offer a wide range of courses in audio, particularly in music production and related areas. The large numbers of students who attend AES conventions and the popularity of tutorial sessions, career-counseling, and educational events at these major meetings are clear evidence that students are eager to pursue training and potential careers in audio.

The structure and content of audio programs is somewhat diverse, reflecting variables of history, tradition, local need, and available expertise. But with that in mind, most academic audio programs throughout the world are oriented in one of three general directions: (1) toward music recording, production, and live entertainment; (2) toward mass communication, including electronic journalism, broadcasting, and film; or (3) allied with the engineering arts and sciences, including electrical engineering, acoustics, and psychophysics.

Different pedagogical traditions exist in these areas, and faculty face distinct curricular challenges depending on the orientation, goals, size, selectivity, funding, and accreditation of their programs. More broadly, recent economic and legislative pressures in many states and countries are also responsible for increasing levels of program assessment and quality-improvement mandates. The relatively short history and interdisciplinary nature of audio education mean that faculty rely on a diverse set of paradigms for instruction and curriculum design. Are there common considerations, techniques, and outcomes that all audio programs should embrace? What responsibilities do educators and commercial practitioners share for the current and future health and quality of the audio industry?

These motivating factors, some self-evident and others emerging from AES committee meetings, forums, and private conversations, led cochairs Michael Fleming and Bill Crabtree, both MTSU Recording Industry professors, to submit a formal proposal for the 50th Conference in October 2011.

Plans for the conference evolved between 2011 and 2013 with input from many sources, notably the AES Education Committee and educator forums held at the 131st, 133rd, and 134th conventions. In addition to Fleming and Crabtree, the organizing committee ultimately grew to include papers chair Jason Corey (University of Michigan), program chair Alex Case (University of Massachusetts at Lowell), and a local host committee consisting of MTSU professor Cosette Collier and MTSU graduate students Janet Czys, James Ducey, Drew Elliot, Daudi Fletcher, and Andrew Riehle. These students and faculty deserve great credit for ensuring that registration, daily hospitality, and technical functions ran smoothly during the conference week itself.

Activities on the MTSU campus took place in four primary lecture halls (two in the College of Mass Communication and two in the adjacent College of Education building), while sponsored technical exhibitions were located in adjoining control rooms and recording studios in the Mass Communication building. The largest lecture hall, with its 150-seat capacity, was a perfect match for the number of delegates, authors, and sponsors who attended; thus it was the site of the plenary sessions that opened and closed the conference.

At other times, paper sessions and workshops were presented in two, and sometimes three, parallel tracks with the goal of offering program variety and promoting physical movement among the meeting rooms and sponsored demonstration areas. The core program was 29 paper presentations (half-an-hour each) and 14 workshops and panel presentations (60–90 minutes each), including two sponsored tutorial demonstrations. (Abstracts and the full program schedule remain available at http://www.aes.org/conferences/50/program/.)

Confirming the timeliness and relevance of the conference is the fact that many of the major North American and European university audio programs were represented by authors, panelists, and participants. Overall, the conference drew delegates from 25 North American states or provinces and 12 other countries from Northern Europe, Asia, the South Pacific, and South America.

KEYNOTE

Bob McCarthy's keynote presentation was a personal narrative that helped to frame audio education as a process that, for him, involves ongoing learning and teaching at the intersection of commercial applications and basic scientific principles. McCarthy, a noted sound system designer and director of system optimization at Meyer Sound, introduced himself tongue-in-cheek as "the guy who has made more mistakes aligning sound systems than you," and he sincerely acknowledged all of his clients "for funding his ongoing education."

McCarthy traced the progress of discovery and innovation in audio from the philosophers and natural scientists of previous centuries to industrial inventors and mainstream manufacturers, back to start-ups in garages and independent companies, major manufacturers, to academic institutions. Facing the absence of a formal curriculum in audio at Indiana University in the 1970s, McCarthy proposed his own undergraduate interdisciplinary major combining music and technology. The ambivalent reaction of a prospective employer in 1978 was typical for the time: "I'm not sure about hiring a guy with all this audio education…. I get my best guys out of laundromats."

Bill Crabtree and Michael Fleming (center), conference cochairs, with MTSU graduate students Drew Elliot, James Ducey, Jay Czys, Andrew Riehle, and Daudi Fletcher

Bob McCarthy discusses the process of audio education in his keynote.

McCarthy praised today's range of potential sources for high-quality audio training and information, including academia, manufacturers and the web. However, he expressed concern about the trustworthiness and validity of many sources, and he cautioned that students must learn to evaluate manufacturer claims, "train-fomercials," and various purported tricks of the trade with scepticism. In a concise series of slides, McCarthy reminded the audience why sound is a challenging subject: (1) it's a stream of singular sensory data; (2) it's invisible; (3) its audibility is solitary (our sonic experiences are private and unique); (4) it has a 1,000:1 frequency scale factor; (5) it has a 1 million to 1 level scale factor; (6) log perception in a linear world; (7) "a little thing called phase;" (8) and the fact that "it's all in your head."

In closing, McCarthy reminded the audience to be mindful about balancing old, new, and "forever" concepts in curriculum design. Particularly in the live sound environment, old practices and technologies (e.g., analog mix consoles, patch bays, stand-alone analog processing, single-purpose digital processors, snakes, and impedance) have given way to new workflows centered around digital audio networks, optical interfaces, hubs, routers, LANs, and packets. "Science as a second language" remains timeless and universal, however, and the principles of physics, perception, business practices, personal relationships, and competition are "forever" concepts that cannot be neglected.

David Scheirman of Harman encourages educators to keep courses attuned to the significant shifts taking place in the commercial arena in order to give their students the best chance of employment.

Sharon Corbitt-House presents a history of RCA Studio A (now Ben's Studio).

PAPERS AND WORKSHOPS

David Scheirman, director of knowledge resources at Harman Professional, opened the paper sessions with his response to the provocative question "Are Audio Education Programs Keeping Pace with New Developments in Industry?" Like McCarthy, Scheirman noted the "rapid transition away from the analog technology favored by many veteran professional sound mixers" to newer digital formats, a trend fueled by the falling cost of DSP, savings associated with efficiency and flexibility, and demographic shifts that will coincidentally offer today's students "better access to more [live production] employment situations than during the past decade."

"Audio education programs focused solely on recording, and primarily training students for jobs in media production, should not overlook this shift in the type of commercial audio positions available in the future," Scheirman warned. He provided examples of ways to balance desirable experiential learning with classroom basics, but added that the "resources required to provide the type of hands-on experience that many students are seeking are quite different than those needed to provide effective instruction in audio theory."

One approach for audio education programs to stay current, according to Scheirman, is to leverage the product specialists, training facilities, and product-specific programs that manufacturers currently use as part of their commercial outreach. He observed that "educational institutions may be understandably reticent about relying on commercial resources outside their control as a formal part of their curricula," and "audio industry equipment vendors may find it hard to justify the application of their own expensive training resources to non-commercial activities. But ways can be sought to better link audio education programs and the industry segments their graduates seek to enter." Drawing on examples from Harman, he discussed the pros and cons of site visits, factory courses, trade show seminars, and online tutorials for providing students and faculty alike the opportunity to incorporate practical applications and cutting-edge developments in their educations.

Scheirman offered encouraging words to both constituencies—educators and employers—that they play a joint role in creating successful commercial ecosystems capable of supporting the careers of individual audio professionals. Models exist in numerous other industries, he said, and plans to meet this goal "should be included in new programs by both the education community and the business establishments that create paid positions for graduating students."

Following this opening paper, the first workshop/panel presented a timely case study of collaboration between leaders in the music production industry and a local school board. Maureen Droney, director of the Recording Academy's Producers & Engineers Wing and NARAS representative Susan Stewart took the stage with engineers Jeff Balding and Julian King and Metro-Nashville Public Schools representative Laurie T. Schell, and instructional designer Sam Lorber to describe their work implementing a new music education curriculum at Pearl-Cohn Entertainment Magnet High School.

Part of Nashville's "Music Makes Us" initiative, the Pearl-Cohn project involved contributions and guidance from P&E Wing members, numerous manufacturers, faculty, and staff to design and install a world-class recording studio serving the school's student record label and new audio and music business-related programs. In a separate paper, Daniel Wood (SUNY Oswego) offered similar perspectives on a collaborative teaching project that paired college-level audio production students and faculty with middle school general music classes.

Three additional workshops focused on students' transitions from academia to industry. Mark Rubel (Blackbird Academy), Douglass Bielmeier (MTSU), David Tough (Belmont University), and Kirk

Douglass Bielmeier, Mark Rubel, Dave Tough, and Kirk Imamura consider employer needs and the transition of students to industry.

Imamura (SPARS/Avatar Studios) presented "An Audio Education Report Card." Bielmeier and Tough opened the panel by presenting findings from their research regarding employer needs and student competencies. A key weakness in students graduating from audio engineering technology programs appears to be inadequate communication and listening skills. Open discussion of proposed solutions and strategies followed.

Maintaining focus on entry-level industry training, Daniel Pfiefer (MTSU), Daniel Wujcik (Belmont University), and John Krivit (New England Institute of Art and AES Education chair) led a discussion of current practices in audio internship programs. The three professors, representing public, private/non-profit, and for-profit schools, respectively, presented their institutions' methods and philosophies as well as evaluation instruments developed to measure student performance.

Finally, the "Beyond the Recording Studio" panel examined industry career options for audio program graduates. Numerous programs exist to train students in music technology and recording techniques, but this panel of industry professionals offered a different perspective on job opportunities for students. David Scheirman (Harman Professional), Fadi Hayek (Solid State Logic), Scott Pederson (Waves), and Buford Jones (Meyer Sound) reviewed their own paths within audio and discussed alternative career positions beyond the recording studio environment.

Several authors presented papers on the relationships between academic audio programs and either commercial employers or governing bodies in their regions or countries. Mark Thorley (Coventry University) found potential value in incorporating external, professional review into the creation and assessment of student portfolios in the United Kingdom. In Sydney, Australia, Mesia McKinnon found evidence of cultural conflicts and course misalignments among traditional academic universities, private vocational schools, and local industry. And in Zimbabwe, Africa, David Gleeson identified a critical education gap that must be filled if the regional music production infrastructure is to meet the cultural and market demands of a population already accustomed to managing communication, finance, and even medical transactions through its mobile phone systems. Gleeson's proposal envisions partnerships among corporations, governmental bodies and academic institutions, including a work-study model like that of the Banff Center (Alberta, Canada).

Distance learning, a growth area within instructional technology overall, was the subject of Miriam Iorwerth, David Paterson, and Mark Sheridan's paper describing their "Remote Digital Music Collaboration" course at the University of the Highlands and Islands (Scotland). Not only did students participate in an online collaborative music project but the course content was also delivered through a combination of video conferences, online virtual-learning environments, and residential sessions.

One of the conference's most popular workshops was on the subject of "Effective College Teaching." This two-part workshop was presented by Jane Williams, professor of educational leadership at MTSU. Many audio experts enter academia with little or no formal exposure to the science of teaching and learning, so Williams provided an interactive introduction to curriculum design and classroom management that drew extensively on her analysis of pedagogical research and practical experience. In the first installment, Williams presented the key characteristics of effective college teachers, focusing on proven teaching techniques and meaningful methods of assessment. In part, Williams explained that effective teachers (1) create well-organized course and lesson plans but smoothly incorporate adjustments as needed along the way; (2) set and demonstrate high standards for performance; (3) accurately assess and maintain student engagement; (4) create an appropriate frequency of assignments and balance of assignment types; and (5) accurately assess and respond to student performance with constructive feedback and appropriate types of reinforcement. Many examples were given, sparking a lively conversation about planning and implementing classroom lessons and experiences to increase the probability of student learning.

The next day, Williams' workshop continued by digging deeper into the subject of planning for active student involvement in the classroom. In particular, Williams focused on the fact that various student learning styles unavoidably impact the effectiveness of instruction. She gave examples to demonstrate how the same concepts can be presented in a variety of ways to reach more students and reinforce key outcomes through various modalities. The end of the session focused on generational tendencies among learners and why the current generation of college students act and learn the way they do.

Another pedagogy-oriented workshop led by Phil Valera (Barton College), Christopher Plummer (Michigan Technological University), and Curtis Craig (Penn State University) examined assessment tools and the challenge of "Grading the Creative." They used example assignments and assessment rubrics to support their discussion about the relationships between assignments, grading, and learning in creative programs.

Within the paper track, Ben Coulas' case study of a "Practical Applied Skills Exam" contextualized the role and impact of individual skills tests from a variety of political and symbolic perspectives, including human resources. These frameworks offered insight into issues of student motivation, retention, and course quality. Other papers offered methods for teaching specific audio-related tasks or concepts. Gabe Herman (Hartt School of Music) and Ian Anderson (Butler University) separately addressed signal-flow pedagogy. Herman's approach used a software-based console/channel strip simulator that allows students to practice console operations and study audio signal flow using a PC or mobile device. Anderson compared two methods for graphically presenting signal flow theory and reinforcing practical instruction: one method used traditional PowerPoint slides and the other used an interactive, multi-axis Prezi presentation. While the students in Anderson's two experimental groups did not show a statistically significant difference in performance on a subsequent hands-on signal-flow test, the Prezi group


Jane Williams discusses education and audio with Doug Bielmeier.

John Merchant, "Thinking Inside the Box"

did spend significantly more time engaged with the Prezi study materials, suggesting that interactive, multi-layer presentation materials may be more engaging to students and have the potential to enhance signal flow comprehension.

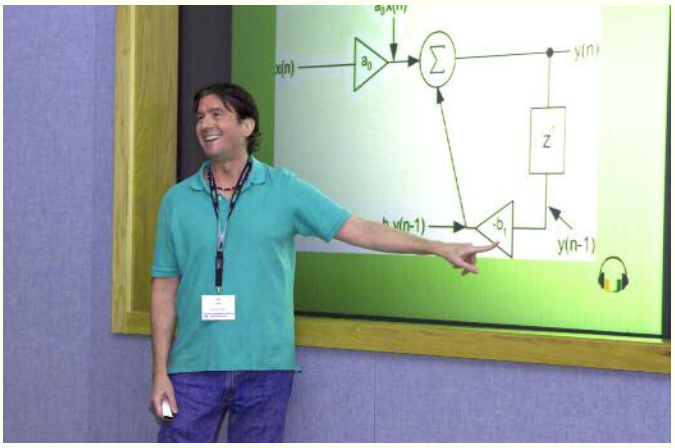
Another task that requires practical reinforcement is operating a boom microphone on a video production set. To bridge the gap between classroom theory and a working set with live actors, Peter Damski (Savannah College of Art and Design) designed a boom training system using prerecorded multitrack dialogue and life-size actor-facades each equipped with a small loudspeaker at head height. Damski's paper describes the fabrication of this recording simulation system along with results and considerations derived from using it with a class of students.

In the sequence of production tasks, mixing follows recording, and John Merchant's paper "Thinking Inside the Box" presented a detailed explanation of the course structure and rationale for an audio mixing techniques course offered at MTSU. The course approaches mixing in part as a series of skills and problem-solving exercises akin to the way a musician practices scales and plays musical etudes. In application, according to Merchant, the mixing instructor's role is to illuminate "why" as much as "how." One guiding principle Merchant emphasizes is "deliberate practice," which requires individuals to "prepare in advance before attempting a task, perform at their highest level, reflect on their own performance, and acquire additional knowledge as needed before reattempting."

Will Pirkle (University of Miami) explained that an effective way for students to enhance their artistic skills, marketability, and entrepreneurship is to gain competency in basic digital signal processing. His paper, "Teaching Audio Signal Processing Theory Without Calculus or Complaints," demonstrated that fundamental concepts of filtering can be taught "from the bottom up" through analyzing a digital filter by hand before learning the complex algebra theory that takes the tedium out of the original analysis. In addition, Pirkle's RackAFX audio plug-in design software and accompanying book offer a point-of-entry for both faculty and students to the sometimes intimidating world of mathematically-based signal processing and coding.

Seeking to break down similar barriers in the acoustic domain, Bob McCarthy returned following his keynote address to present a master class on acoustics and audio system measurement techniques. This workshop, sponsored by Meyer Sound and based on the company's extensive training curriculum, provided an overview of essential principles involved in the design and measurement of complex sound reinforcement systems. McCarthy discussed signal parameters, filters, phase response, and line array theory, all foundational concepts that students need in the evolving job market associated with live entertainment sound engineering.

Harman's "Listening Lab," the conference's other sponsored workshop, was presented by Sean Olive and David Scheirman and offered insight into subjective audio evaluation protocols and methods for developing critical listening skills. Olive summarized results from many of his recent investigations of loudspeaker and headphone characteristics and their correlations with perceived quality. One study offered encouraging evidence that teenagers and college students actually prefer higher quality music formats and accurate sound reproduction when given the chance to A/B them against lossy formats and less accurate loudspeakers under controlled, double-blind listening conditions. Olive also demonstrated Harman's desktop software application "How to Listen" (freely available online), which is used at the company to train and qualify panels of expert listeners who participate in audio research projects and product development tests.



Will Pirkle shows how to teach signal processing theory without calculus or complaints.

Additionally, six papers and two workshop sessions focused on various aspects of acoustics, ear-training, and sound perception. Paul Thompson, Ben Mosley, and Michael Ward's paper discussed the development and implementation of a dedicated acoustics and critical listening module at Leeds Metropolitan University (UK) where the BSc (Hons) in music technology course content was recently redesigned in response to changes in the UK higher education sector that increasingly emphasize skill outcomes and student educational benefits. Their paper includes results of the curriculum change on the development of students' skills and knowledge in this area and discusses some of the challenges faced through teaching acoustics and critical listening in the classroom.

According to Akira Nishimura (Tokyo University of Information Sciences), nontechnical students in the Department of Informatics at TUIS gave positive ratings to a course of ear training designed to promote careful listening to sounds and learning about the factors that influence audio quality. The course was presented through both group and individual instruction with support from custom-designed web-based tools. Bradford Swanson (Pratt Institute) offered a comparative overview of sensory analysis methods from various industries and argued that a well-designed audio curriculum that includes meaningful subjective comparisons should "execute listening comparisons that balance careful methodology with social, collaborative learning experiences." Since students will make important production decisions based on their subjective responses to various combinations of equipment, instruments, performances, and media types, Swanson noted that it's both critical and challenging to prepare demonstrations and experiences that appropriately control certain variables during the learning process.

Sandra Guzman (Columbia College Chicago) presented a range of media resources and exercises related to auditory physiology and psychoacoustics that she and her coauthors Benjamen Kanters and Pantelis Vassilakis consolidated within their audio arts and acoustics curriculum. A paper by Mike Estep (Cameron University) and Chuiyuan Meng (Indiana University Purdue University Indianapolis) described the development of an interactive e-book that teaches sound reinforcement students to identify and attenuate feedback

The NARAS P&E Wing panel discusses "Pearl-Cohn High School: A Case Study of Collaboration Between Industry and Education". From left, Susan Stewart, Jeff Balding, Sam Lorber, Laurie Schell, Julian King, and Maureen Droney.

frequencies based on several alternative methodologies including relative pitch associations and mnemonic imagery.

Mark McKinnon-Bassett (University of Sydney) presented a paper cowritten with William Martens, "Experimental Comparison of Two Versions of a Technical Ear Training Program," in which participants identified the center frequency of a parametric filter applied to pink noise. One group of participants used an identification-by-continuous-adjustment method while another group used a successive-approximation method by guessing the center frequency without continuously adjusting the filter. Certain post-training tasks showed significantly different results for the two groups, suggesting that the groups may have developed different listening strategies based on their training experiences.

The Systematic Ear-Training Curriculum workshop helped to tie these ideas together with lively discussion and demonstrations. Spread over two days, this workshop began with a panel discussion featuring Sungyoung Kim (Rochester Institute of Technology), Timothy Ryan (Webster University), Jason Corey (University of Michigan), Doyuen Ko (McGill University), and Kazuhiko Kawahara (Kyushu University). The panelists traced the evolution of timbral ear-training methods and shared their experiences in developing new tools including adaptive interactive quiz software to promote efficient student learning of practical aural identification skills. The second installment offered a lab-based interactive session with more demonstrations and discussion.

Sound recording metadata is a current hot-topic, especially within archives and libraries, major record labels, and the music distribution industry. Panelists Cosette Collier (MTSU), Alison Booth (Sony Music Nashville), Maureen Droney (NARAS P&E Wing), John Spencer (BMS/Chace), and Bil VornDick (producer, engineer, instructor) discussed "Integrating Metadata Education into Existing Recording Curricula." This workshop provided an overview of why metadata is important, what progress is being made toward more comprehensive metadata standards, and why education on this topic should be an integral part of any entertainment-business curriculum. New business opportunities exist in areas associated with metadata, and schools have a tremendous opportunity, and indeed an obligation, to engage tomorrow's leaders in this vital topic.

As technology and production methods continue to evolve, students inevitably face the need to adapt their skills to unfamiliar situations and gain new functional knowledge through self-directed inquiry and research. Nyssim Lefford and Jan Berg (Lulea University of Technology) offered an analysis of engineering competencies and learning environments in their paper "From Practice to Research and Back Again: Research Skills in Audio Engineering Education." Drawing contrasts between apprenticeships and the classroom as well as vocational versus traditional academic priorities, they suggest that a research-based learning environment can help to develop students' capacities for "formulating and seeking answers to questions about how the processes and phenomena of audio engineering work," skills directly applicable to problem-solving and professionalism both in theory and practice.

Learning environments were also emphasized in a related paper by Erik Nordstrom and Caroline Stenbacka Nordstrom (Lulea University of Technology) that highlighted variables (e.g. technology, routines, artistic content, and social setting) and procedures that contribute to successful cooperative learning experiences between recording engineering students, producers, and studio musicians. Jan Berg later expanded on the curricular challenge of balancing art, science, and practical application in his contributions to a panel discussion, "Audio Education at the Masters Level and Beyond." Together, Berg and faculty members Michael Fleming (MTSU), Leslie Gaston (University of Colorado Denver), and student Jamie Tagg (doctoral candidate at McGill University) explored the factors that distinguish post-graduate programs in audio and music technology from their undergraduate counterparts. Discussion topics included pedagogical training (or the lack thereof) for graduate teaching assistants and the relative merits of various academic traditions with contrasting emphases on research, creative activity, and commercial applications. This panel also included prerecorded input from academic administrators Stephen Webber (Berklee College of Music) and Provost Brad Bartel (MTSU) with their thoughts on the potential "agility" of graduate programs to meet the industry-oriented needs of advanced students.

The closing workshop of the conference focused on "Accreditation, Certification, and Licensure" and the role that these assessment types play in audio education programs. Adam Olson (Shenandoah University) discussed manufacturer certification programs, summarizing details from his earlier paper. S. Alex Ruthmann (New York University) described the National Association of Schools of Music (NASM) accreditation process, and Wesley Bulla (Belmont University) recounted his experience achieving accreditation in 2011 for Belmont's audio engineering program from ABET (Accreditation Board for Engineering and Technology). Notably, this was the first time that ABET, a nonprofit organization that accredits college-level programs in applied science, computing, engineering, and engineering-technology, reviewed an audio-specific program.

A lively discussion followed that examined the differences in accreditation, certification, and licensure and offered many different perspectives on the incentives and logistics involved. One point of focus was whether the AES can or should play a role in academic accreditation or licensure. As some pointed out, the AES has never sought to directly certify or accredit audio engineering practitioners or programs, and it likely never will. However, others observed that the AES, which is already an active contributor to international standards and is chartered as a technical educational society, is well-qualified to be a "member society" or advisor to existing accrediting organizations like ABET and NASM. For the benefit of audio students, academic audio programs, and our industry as a whole, it may be important for the AES to develop consultative relationships with recognized accrediting bodies and thus contribute to educational quality-improvement processes already in place worldwide.

CONFERENCE SPONSORS

The conference benefited from the generous support of eleven sponsors, most of whom conducted daily product demos in the MTSU recording studios. API and SSL were in full force with many of their products on display and staff on hand. API featured a 1608 console and hands-on demonstrations with MTSU's Vision console in Studio A. Similarly, SSL demonstrated the school's Duality con-

sole in Studio B along with an AWS 924, a Matrix, and a full array of outboard gear. Meyer Sound provided sound reinforcement equipment for the workshop rooms and underwrote Bob McCarthy's keynote address and system optimization workshop. Paul Stewart from Genelec was present to demonstrate the 8260A DSP loudspeaker and GLM system. It was apparent to many of the educators who visited this demonstration that Genelec's AutoCal system provides functional and instructional benefits in a multi-use educational facility.

Waves representative Scott Pederson conducted plug-in demos in the postproduction lab. Meanwhile, Ben Loftis and Tim Hall from Harrison were in Studio A to demonstrate their Mixbus workstation, custom plug-ins, and 950mx analog mixing console. Prism Sound, represented by Frank Oglethorpe, presented its dScope test-and-measurement products along with the Orpheus Firewire interface and Maselec mastering compressor and equalizer in Studio B. Triad Orbit also displayed its line of innovative microphone stands and accessories.

The other corporate sponsors—Focal Press, Harman, NARAS P&E Wing, and Parsons Audio—did not conduct product demos but were vital contributors to the success of the conference.

SOCIAL EVENTS

All conference authors, delegates, and sponsors were invited to social events that took place on the three consecutive evenings of the conference. A banquet dinner on the opening night, included with conference registration, was sponsored by Solid State Logic. Attendees had a chance to socialize during a "happy hour" before AES President Frank Wells officially welcomed the attendees and recognized the conference keynote speaker Bob McCarthy. John Krivit, AES Education Committee chair, also made remarks about the importance of AES to the education community. Entertainment during the meal was provided by a lively duo of singer/songwriters, MTSU alumnae Rachel Pearl and Treva Blomquist.

The second evening's social event was a Nashville studio crawl sponsored by API. Two motor coaches transported the conference attendees to Nashville's Music Row for behind-the-scenes tours of Ocean Way Studios and the historic RCA Studio B. A catered barbecue dinner followed at the former RCA Studio A, now operated by Ben Folds as a semi-private facility known as "Ben's Studio." Studio manager Sharon Corbitt-House provided a fascinating history of RCA Studio A, including its origins, famous recordings, and the preservation and transformation of the physical space.

On the third evening, the conference closed with an optional excursion to Nashville's famous "Honky Tonk" district. Not all of the conference attendees participated in this trip but those who did had a great time. Delegates were delivered by bus to Lower Broadway, adjacent to the Cumberland Riverfront. From there, groups scattered to restaurants, clubs, and bars for food, refreshment, and live entertainment. Those who didn't get enough barbecue the night before opted for more at "Jack's," where the beef brisket, pork, chicken and all the fixin's are world famous for good reason. Others, including the conference planning committee and AES officers, opted for a more formal dining experience at The Southern Steak and Oyster. After dinner, everyone enjoyed live music on Broadway, Robert's Western World and the Full Moon Saloon were two of the favorites. Despite an unexpectedly strong rain shower, spirits were high and nobody missed the bus back to Murfreesboro.

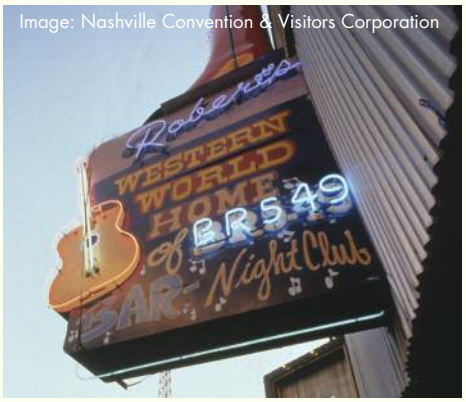


Image: Nashville Convention & Visitors Corporation

CONCLUSIONS

As David Scheirman noted in his paper presentation, "Ideally, to stay relevant, today's audio education programs will be in substantial alignment with industry best practices, and this will be especially important to program graduates who intend to practice professionally in the commercial fields of music production and sound reinforcement." It was very apparent from the number and enthusiasm of participants there are many hard working educators in a wide array of programs that share a common goal: to provide their students with quality educations that will set them on paths to successful careers in audio. These educators are hungry for support and collaboration in the relatively new field of audio education.

The AES 50th Conference provided a unique and unprecedented forum for dialogue about the relationships between academic audio programs, the commercial audio industry, faculty, students, and employers. The papers and workshops provided a crosssectional view of current educational practices, resources, insights, and opportunities for improvement. It's probably safe to assert that both educators and commercial practitioners bear significant responsibility for the current and future health and quality of the audio industry. Our current students have already reshaped the landscape of entertainment and media. We owe them the opportunity and responsibility to grow personally, intellectually, and technically in this evolving field. Educators interested in learning more can find all of the conference papers in the AES E-Library, join the Audio Educators group on Facebook, and participate in future Education Forums at AES conventions. Will there be another Audio Education Conference? We hope so, and 50th Committee members are willing to consider taking leadership positions again. joining with others who are also interested in participating.

Editor's note: a USB drive or downloadable PDF of the conference papers can be purchased online at www.aes.org/publications/conf.cfm