

2019 HPA Tech Retreat Program (subject to possible change)

Monday, February 11

11:00 am - 4:00 pm Registration Open

1:00 pm - 6:00 pm HPA TR-X - eSports: Dropping the Mic on Center Stage

Although eSports seemed to come out of nowhere to become a new driving force in year-round live events, it has been around for decades in one form or another. Find out from industry leaders why you need to pay attention to how video game publishers, eSports leagues, and live streaming services are transforming the live sports arena.

Registration for TR-X is included in the All-Access HPA Tech Retreat Package, and can also be purchased independent of the Tech Retreat.

1:00 pm - 1:15 pm Opening with TR-X Co-Chairs

Mark Chiolis, Mobile TV Group

Craig German, Amazon Web Services

1:15 pm - 1:35 pm Keynote

Yvette Martinez

For many of us, eSports snuck up to become a new driving force in year-round live events. But eSports has been around for decades in one form or another. Find out from an industry leader why you need to pay attention to how video game publishers, eSports leagues, and live streaming services are evolving the live sports arena.

1:35 pm - 1:55 pm Leveling the eSports Playing Field: Put Us In, Coach!

Josh Rizzo

eSports is exploding and is poised to establish a real place on the main stage, with vibrant interest from the entire spectrum of participants, from individual gamers and leagues, to the world's largest sports and media companies. It's estimated that by 2020, the eSports market will be \$1.5B from sponsorships and advertising, with an estimated global audience of just over 600 million fans. Listen to an industry thought leader as they share their insights on where technologists should be playing.

1:55 pm - 2:35 pm Technical enablement: The Metal Behind the Medal

Moderator: Mark Chiolis, Mobile TV Group

Thomas Burns, Dell

Eliot Sakhartov, Microsoft

Josh Rizzo

Adam Myhill, Unity

From what we call state of the art today, take a look forward to what tomorrow will bring. While advances in technology continue to power the rise of eSports as a global entertainment sports phenomenon, players, leagues, and the technology industry are aggressively pushing its evolution into even more exciting directions. Trends like immersive play with AR and VR, upgraded venue and stadium technologies, advanced display technologies, and crossover with mainstream sports put the onus on manufacturers, designers, system integrators, and the entire industry ecosystem to collaborate. Growth, innovation, and execution: Where are they headed? Are you ready to play?

2:35 pm - 2:50 pm Beat the Clock – ROUND 1!

Moderator: Mark Chiolis, Mobile TV Group

Tom Sahara, Turner Sports

Darrell Wenhardt, CBT Systems
Michael Little, Artistic Resources Corp
Adam Myhill, Unity
Jay Tucker, UCLA Center for Media, Entertainment & Sports

Five people in the know have EXACTLY 2:30 (exactly) to say where the industry is today in a variety of key areas.

2:50 pm - 3:05 pm Refreshment Break - Sponsored by Dolby

3:05 pm - 3:45 pm eSports Pipeline of the Future: Could eSports Unseat America's Biggest Sports Event?

Moderator: Jason Dachman, SVG
Tom Sahara, Turner Sports
Mitch Rosenthal, Riot Games
Marc Scarpa, Simplynew
Marc Genin, Gearhouse Broadcast CORP

We've assembled a top ranked group of eSports business and operations executives to talk about today's workflows, what's working and what can be improved, and what thoughts are dancing in their heads ready to be unleashed on their technology teams for the benefit and enjoyment of the next generation of eSports players and fans.

3:45 pm - 4:25 pm Are You Ready for the Challenge?

Moderator: Jason Dachman, SVG
Ray Panahon, Riot Games
Lowell Kay, LJK Consult
Mike Ulaky, ESL
Shawn Hendrix, Poker Productions

How will we realize this future vision for eSports? Representatives from leagues, teams, and industry thought leaders share an insider's look at what technologies are in development, what is almost here, and what the cornerstones of today's live eSports events are. We'll hear how these companies work as a team to design and build today's workflows and tomorrow's new showcase arenas to attract the new breed of sports enthusiast.

4:25 pm - 5:10 pm Preparing an industry for its future: The University/Student Panel

Moderator: Dakota Maysonet, Yellowpike Media
Keanu Concepcion, USC
Arnold Ha, USC
Jay Tucker, UCLA Center for Media, Entertainment & Sports

A growing number of top universities and colleges offer established programs in eSports/eGaming, and many more have it on their list of things to do, sooner rather than later. Faculty and students from top eSports schools will share the eSports curriculum of the future and the novel ways in which instructors, players, and "scouts" are incorporating this burgeoning industry into today's new course lineup.

5:10 pm - 5:20 pm Beat the Clock - ROUND 2!

Moderator: Mark Chiolis, Mobile TV Group
Tom Sahara, Turner Sports
Darrell Wenhardt, CBT Systems
Michael Little, Artistic Resources Corp
Adam Myhill, Unity
Jay Tucker, UCLA Center for Media, Entertainment & Sports

Our five experts from Round 1 have EXACTLY 2:00 each to give us their closing observations on the thought leadership of the day, as well as one parting thought for us to take away as we prepare to become eSports players.

- 5:20 pm - 5:30 pm Co-Chairs Close
 - Mark Chiolis, Mobile TV Group
 - Craig German, Amazon Web Services
- 5:30 pm Official End of Program
- 5:30 pm - 6:00 pm Overtime: Post-Game Analysis

Tuesday, February 12

- 8:00 am - 6:30 pm Registration Open
- 9:00 am - 5:30 pm HPA Supersession: Industry Climate Change is Real; Are Snowflake Workflows Melting?
 - As HDR, UHD and cloud based workflows converge, is the industry heading to a more predictable way to make high quality content? This year's Supersession will explore how filmmakers, content creators, tool developers and service providers are pushing the boundaries to streamline the production, post and delivery of unprecedented amounts of content at unprecedented levels of quality and complexity. Get deep in the drift about what's happening now and a forecast for the winds of change.
- 9:00 am - 9:05 am Open and Welcome
 - Seth Hallen, Pixelogic
- 9:05 am - 9:25 am Keynote: Next Generation Production
 - Sean Cooney, Netflix
- 9:25 am - 10:25 am Dolby presents "Expanding Creative Freedom for Filmmakers: How HDR is Changing Production Workflows"
 - Moderator: Barry Goch, postPerspective
 - Tom Graham, Dolby Laboratories
 - Lisa Rodgers, Bird Box
 - Marcus Taormina, Bird Box
 - Sean Coleman, Company 3
 - Don Burgess, ASC
 - Corinne Bogdanowicz, Light Iron
 - Mike Morgan, Netflix

HDR and wide color gamut open an exciting new frontier in storytelling. With a vast selection of HDR devices available, more productions are looking to leverage those capabilities and the creative opportunities they offer—both on-set and throughout the post production process. This panel brings together creative talent from two productions as they discuss how color management is changing and offer different approaches to HDR color grading workflows.

- 10:25 am - 10:45 am Refreshment Break - Sponsored by:
 - Adobe
 - Avid
 - Blackmagic Design
 - Salesforce
 - Weka IO
 - Western Digital

WhDiYo Digital

10:45 am - 11:45 am Dolby presents “Immersive Audio: The Future of Storytelling”

Moderator: Randi Altman, postPerspective

Carlos A. Morales, ROMA

Skip Lievsay, ROMA

Sergio Diaz, ROMA

Scott Kramer, Netflix

David Gould, Dolby

Object based audio is driving immersive storytelling across all types of content. Embraced by cinema for several years, support have proliferated across televisions, soundbars, and mobile devices, providing new opportunities for immersive experiences in the home. What does this mean for the creative process? How do advances in sound formats further the creative vision of directors? This panel of talent and industry experts will discuss their work on Netflix’s ROMA, including the techniques used on-set, their workflows in the studio and how they are creating more compelling storytelling through sound.

11:45 am - 12:10 pm Comparing Next Gen vs. Broadcast Production Workflows

Phil Squyres, Sony Pictures TV

Each type has developed unique approaches to workflow. Before quoting specific metrics from 3 sample productions (Broadcast, Cable & OTT) we will point out a number of basic differences that help to define these three type of productions. We will, then, review the specific types of creative talent that tend to gravitate to each type of production and how those experiences and tendencies can influence aspects and the workflows of each type. Finally we will show specific metrics (schedules, storage needs, & tendencies towards certain practices) comparing and defining how each type has a workflow that differs from the other.

12:10 pm - 1:10 pm Lunch

1:10 pm - 1:30 pm Automatic for the (Creative) People

Rich Welsh, Sundog Media Toolkit

Snowflakes are process driven. Harnessing better automation and cleverer robots doesn’t signal the end to creativity. Looking at the opportunities new technologies such as cloud and AI afford us, we’ll hopefully see a bright future for the creative process.

1:30 pm - 2:30 pm Content Creation in the Cloud: It’s Not Fake News!

Eliot Sakhartov, Microsoft

Ian Main, Teradici

Kevin Ottomeyer, Teradici

Jason Schleifer, Nimble Collective

Mike Walsh, Nimble Collective

David Benson, Bebop Technology

Craig Dwyer, Avid

Richard Duke, Avid

It’s always hard to separate the hype from the reality with any technology, and cloud is no different. Come see live demonstrations of how content workflows have actually migrated to the cloud – no mirrors, no sleight of hand. First, you’ll see how Teradici overcomes the cloud latency challenge to put remote computing in the hands of creative professionals. Next, you’ll get an up-close look at what Nimble Collective has

done to revolutionize the animation community in a way they could only accomplish in the cloud. But that's not all! For those in our community who have developed their entire careers on Avid or Adobe, BeBop will demonstrate how you can keep using the tools you know and love while leveraging the power of cloud compute, storage, and distribution. And finally, you'll see what Avid has up their sleeve when it comes to collaboration. For everyone who is stuck on the myth that your kit has to live in your post suite, this session is for you!

2:30 pm - 3:10 pm Virtual Production: Its Once and Future Destiny

Jesse Korosi, Sim
Eliot Mack, Lightcraft
Scott Metzger, Nurulize
Colin Green, Digital Monarch Media

During this session we will be taking a look into how virtual production technology, once the sole province of tent-pole features, is now impacting project development across many genres, allowing writers, producers and directors to visualize the tone, pacing and style of their content well in advance of production. Filmmakers and show runners are now discovering the value in having real time camera tracking, keying and compositing live on set, and at an affordable price.

3:10 pm - 3:30 pm Refreshment Break - Sponsored by:

Adobe
Avid
Blackmagic Design
Salesforce
Weka IO
Western Digital
WhDiYo Digital

3:30 pm - 4:30 pm AI Applications

Don Eklund, Sony Pictures
Jason Brahms, Video Gorillas
Kenny Lauer, Rival Theory
Richard Zhang, Adobe

AI and machine learning are showing potential in a wide range of applications for the entertainment industry. Computers can create useful synthetic audio visual output based on "training" a system with input that humans would consider inferior or incomplete. Sound synthesis, sharpening, noise reduction, colorization and more have been demonstrated and force us to re-imagine what is possible. This panel of experts will share their experience and give hints about what we can expect in the future.

4:30 pm - 4:45 pm Next-Gen Threats & Next-Gen Solutions for Content Security: A Case Study

Guy Finley, CDSA
Ben Stanbury, Amazon Studios

Next-Gen content production has attracted sophisticated, next-gen security threats from determined and savvy hackers. Some of these threats have become reality, causing significant damage to content owners and productions facilities. Guy Finley (TPN and CDSA) and Ben Stanbury (Amazon and TPN) will present a case study of a sophisticated content hack/security breach and discuss how content owners and facilities can be better prepared to mitigate the risks of an attack. The Trusted Partner Network (TPN) was

developed to meet threats with next gen security solutions and represents an important industry effort to leverage technology, platform and community to transform a year's old process into the next generation of production.

4:45 pm - 5:25 pm The Future: When and Where Content Meets Technology

Eliot Sakhartov, Microsoft

Matt Jones, Ola Cabs

Scott Bounds, Microsoft

Field Garthwaite, Iris TV

The day has been filled with what is happening today. But what about 5 years from now? How do we lay the groundwork for collaboration, personalization and consumption in the future. Scott Bounds, Media Solutions Architect from Microsoft will discuss the future of collaboration through the use of cloud and others. Next Field Garthwaite, co-Founder and CEO of Iris TV, will talk about the power of personalized content and how this drives attentive and loyal audiences. Finally Matt Jones former Director of Future Technology at Jaguar Land Rover, will lead a dive into what the future of consuming content looks like in a world where Uber and autonomous vehicles free up our time. For anyone and everyone that is interested in the future of media.

5:25 pm - 5:30 pm What Just Happened? A Review of the Day by Jerry Pierce & Leon Silverman

5:30 pm - 8:00 pm Innovation Zone with Cocktails (dedicated demo time):

Adobe, AJA Video Systems, Arvato Systems, ATTO Technology, Avid Technology, AWS Amazon, axle ai, Canon USA, CineCert, Cinnafilm, Colorfront, Creative Solutions, Delair, Digital Anarchy, DigitalGlue, Dolby Laboratories, EditShare, Eizo, Eluvio, Emotion Systems, FilmLight, G&D North America, GrayMeta, G-Technology, Image Essence, intoPIX, Marquise Technologies, Microsoft, Moxion, Nagra, Nevion, Omnitek, OWNZONES Entertainment Technologies, Pixelworks, Prime Focus Technologies, Quantum, Rohde & Schwarz, Root6, Salesforce, Signiant, Sohonet, Sony Electronics, SRI International, Streambox, The Studio-B&H, Teledyne LeCroy, Telestream, Teradici, Variant Systems Group, Xperi

Wednesday, February 13

7:00 am - 7:00 pm Registration Open

7:30 am - 8:30 am Breakfast Roundtables

1. Saving large amounts of data at low costs, Meghan McClelland, Versity
2. Object storage and analytics/hybrid cloud, Erik Weaver, Western Digital
3. M&E cloud: challenges and solutions, Anthony Howe, Microsoft Azure
4. Immersive audio: separating fact from fiction, Ken Tankel, Linear Acoustic
5. Academy Digital Source Master Spec based on IMF App 5 ACES, Wolfgang Ruppel, RheinMain U.
6. HDMI 2.1 and DisplayPort, Pete Putman, ROAM Consulting
7. AI for film restoration, Jason Brahms, Video Gorillas
8. Workflow for production lifecycle: story to screen, Roger Vakharia, Salesforce
9. Microservices & media: made for each other? Chris Lennon, MediAnswers; John Footen, Deloitte
10. IT challenges in the wake of a media merger, Kevin Scott, Signiant
11. Implementing IMF for broadcast & online: a DPP update, DPP & Mr MXF
12. Immediates: the value of dailies a day earlier, Hugh Calveley, Moxion
13. SFP-based SMPTE 2110 systems, Roy Folkman, Embrionix

14. Diverging strategies for media processing deployment, Max Denton, Telestream
15. Cloud IMF workflows, Adrian Goman, Ownzones Connect
16. OTT video quality optimization, Ernie Sanchez, Cinnafilm
17. HDR aesthetics: let's talk about the shadows, Greg Ciaccio, Sim
18. Workflow storage: Ethernet or Fibre Channel? Carllene Mowry, ATTO Technology
19. eSports production, Michael Little, Artistic Resources Corporation
20. Why buying "best" might not be good enough, Josh Rizzo, technologist
21. Automated distribution servicing for 'TV Everywhere,' Lior Berezonski, Prime Focus
22. Media management and asset protection, Robert Herzan, Scale Logic
23. Too many AIs: how to compare & select, Jim Tierney, Transcriptive.com
24. Beyond SMPTE time code: the TLX project, Peter Symes, Symes TV Consulting
25. VFX: what is next? Anthony Magliocco, EMTM
26. Secure cloud collaboration, Rollo Wenlock, Wipster
27. Remote HDProxy editing for Premiere, Thomas Mauro, Arvato Systems
28. Trusted Partner Network security assessment: Tips for Preparing, Juan Reyes, Convergent Risks
29. Intra-file editing, John Harris, Cinedeck
30. Intra-file editing: user experience, Matthew Schneider, Technicolor-PostWorks New York
31. Remote collaborative production session, Chuck Parker, Sohonet
32. HDR: the haves and the have nots, Gregory Cox, GrayMeta

8:30 am - 7:30 pm Innovation Zone open for appointments
See program below for dedicated Innovation Zone hours

8:30 am - 8:45 am Breathe

8:45 am - 8:55 am Welcome
Seth Hallen, HPA

8:55 am - 9:15 am Introduction & Technology Year in Review
Mark Schubin

9:15 am - 10:00 am Washington Update
Jim Burger, Thompson Coburn LLP

A lot has happened in the legislative/regulatory/legal world since last year. How does it affect you? Find out from our resident expert.

10:00 am - 10:30 am Deep Fakes
Moderator: Debra Kaufman, ETCentric
Marc Zorn, HBO
Ed Grogan, Department of Defense
Oles Petriv, Video Gorillas

It might seem nice to be able to use actors long dead, but the concept of "fake news" takes a terrifying new turn with *deepfakes*, the term that Wikipedia describes as a portmanteau of "deep learning" and "fake." Although people have been manipulating images for centuries – long before the creation of Adobe Photoshop – the new AI-powered tools allow the creation of very convincing fake audio and video. We'll show examples of deep fakes, describe how they're created, and ask if and how content distributors can guard themselves from being purveyors of fake news.

10:30 am - 10:45 am Refreshment Break

10:45 am - 11:00 am The Netflix Media Database
Rohit Puri, Netflix

An optimized user interface, meaningful personalized recommendations, efficient streaming and a high-quality catalog of content are the principal factors that define the end-user Netflix experience. A myriad of business workflows of varying complexities come together to realize this experience. Under the covers, they use computationally expensive computer vision, audio processing and natural language processing based media analysis algorithms. These algorithms generate temporally and spatially dynamic metadata that is shared across the various use cases. The Netflix Media DataBase (NMDB) is a multi-tenant, data system that is used to persist this deeply technical metadata about various media assets at Netflix and that enables querying the same at scale. NMDB is built using the best practices of the Netflix micro-services framework. NMDB uses concepts from SMPTE IMF and ISO BMFF to efficiently model the media timeline across a vast category of use-cases, enabling a uniform search and mining interface. The “shared nothing” distributed database architecture allows NMDB to store large amounts of media timeline data, thus forming the backbone for various Netflix media processing systems.

- 11:00 am - 11:30 am AI Film Restoration at 12 Million Frames per Second
Jason Brahm, Video Gorillas
- 11:30 am - noon Is More Media Made for Subways than for TV and Cinema? (And Does It Make More \$\$\$?)
Andy Qusted, BBC
- noon - 1:58 pm Lunch (dedicated Innovation Zone time)
- 1:58 pm - 2:00 pm Quiz answer & announcements
- 2:00 pm - 2:30 pm Broadcasters Panel
Moderator: Matthew Goldman, MediaKind
Del Parks, Sinclair Broadcast Group
Skip Pizzi, National Association of Broadcasters
Dave Siegler, Cox Media Group and Pearl TV
Richard Friedel, FOX
- 2:30 pm - 2:50 pm CES Review
Peter Putman, ROAM Consulting
Once again, Pete Putman traveled to Las Vegas to see what's new in the world of consumer electronics.
- 2:50 pm - 3:15 pm 8K: Whoa! How'd We Get There So Quickly?
Peter Putman, ROAM Consulting
- 3:15 pm - 3:20 pm Issues with HDR Home Video Deliverables for Features
Josh Pines, Technicolor
- 3:20 pm - 3:35 pm Refreshment Break
- 3:35 pm - 5:20 pm HDR “Mini” Session
- 3:35 pm - 3:40 pm HDR Intro
Seth Hallen, Pixelogic
- 3:40 pm - 4:00 pm Ambient Light Compensation for HDR Presentation
Don Eklund, Sony Pictures Entertainment
- 4:00 pm - 4:20 pm 4K HDR in Anime
Haruka Miyagawa, Netflix
- 4:20 pm - 4:40 pm Pushing the Limits of Motion Appearance in HDR
Richard Miller, Pixelworks
- 4:40 pm - 5:20 pm Downstream Image Presentation Management for Consumer Displays

Moderator: Michael Chambliss, International Cinematographers Guild
Richard Smith, Netflix
Chris Clark, Netflix
Annie Chang, UHD Alliance
Steven Poster, ASC, International Cinematographers Guild
Toshi Ogura, Sony

Last year's discussion of image presentation management for consumer displays further fueled efforts toward solving the challenge of conveying creative intent. This year's session shines a light on the latest developments by delving into Sony's and Netflix's pioneering, joint consumer deployment "calibrated mode" and the UHD Alliance's viewpoint and work and by analyzing the next steps that need to be taken in order to achieve a consumer-friendly, industry-wide approach.

For consumers upgrading to 4K televisions, the desire for better picture quality (39% according to Futuresource Consulting's May 2018 report) is second to only to the desire for a larger screen in the home (45%, same report). UHD has been credited with lifting the trade value of the consumer television market by \$85 billion in 2018, alone. The need to deliver on the promise of UHD to consumers is real for content creators, distributors, and display manufacturers, and defining image quality for the consumer is a critical part of this picture.

5:20 pm - 5:45 pm Solid Cinema Screens with Front Sound: Do They Work?
Julien Berry, Delair Studios
Jean-Philippe Jacquemin, Barco

Direct-view displays bring high image quality in the cinema but suffer from low pixel fill factor which can lead to heavy moiré and aliasing patterns. Cinema projectors have a much better fill factor which avoids most of those issues even though some moiré effect can be produced due to the screen perforations needed for the audio. With the advent of high contrast, EDR, and soon HDR image quality in cinema, it was noticed that the screen perforations have an effect on the perceived brightness and contrast from the same image, though the effect has never been quantified since some perforations had always been needed for cinema audio. Now that high quality cinema audio systems are available which are not requiring screen perforations, it appears necessary to quantify this effect.

In addition to luminance measurements, we are evaluating the perception of brightness in HDR using half-plain/half-perforated screens and two projectors, allowing projector power levels to be adjusted to achieve perceptible matches, therefore allowing the effect of perforations on brightness perception to be quantified. Contrast ratio measurement data will be provided and discussed as well.

5:45 pm - 6:00 pm What Just Happened? A Review of the Day by Jerry Pierce & Leon Silverman
6:00 pm - 7:30 pm Innovation Zone Open (dedicated demo time)
7:30 pm - 9:30 pm Welcome Dinner

Thursday, February 14

7:15 am - 5:30 pm Registration Open
7:30 am - 8:30 am Breakfast Roundtables
1. Scalable metadata, Meghan McClelland, Versity

2. Why object storage for M&E? Erik Weaver, Western Digital
3. M&E cloud: challenges and solutions, Anthony Howe, Microsoft Azure
4. Immersive audio: separating fact from fiction, Ken Tankel, Linear Acoustic
5. Intra-file editing, John Harris, Cinedeck
6. 8K: Really? Pete Putman, ROAM Consulting
7. Washington update follow-up, Jim Burger, Thompson Coburn
8. Collaboration in movie production & marketing, Roger Vakharia, Salesforce
9. NABA, DPP, IMF, and content delivery, Chris Lennon, MediAnswers
10. Right sizing media services in the cloud, Ian Hamilton, Signiant
11. Implementing IMF for broadcast & online: a DPP update, DPP & Mr MXF
12. Immediates: the value of dailies a day earlier, Hugh Calveley, Moxion
13. SFP-based SMPTE 2110 systems, Roy Folkman, Embrionix
14. Diverging strategies for media processing deployment, Max Denton, Telestream
15. Studio-in-the-cloud via IMF, Aaron Sloman, Ownzones Media Network
16. Complex workflows in the cloud, Lance Maurer, Cinnafilm
17. Component Distribution via IMF, Brian Holter, Fox Media Services
18. IMSC subtitles for online distribution, Dave Kneeland, Fox, & Pierre Lemieux, Sandflow
19. eSports venue, Michael Little, Artistic Resources Corporation
20. NVMe fast storage, faster fabrics, Carllene Mowry, ATTO Technology
21. Who watches eSports, where, and why? Josh Rizzo, technologist
22. Agile production workflow & QC, Christine Sears, Salesforce
23. Automated distribution servicing for 'TV Everywhere,' Lior Berezonski, Prime Focus
24. Media management and asset protection, Robert Herzan, Scale Logic
25. Standardized cloud workflows for film/TV production, Mark Turner, MovieLabs
26. Too many AIs: how to compare & select, Jim Tierney, Transcriptive.com
27. Beyond SMPTE time code: the TLX project, Peter Symes, Symes TV Consulting
28. VFX: what is next? Anthony Magliocco, EMTM
29. De-risking post-production review, Rollo Wenlock, Wipster
30. Remote HDProxy editing for Premiere, Thomas Mauro, Arvato Systems
31. Protecting your valuable content, Patrick Sumbly, Sohonet
32. ACESclip: what should a color metadata standard look like? Chris Clark, Netflix

8:30 am - 2:00 pm Innovation Zone open for appointments.

See program below for dedicated Innovation Zone hours

8:30 am - 8:43 am Breathe

8:43 am - 8:45 am Quiz answer & announcements

8:45 am - 9:10 am A Study Comparing Synthetic Shutter and HFR for Judder Reduction

Ianik Beitzel, ARRI and Stuttgart Media University (HdM)

Aaron Kuder, ARRI and Stuttgart Media University (HdM)

9:10 am - 9:30 am Using Drones and Photogrammetry Techniques to Create Point Cloud Scenes

Eric Pohl, Singularity Imaging

Drone aerial photography may be used to create multiple geotagged images that are processed to create a 3D point cloud set of a ground scene. The point cloud may be used for production previsualization or background creation for videogames or VR/AR new-media products.

9:30 am - 10:15 am Remote and Mobile Production Panel

Moderator: Mark Chiolis, Mobile TV Group

Wolfgang Schram, PRG
Scott Rothenberg, NEP
Nick Garvin, Mobile TV Group

With a continuing appetite for content from viewers of all the major networks, as well as niche networks, streaming services, web, eGames/eSports, and venue and concert-tour events, the battle is on to make it possible to watch almost every sporting and entertainment event that takes place, all live as it is happening. Join these key members of the remote and mobile community talking about what's new for this area and what the workflows are behind the content production and delivery in today's fast-paced environments. Expect to hear about new REMI applications, IP workflows, AI, UHD/HDR, eGames, and eSports.

10:15 am - 10:30 am Refreshment Break

10:30 am - 11:00 am IMSC 1.1: A Single Subtitle and Caption Format for the Entertainment Chain
Pierre-Anthony Lemieux, Sandflow Consulting (supported by MovieLabs)
Dave Kneeland, Fox

IMSC is a W3C standard for worldwide subtitles/captions, and the result of an international collaboration. The initial version of IMSC (IMSC 1) was published in 2016, and has been widely adopted, including by SMPTE, MPEG, ATSC, and DVB. With the recent publication of IMSC 1.1, we now have the opportunity to converge on a single subtitle/caption format across the entire entertainment chain, from authoring to consumer devices. IMSC 1.1 improves on IMSC 1 with support for HDR, advanced Japanese language features, and stereoscopic 3D. Learn about IMSC's history, capabilities, operational deployment, implementation experience, and roadmap -- and how to get involved.

11:00 am - 11:30 am ACESNext and the Academy Digital Source Master: Extensions, Enhancements, and a Standardized Deliverable

Andy Maltz, Academy of Motion Picture Arts & Sciences
Annie Chang, Universal Pictures, moderator
Joachim Zell, EFILM
Dr. Wolfgang Ruppel, RheinMain University

This session will cover the latest, exciting updates happening with the Academy Color Encoding System (ACES). The ACESNext effort has been kicked off with a new project structure, roadmap and several timely projects that are evolving ACES into THE industry-standard platform for color-managed workflows and final deliverables. The Academy Digital Source Master (ADSM), a standards-based, master-level file format designed for delivery and archiving, will also be covered in-depth.

11:30 am - noon Mastering for Multiple Display and Surround Brightness Levels Using the Human Perceptual Model to Insure the Original Creative Intent Is Maintained

Bill Feightner, Colorfront

Maintaining a consistent creative look across today's many different cinema and home displays can be a big challenge, especially with the wide disparity in possible display brightness and contrast as well as the viewing environments or surrounds. It is not practical to have an individual creative session for every possible combination. Even if this were to be done, maintaining creative consistency would be very difficult at best.

By utilizing the knowledge of how the human visual system works, the perceptual model, processing source content to fit a given displays brightness and surround can be

automatically applied while maintaining the original creative intent with little to no trimming.

noon - 1:58 pm Lunch and Final Innovation Zone Time (dedicated demo time)

1:58 pm - 2:00 pm Quiz answer & announcements

2:00 pm - 2:45 pm Cloud: Where Are We Now?

Moderator: Erik Weaver, Western Digital

Tim Claman, Avid

Buzz Hays, Google

Marco Rota, Microsoft

2:45 pm - 3:15 pm Digitizing Workflow - Leveraging Cloud Platform for Success

Roger Vakharia & Christine Sears, Salesforce

While the business of content creation hasn't changed much over time, the technology enabling processes around production, digital supply chain and marketing resource management among other areas have become increasingly complex. Enabling an agile, platform-based workflow can help in decreasing time and complexity but cost, scale and business sponsorship are often inhibitors in driving success. Driving efficiency at scale can be daunting but many media leaders have taken the plunge to drive agility across their business process. Join this discussion to learn best practices, integrations, workflows and techniques that successful companies have used to drive simplicity and rigor around their workflow and business process.

3:15 pm - 3:30 pm Refreshment Break

3:30 pm - 3:55 pm Leveraging Machine Learning in Image Processing

Rich Welsh, Sundog Media Toolkit

How to use AI (ML and DL networks) to perform "creative" tasks that are boring and humans spend time doing but don't want to (working real world examples included).

3:55 pm - 4:20 pm Leveraging AI in Post Production: Keeping Up with Growing Demands for More Content

Tim Converse, Adobe

Expectations for more and more content are continually increasing – yet staff sizes remain the same or only marginally bigger – how can advancements from machine learning help content creators? AI can be an incredible boon to remove repetitive tasks and tedious steps allowing humans to concentrate on the creative; ultimately AI can provide the one currency creatives yearn for more than anything else: Time.

4:20 pm - 5:20 pm Deploying Component-Based Workflows: Experiences from the Front Lines

Moderator: Pierre-Anthony Lemieux, Chairman, IMF User Group

Lucas Carboni, Fox

Greg Geier, Sony Pictures

Chris Fetner, Netflix

Jack Wenzinger, Amazon

Benjamin Sos, Disney

The content landscape is shifting, with an ever-expanding essence and metadata repertoire, viewing experiences, global content platforms and automated workflows. Component-based workflows and formats, such as the Interoperable Master Format (IMF) standard, are being deployed to meet the challenges brought by this shift. Come and join us for a first-hand account from those on the front-lines.

5:20 pm - 5:45 pm Content Rights, Royalties and Revenue Management via Blockchain

Adam Lesh, SingularDTV

The Blockchain Entertainment Economy: adding transparency, disintermediating the supply chain, and empowering content creators to own, manage and monetize their IP to create sustainable, personal and connected economies.

As we all know, rights and revenue (including royalties, residuals, etc.) management is a major pain point for content creators in the Entertainment Industry. As one recent producer put it: “The process is to cut a deal with a studio, make the movie, release the movie, file a lawsuit, resolve the lawsuit, and then get paid.”

Tokens and smart contracts offer an elegant means to solve that problem. We will explore tokenomic models that do away with accounting opacity and streamline rights, royalties and revenue management thereby freeing content creators to do what they do best.

5:45 pm - 6:00 pm What Just Happened? A Review of the Day by Jerry Pierce & Leon Silverman

Friday, February 15

7:15 am - noon Registration Open

7:30 am - 8:30 am Breakfast Roundtables

1. Cloud-storage cost models and gateways, Meghan McClelland, Versity
2. IMF API for locating assets, Bruce Devlin, Mr MXF
3. Carrying on the Tradition: Karl Paulsen and Merrill Weiss Question One Another
4. Blockchain & entertainment: a deeper dive, Adam Lesh, SingularDTV
5. IMSC subtitles for online distribution, Dave Kneeland, Fox
6. IMF at Netflix, Florian Schleich, Netflix
7. The war for attention: winning strategies for OTT success, Christine Sears, Salesforce
8. VFX: what is next? Anthony Magliocco, EMTM
9. Remote HDProxy editing for Premiere, Thomas Mauro, Arvato Systems
10. Drones (UAVs) and photogrammetry, Eric Pohl, Singularity Imaging
11. Deep fakes, Ed Grogan

8:30 am - 8:43 am Breathe

8:43 am - 8:45 am Quiz answer & announcements

8:45 am - 9:10 am SMPTE Update

Barbara Lange, SMPTE

9:10 am - 9:30 am Beyond SMPTE Time Code: The TLX Project

Peter Symes, Symes TV Consulting

SMPTE Time Code, ST 12, was developed and standardized in the 1970s to support the emerging field of electronic editing. It has been, and continues to be, a robust standard; its application is almost universal in the media industry, and the standard has found use in other industries. However, ST 12 was developed using criteria and restrictions that are not appropriate today, and it has many shortcomings in today's environment.

A new project in SMPTE, the Extensible Time Label (TLX) is gaining traction and appears to have the potential to meet a wide range of requirements. TLX is designed to be transport-agnostic and with a modern data structure. Key to the design is a structure of self-identifying TLX Items, each representing data and metadata for a particular attribute such as time or equipment identification, and TLX Profiles specifying requirements and/or constraints for each application. As the title indicates, the proposed standards will

incorporate a mechanism for adding additional TLX Items and TLX Profiles as new applications emerge.

The work is still in the development phase, and we would like the opportunity to present the concepts to the HPA professionals and garner feedback and more application information.

9:30 am - 9:50 am Blindsided: the Game-Changers We Might Not See Coming
Mark Harrison, Digital Production Partnership

The number one company in the world for gaming revenue makes as much as Sony and Microsoft combined. It isn't American or Japanese. Marketeers project that by 2019, video advertising on out-of-home displays will be as important as their spending on TV. Meanwhile, a single US tech giant could buy every franchise of the top five US sports leagues. From its off-shore reserves. And still have \$50 billion change.

We all know consumers like OTT video. But that's the least of it. There are trends in the digital economy that, if looked at globally, could have sudden, and profound, implications for the professional content creation industry.

In this eye-widening presentation, Mark Harrison steps outside the western-centric, professional-media industry perspective to join the technology, consumer, and media dots and ask: what could blindside us if we don't widen our point of view?

9:50 am - 10:15 am Interactive Storytelling: Choose What Happens Next
Andy Schuler, Netflix

Looking to experiment with non-linear storytelling, Netflix launched its first interactive episodes in 2017. Both in children's programming, the shows encouraged even the youngest of viewers to touch or click on their screens to control the trajectory of the story. This presentation delves into how we overcame some of the more interesting technical challenges of the project (i.e., mastering, encoding, streaming), how we utilized SMPTE IMF to streamline the process and why we need more formalized mastering practices for future projects.

10:15 am - 10:40 am HPA Engineering Excellence Award Winners
Moderator: Joachim Zell, EFILM
Joe Bogacz, Canon
Paul Saccone, Blackmagic Design
Lance Maurer, Cinnafilm
Michael Flathers, IBM
Dave Norman, Telestream

10:40 am - 10:55 am Refreshment Break (load up on treats before the post-retreat treat)

10:55 am - 11:15 am The Navajo Strategic Digital Plan
John Willkie, Luxio

11:15 am - 11:50 am Adapting to a COTS Hardware World
Moderator: Stan Moote, IABM
Paul Stechly, Applied Electronics
Thomas Burns, Dell
Mike Palmer, Masstech
Karl Paulsen, Diversified
Scott Randol, MAX Post

There is no question that transitioning to off-the-shelf hardware is clearly one of the biggest topics on all sides of our industry, from manufacturers, software and service

providers through to system integrators, facilities and users themselves. It's also incredibly uncomfortable.

Post-production was an early adopter of specialized workstations (e.g. SGI), and has now embraced a further migration up the stack to COTS hardware and IP networks, whether bare metal, virtualized, hybrid or fully cloud based.

As the industry deals with the global acceleration of formats, platforms and workflows, what are the limits of COTS hardware when software innovation is continually testing the limits of general purpose CPUs, GPUs and network protocols?

This presentation and panel will put the “hidden” issues on the table when it comes to using COTS hardware, from the point of view of users and facility operators as well as manufacturers, services and systems integrators.

11:50 am - 12:10 pm Academy Software Foundation: Enabling Cross-Industry Collaboration for Open Source Projects

David Morin, Academy Software Foundation

In August 2018, the Academy of Motion Picture Arts and Sciences and The Linux Foundation launched the Academy Software Foundation (ASWF) to provide a neutral forum for open source software developers in the motion picture and broader media industries to share resources and collaborate on technologies for image creation, visual effects, animation and sound. This presentation will explain why the Foundation was formed and how it plans to increase the quality and quantity of open source contributions by lowering the barrier to entry for developing and using open source software across the industry.

12:10 pm - 12:30 pm Blurring the Real and Digital Realms in Location Based Entertainment

Selma Sabera, Meow Wolf

Meow Wolf, a New Mexico location-based entertainment start-up, created the first true cross-reality sculpture that blurs the lines between the real and digital realms using Magic Leap. The DIY arts collective built a fully immersive large scale sculpture of an intergalactic mech, called "The Navigator," that uses a custom made control panel to control an experience in Magic Leap. When users sit on the mech, they are invited to explore a two star solar system with seven planets and solve a set of puzzles. The Navigator is intended to be a teaser for Meow Wolf's Denver exhibit and explores the use of spatial computing in location based entertainment.

OFFICIAL END OF 2019 HPA TECH RETREAT

12:30 pm - 1:00-ish Post-Retreat Treat

Jerry's Guide to Backpacking Photography - Nerd's Edition

Jerry Pierce

How do you plan both backpacking and photography for a trek in the wilderness for 7+ days? Everything on your back and take GREAT pictures - all in under 40 pounds (food, shelter, camera, power supply, water, etc.).

1:00-ish - 1:02-ish Post-Post-Retreat Treat

The Earliest Idea for an Electronic Camera?

Mark Schubin

Newly discovered information moves the date for the earliest idea for a video camera back by seven years to an Australian 15-year-old. Maybe.