

SMPTE 2019 ANNUAL TECHNICAL CONFERENCE

Discover, Engage, Excel—A Reimagined Program and Special Space Day

The SMPTE 2019 Annual Technical Conference and Exhibition demonstrated the powerful ways in which creative and innovative technologies enable storytelling. Held on 21–24 October at the Westin Bonaventure Hotel & Suites in downtown Los Angeles, SMPTE 2019 attendees enjoyed a remarkable four days of conference sessions, presentations by leaders across the field of motion imaging, appearances by superstars of engineering and filmmaking, and first-of-a-kind networking and training opportunities.

With co-chairs SMPTE Education Vice President Sara J. Kudrle, and Thomas Edwards, vice president of engineering and development at Walt Disney Television, the redesigned conference for SMPTE 2019 featured concurrent sessions on Monday, Tuesday, and Wednesday,



SMPTE Membership Director Peter Wharton, Happy Robots, poses for a photograph with exhibitors Gene Zimmerman, Cobalt Digital, and Bil Apkar, TAG V.S.

with a curated selection of 40 technical paper presentations on topics including machine learning and



Audience in the exhibit hall look on as Annie Chang shares her story.

artificial intelligence (AI) in professional content creation; new compression techniques and implementations; putting SMPTE ST 2110 into practice; leveraging SMPTE ST 2110 for live production; cinema processing and projection technology; the cloud; advances



Storyteller Annie Chang, Universal Pictures.

in audio; standards-based security in collaborative media spaces; 8K, 4K, ultrahigh-definition (UHD), high dynamic range (HDR), and high frame rates (HFRs); perceptual color quality metrics; new production workflows; and access to the global community of technology.

In addition to a wealth of technical sessions and exhibitions of advanced technologies, SMPTE 2019 featured special events, including sponsored “pop-up” happy hours, that provided numerous opportunities for face-to-face interaction between attendees, exhibitors, and speakers.

After lunch on Monday, Tuesday, and Wednesday, attendees had the chance to join members of the SMPTE community for an exciting journey through their professional and personal experiences, inspiring life stories, and funny episodes. The speaker lineup for this new storytellers element of the conference included SMPTE visionaries, innovators, leaders, and developers who are trailblazers within the motion imaging industry. Storytellers included Paul Briscoe, Kelly White with Disney’s Rosie Program, Annie Chang with Universal Pictures, and Renard Jenkins with PBS.

Day 1: Monday

During the conference’s new Amazon Web Services (AWS) track, the AWS Media & Entertainment (M&E) Solutions Architect team led two advanced workshops, providing hands-on learning focused on how to design well-architected, serverless media solutions using AWS Elemental and AWS application program interface (API)-driven AI and machine-learning services.

For professionals looking to advance their audio education, the Audio Engineering Society (AES) workshop on Monday afternoon offered the opportunity to walk through the process of designing soundtracks for 5.1/7.1 movies and immersive sound movies, as well as designing and installing cinema and mixing stage sound systems.



Panelists on Monday provided attendees insight into maximizing their careers: (L-R) Moderator Bernard Weiser, Entertainment Industry Professionals Mentoring Alliance; Kylee Peña, Netflix; Jeri Palumbo, Sports and Entertainment; Ron Eng, Eng Sound Services; and Angela Zapata, Creative Technology Group.

Using real-world examples, panelists focused on the creative process of soundtrack design, as well as the fundamental engineering and design criteria for sound system design.

The annual Women in Technology Luncheon once again led to the SMPTE conference proceedings. Presented by HPA Women in Post and SMPTE, this year’s event featured Emmy Award-nominated filmmaker Pamela B. Green, co-founder, producer, and creative director with PIC Agency. Known for her work in feature films and motion graphics,

Green has directed and produced films including *Be Natural: The Untold Story of Alice Guy-Blaché*, a feature-length documentary about the first woman filmmaker.

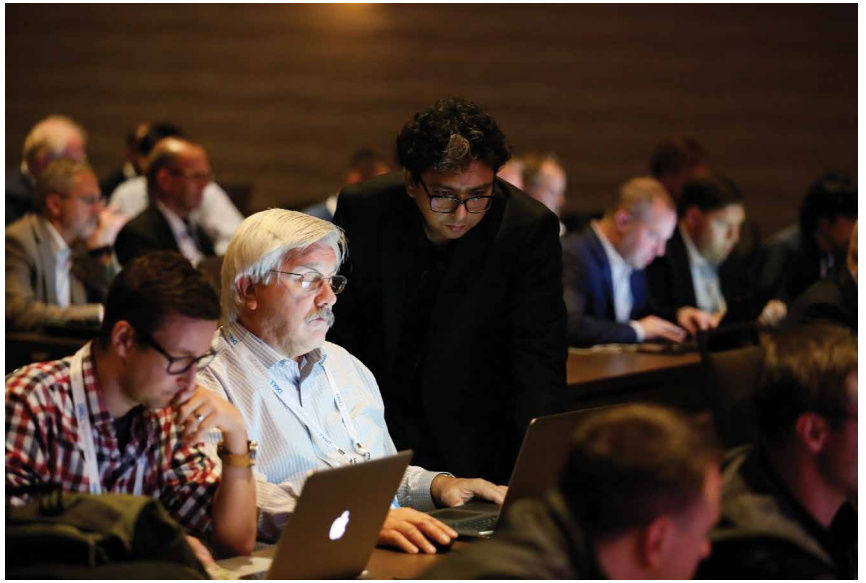
As the first day of the show wound down, the opening night BBQ gave attendees a chance to meet up with colleagues in a relaxed atmosphere for food, drinks, and merriment. In addition to friends, lawn games, and cold beer, the event featured unique entertainment provided by SMPTE’s jam band, “SMPTE Irresistible.”



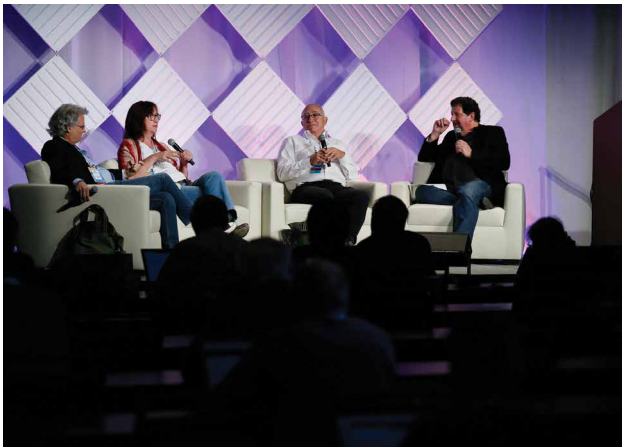
Brian Vessa discusses characteristics of today’s soundtracks during AES session.



Dey Provanshu, AWS.



Dey Provanshu helps attendee during the AWS workshop on Monday.



Panelists discuss Cinema Sound Experience on Monday afternoon. (L-R) Mark Mangini, Oscar-winning sound designer; Paula Fairfield, Game of Thrones sound designer; Randy Thom, Skywalker Sound, director of sound design; and moderator Brian Vessa, Sony Pictures.



Participants at the AWS workshop.



Women in Technology Luncheon: (L-R) Wendy Aylsworth, Walden Pond; Gary Morse, NTC; Margaret Craig, Signiant; Lisa Griffin, Signiant; and Laurie Morse, NTC.



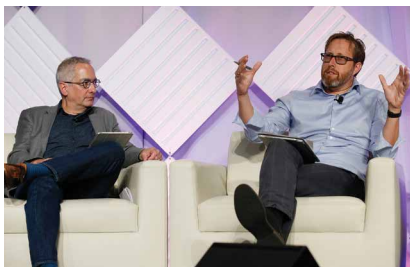
Women in Technology Luncheon: Loren Nielsen, Xperi (left), Pamela B. Green, PIC Agency (right).

Day 2: Tuesday

The day began with the SMPTE Annual General Meeting, where Barbara Lange, SMPTE Executive Director, spoke about the Society's recent work across standards, education, and membership. Lange talked about the progress SMPTE has made in creating and implementing its new three-year strategic business plan, described a series of new partnerships with other leading media technology conferences that extend SMPTE's impact and engagement worldwide, and outlined specific initiatives going on in terms of standards work—and the new ways in which that work is being done. Lange also outlined current and future educational initiatives, including an expanding array of expert-led SMPTE Virtual Classroom course offerings, and recognized the many volunteers across the Society who help make SMPTE a valuable resource for members worldwide.

Jim Helman, chief technology officer with Motion Pictures Laboratories (MovieLabs), presented the SMPTE 2019 keynote: "The Future of Media Creation." He described the findings documented in the white paper "The Evolution of Media Creation: A 10-Year Vision for the Future of Media Production, Post and Creative Technologies" recently released by MovieLabs and then moderated a panel discussion on the topic by studio executives.

"The reaction has really been very encouraging," Helman said of the white paper following his keynote presentation. "Pretty much



Jim Helman, MovieLabs and Jack Turner, Entertainment Technologies Inc.



Annual General Meeting: SMPTE President Pat Griffis (seated), SMPTE Executive Director Barbara Lange addresses attendees at the Annual General Meeting.



Annual General Meeting attendees.



New SMPTE Fellows: (L-R) SMPTE Past President Matthew Goldman, Sean McCarthy, Jeffrey Charles Riedmiller, Michael Overton, John J. Turner, James Patrick Snyder, Patricia Keighley, Gary Mandle, Andrew Rayner, Michael Douglas Smith, Peter T. Adamiak, Julian Pinn, Raymond Yeung, Brian A. Vessa, and SMPTE Executive Director Barbara Lange.

all of the cloud platforms, all of the major software tool vendors, the post houses, they all want to engage to try and help make this future a reality.” Looking ahead at the development of best practices, specifications, and standards, Helman noted that SMPTE would be a natural place, to do that work, particularly with its new technical specification approach.

SMPTE Fellows gathered once again for the annual Fellows Luncheon and the formal elevation of the 2019 class of Fellows. Fourteen new SMPTE Fellows were recognized and celebrated for their proficiency and contributions to the motion-picture, television, or related industries and their attainment of an outstanding rank among engineers or executives in M&E.

In another first for the Society’s annual technical conference, SMPTE offered a series of primers covering the fundamental concepts important to M&E. The primers were developed to focus on foundational concepts which, in turn, help event attendees better understand the technical presentations delivered throughout the conference. The primer series both introduced early-career professionals to a broader array of technical topics and afforded more experienced professionals the chance to refresh their knowledge of the



4K 4Charity runners.

critical fundamentals related to the motion-imaging field.

Day 3: Wednesday

Attendees were up at the crack of dawn on Wednesday morning for the second annual 4K 4Charity Run, sponsored by AWS Elemental. Founded in 2014 to support increased diversity and inclusion initiatives, the 4K 4Charity Fun Run Series is a 2.49-mile running and walking event held annually at major industry events including SMPTE’s annual conference. This year’s run benefited Girls Who Code (www.girlswhocode.com).

Day 4: Thursday—Special Space Day

A special daylong SMPTE program titled “Imaging Among the Stars:

The Moon, Mars, Deep Space, and Home Again” honored the 50th anniversary of the Apollo 11 mission. Sessions explored techniques for restoring and modernizing films of historic space missions and for creating realistic celestial environments for modern cinema.

Rodney Grubbs, manager of the National Aeronautics and Space Administration (NASA) Imagery Experts program, joined his colleague Dylan Mathis, communications manager for the International Space Station (ISS), in presenting the technical challenges of dealing with imaging in space. Their session included a landmark test by NASA and AWS of a workflow that marked the first use of cloud resources for data storage and video origination for streaming from space. The successful workflow allowed Grubbs and Mathis to conduct a live interview with NASA astronauts Christina Koch, Jessica Meir, and Andrew Morgan, who joined the conversation from the ISS, 250 miles above Earth.

The proof of concept at SMPTE 2019 expanded on the workflow NASA and AWS co-produced in 2017 to enable the first-ever live 4K UHD stream from space and now includes cloud-based media services for high-quality and secure live video transport, video origination and packaging, broadcast-grade live video processing, and content delivery networks.

Other luminaries who presented during “Imaging Among the Stars”



4K 4Charity Run: 1, 2, 3, go...



NASA astronauts: (L-R) Christina Koch, Jessica Meir, and Andrew Morgan.



Rodney Grubbs, NASA.



Astronaut Terry Virts.



Filmmaker Todd Douglas Miller.



Renard Jenkins, PBS, shares his story with audience on Thursday.

Virts, who actually filmed much of the footage for the beautiful IMAX film “Blue Planet” while on a long-duration space flight, spoke about the technology he used to shoot “One More Orbit” and about the challenges and rewards of making the film. “The excuse for the movie is the world record, but the real meaning of the movie is the environment,” Virts said. “We went over the North Pole, and there’s a lot of cracked ice and water, you know? So, we talk a lot about the environment and this organization, called the Carbon Underground, that’s taking carbon out of the atmosphere. We talk a lot about international cooperation—we had 10 different nations on this 10-person crew. Exploration kind of brings people together in a world that seems to be splitting apart. That was really the meaning of the movie.”

Honors and Awards Gala

Later in the day, industry leaders and innovators were honored at the SMPTE Awards Gala. Guests

included Todd Douglas Miller, the filmmaker behind the critically acclaimed “Apollo 11” moon landing documentary; Astronaut Col. Terry Virts, former commander on the ISS and director of “One More Orbit,” a documentary about how he broke the speed record for circumnavigating the globe; Josh

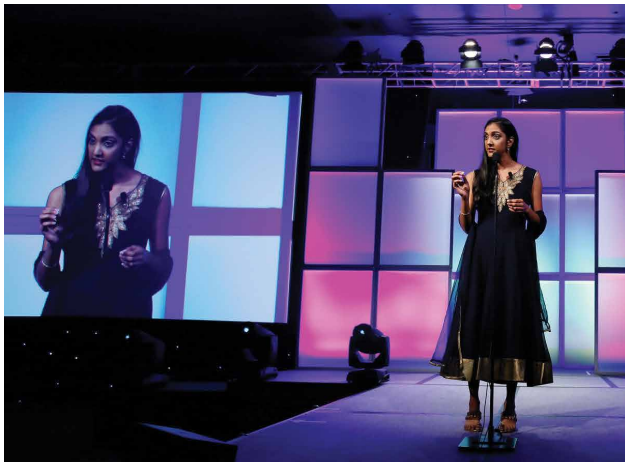
Winstead of AWS, an expert on the transmission and distribution of live images from the ISS to Earth; and visual effects artists James Schwalm and Ian Hunter, whose innovative techniques gave a unique photorealistic look to the Academy Award-winning biopic “First Man” (2017).



(L-R) SMPTE Education Vice President Sara Kudrle, Anne Aaron, recipient of Workflow Systems Medal, Leon D. Silverman, sponsor of the Workflow Systems Medal.



Cristina Gomila Torres, recipient of the Progress Medal.



Awards Gala host Kasha Patel.



(L-R) Sara Kudrle, 2019 Journal Award recipients Elizabeth Pieri and Jaclyn Pytlarz, and Sean McCarthy, 2018 Journal Award recipient.



SMPTE Past President Matthew Goldman and Paul Kellar, Honorary Membership recipient.



(L-R) Matthew Goldman, Pat Griffis, Steve Wozniak, and Barbara Lange.



Apple co-founder Steve Wozniak, presented the Fellows awards.



Roderick Snell, Honorary Membership recipient.

received red carpet treatment as they made their way to the reception, which was followed by dinner and the awards presentation in the California Ballroom. Kasha Patel, a digital storyteller at NASA Earth Observatory by day and a science comedian by night, hosted the gala. Silicon Valley icon and renowned philanthropist Steve Wozniak joined her as a presenter to help honor the 14 motion-imaging industry leaders newly elevated to SMPTE Fellow status.

“The Fellow awards are so important,” said Wozniak, who joined SMPTE as a new member following the conference. “I’ve been an engineer my whole life, and I always thought engineers were the most important people to moving society forward—and I still feel that way.”

Of the many awards presented during the gala, Honorary Membership is the Society’s highest



Oscar Eduardo Estrada Torrejon and Nicholas Peretti (center) recipients of the Student Paper Award, along with Catherine Meininger (left) and Ricardo Figueroa (right), 2018 Student Paper Award recipients and presenters.

accolade. This year’s recipients were Paul Kellar and Roderick Snell. Kellar was honored for being the leading inventor of a wide range of technologies and products in the areas of digital video processing, digital image storage, electronic graphics creation, still-image storage and processing, and image manipulation. Snell was recognized for his contributions and leadership, with more than 40 years as an author, broadcast engineer, and international consultant.

The Progress Medal, the most prestigious SMPTE award, was presented to Cristina Gomila Torres for her leadership and ongoing contributions to the motion-picture and media industry. Torres was one of four women—the most women honorees yet at the Awards Gala—to earn SMPTE medal awards this year. Michelle Munson earned the David Sarnoff Medal; Elizabeth Daly earned the Excellence in Education Medal; and Anne Aaron earned the Workflow Systems Medal.

The 2019 Student Paper Award was presented to Oscar Eduardo Estrada Torrejon and Nicholas Peretti, students from Rochester Institute of Technology, for their paper “Rotoscope Automation with Deep Learning.” The paper, which was also presented at the conference, will be published in the March 2020 issue of the *SMPTE Motion Imaging Journal*.

(Details on all of the SMPTE awards and honorees are available at 2019.smpte.org/home/gala.)

SMPTE 2019 was an “out of this world” experience, not just because it featured a live interview with NASA astronauts aboard the ISS. The events had amazing guest hosts including Steve Wozniak and Kasha Patel at the red-carpet Awards Gala, SMPTE honorees whose work is shaping our industry, an impressive array of expert speakers and presenters, a great showing of participants in the 4K 4Charity Fun Run, and much more. The event was a great success, and plans already are underway to engineer an equally successful conference for 2020.

In the meantime, full conference registrants have access to the presentations and technical papers from SMPTE 2019. Videos of sessions are also available to attendees and then to the general public in the last week of January. Subscribers to conference proceedings in the SMPTE digital library hosted on the IEEE Xplore platform will have access to the presentations and papers around the same time that the videos become available. Information about next year’s event is posted at www.smpte.org.

Videos of the conference sessions are available at 2019.smpte.org and on the Society’s YouTube channel.

