IEEE TECH FOR HUMANITY SERIES >>>>>

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#IEEESXSW

IEEE Tech for Humanity Series
SXSW 2017 • March 10-19, 2017
Austin Convention Center, JW Marriott and Driskill Hotel

Back by popular demand, IEEE returns to SXSW for its 6th consecutive year, bringing carefully curated sessions that feature an array of world-changing technologists, scientists, designers, developers and thought leaders.

The 2017 Tech for Humanity Lineup features fifteen dynamic sessions (solo, duo, and panel) and meetups at SXSW 2017 focused on leading edge advancements in **AI, AR/VR, Blockchain, Ethics in Technology, Healthcare, Hearables, Immersive Design, Synthetic Biology, Wearables and more!**

Visit us at Booth #1809 in the Austin Convention Center Trade Show and explore our VR activation, "IEEE UniVRse." Join our meetup with Father of the Internet, Vint Cerf, as well as networking gatherings for Entrepreneurs and Women in Tech! Join IEEE SXSW Featured Speakers Vint Cerf and Thad Starner and our other Tech for Humanity Series speakers and #Partylikeanengineer with STEAM Carnival entertainment from Two Bit Circus! You'll learn why IEEE is the perfect place for next-generation innovators to network, grow professionally and take an active part in advancing technology for the benefit of humanity.

This press kit can be downloaded at **www.techforhumanity.ieee.org**

About IEEE
IEEE is the largest technical professional organization dedicated to advancing technology for the benefit of humanity. Through its highly cited publications, conferences, technology standards and professional and educational activities, IEEE is the trusted voice in a wide variety of areas ranging from aerospace systems, computing and telecommunications to biomedical engineering, electric power and consumer electronics.

Learn more at www.ieee.org

About SXSW Interactive
The 24th annual SXSW Conference and Festival returns to Austin from Friday, March 10 through Tuesday, March 14, with convergence programming through March 19th. An incubator of cutting-edge technologies and digital creativity, the 2016 event features compelling presentations and panels from the brightest minds in emerging technology, scores of exciting networking events hosted by industry leaders and an unbeatable lineup of special programs showcasing the best new innovations, video games and startup ideas the community has to offer. From hands-on training to big-picture analysis of the future, SXSW Interactive has become the place to discover the technology of tomorrow today.

Learn more at www.sxsw.com

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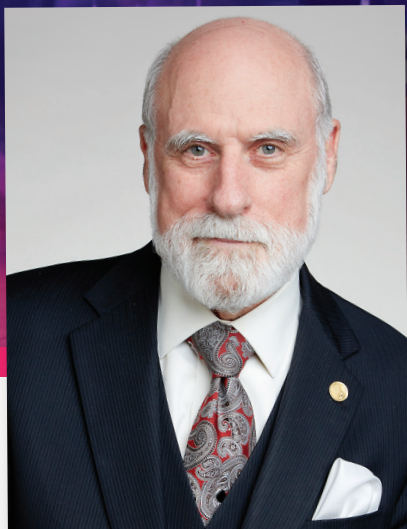
> "Over the past 200 years, new discoveries have led to new products and services that empower humanity, augment our muscle and brain power, free up leisure time, cure diseases and repair broken bodies. Today, artificial intelligence and machine learning are creating new cognitive tools that could produce rewards for every person on the planet." -Vint Cerf

SXSW Featured Speaker

At Google, Vint Cerf contributes to global policy development the continued spread of the Internet. Widely known as one of the "Fathers of the Internet," Cerf is the co-designer of the TCP/IP protocols and the architecture of the Internet. He has served in executive positions at the Internet Society, the Internet Corporation for Assigned Names and Numbers, the American Registry for Internet Numbers, MCI, the Corporation for National Research Initiatives and the Defense Advanced Research Projects Agency and on the faculty of Stanford University. Vint Cerf sits on the US National Science Board and is a Visiting Scientist at the Jet Propulsion Laboratory. Cerf is a Foreign Member of the Royal Society and Swedish Academy of Engineering, Fellow of the IEEE, ACM, American Association for the Advancement of Science, American Academy of Arts and Sciences, British Computer Society, Worshipful Company of Information Technologists, Worshipful Company of Stationers and is a member of the National Academy of Engineering. Cerf is a recipient of numerous awards and commendations in connection with his work on the Internet, including the US Presidential Medal of Freedom, US National Medal of Technology, the Queen Elizabeth Prize for Engineering, the Prince of Asturias Award, the Japan Prize, the Charles Stark Draper award, the ACM Turing Award, the Legion d'Honneur and 29 honorary degrees.

Social Media: @vgcerf

VINT CERF

Topical Expertise
- People Centered Internet
- Project Tunisia
- Bit rot
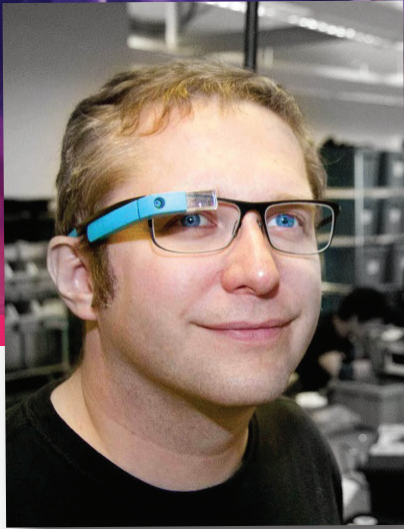- Potential/Peril of IoT

Session:
An Internet For and By the People
Sunday, March 12, 2017
12:30 - 1:30 pm CT | JWM

One of the Internet's fathers, Vint Cerf, Chief Internet Evangelist at Google and Founder of the People-Centered Internet (PCI) makes his first-ever SXSW appearance to provide a future Internet forecast. Find out about the unprecedented partnership opportunities between the technology community and international/private finance that will help connect the three billion people who don't yet have access to the Internet. Learn about infrastructure development and the future of IoT. Find out how the PCI is advocating to make the future internet globally accessible, trust-driven, opportunity and benefit laden for all -- and how you can engage! Part of the IEEE Tech for Humanity Series.

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> "Paradoxically, bringing computing closer to our bodies helps get it out of our way while providing the assistance we need to live freer and more independent lives." -Thad Starner

THAD STARNER

Topical Expertise

- Wearable computing
- Animal computer interaction
- Learning to play piano without practice

Session:
Not Your Mama's Wearables
Monday, March 13, 2017
12:30-1:30 pm CT | JWM

Thad Starner is a visionary pioneer and mastermind in wearable computing whose cutting-edge innovations bridge critical gaps between people, machines, and their environments. Hear lessons from his journey as an MIT student, Professor at Georgia Tech and longstanding Technical Lead for Google Glass. See how his work in voiceless speech recognition and brain-computer interfaces can help fuse our bodies, minds and devices to create a more seamless future UX. Learn how Thad's leading-edge wearables enable subconscious learning and leverage AI and machine learning to enable communication between people, dogs and dolphins! We'll even bring a furry friend! Part of the IEEE Tech for Humanity Series.

SXSW Featured Speaker

Thad Starner is a wearable computing pioneer and has been wearing a computer with a head-up display as part of his daily life since 1993. Dr. Starner is a Professor of Computing at Georgia Institute of Technology and a Technical Lead on Google's Glass. Thad is a founder of the annual ACM International Symposium on Wearable Computers, now in its 21st year, and has produced over 450 papers and presentations on his work. He is an inventor on over 90 United States utility patents awarded or in process. For over two decades, Starner's work has appeared in national and international public forums, including CBS's 60 Minutes and 48 Hours, ABC's Nightline, PBS's News Hour, CNN, the BBC, National Geographic, The New York Times, New Scientist, and The Wall Street Journal.

Social Media: @ThadStarner

KAREN BARTLESON

Biography

Karen Bartleson has over 35 years of experience in the semiconductor industry, specifically in electronic design automation. Karen retired as Senior Director of Corporate Programs and Initiatives at Synopsys, an electronic design automation company, where her responsibilities included creating programs for technical standards development, software tool interoperability, and creating and maintaining strong relationships with universities and research institutions worldwide. Prior to Synopsys, Karen brought her exceptional professional and leadership skills to bear at United Technologies Microelectronics Center and Texas Instruments.

Karen was President of the IEEE Standards Association in 2013 and 2014. During her tenure, she led the development of a new strategic plan, furthered the principles of the OpenStand market-driven standardization paradigm, and finalized IEEE's membership in the Global Standards Collaboration.

As a member and leader within the IEEE Board of Directors in 2013 and 2014, she chaired and led the development of the strategic plan for the IEEE Internet Initiative Committee, whose charter is to raise IEEE's influence and profile in the areas of Internet governance, cyber-security, and cyber-privacy policy development. She was also a member of the IEEE Strategy Committee, overseeing the development of IEEE's role in global public policy.

In 2016, Karen was also appointed to the new U.S. Department of Commerce Digital Economy Board of Advisors. Bartleson, an IEEE senior member, and 16 other leaders from the fields of banking, economics, law, and technology are tasked with recommending ways to advance economic growth and job opportunities in the digital age.

Karen has published numerous articles about standards and universities and has authored the book "The Ten Commandments for Effective Standards: Practical Insights for Creating Technical Standards" (Synopsys Press, 2010). In 2003, she received the Marie R. Pistilli Women in Electronic Design Automation Achievement Award. She earned a B.S. in Engineering Science with a concentration in Electronic Engineering from California Polytechnic State University in 1980.

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> "Technologists can and should implement converging technologies (AR, VR, AI) in such a way that incentivizes the proposition that it is in everyone's interest to act justly. If conceived and designed in an interdisciplinary, socially responsible fashion, it's possible to deploy these technologies in a way that encourages collectively beneficial ethics and helps foster a healthy society, which arises when the individual is unified with others." -BC Bierman

BC BIERMAN

Topical Expertise
- Public Space Augmented Reality
- Converging Technologies (AR, VR, AI) and the Humanities
- Interactive Digital Art

Session:
AI and the Suburbanization of the Mind
Thursday, March 16, 2017
2:00 - 3:00 pm CT | JWM Salon 6

As people increasingly leverage technology to mediate their lives, from music to news, dating prospects to social feeds, artificial intelligence is quickly becoming the backbone for our future experiences and decision-making. Will this improve our lives or will we soon live in a homogenized world, where chance, error, diversity and serendipity are overridden by algorithms? We'll leverage real-life scenarios and examples from Facebook, Pandora and StarCraft to discuss ways developers are addressing these concerns, and discuss how (and if) we can help humanity avoid the "suburbanization of the mind." Part of the IEEE Tech for Humanity Series.

Biography
BC [heavy] Biermann is the founder of Heavy Projects and a Fellow at the USC Annenberg Innovation Lab. With a PhD in Humanities [Intermedia Analysis] from the Universiteit van Amsterdam, BC is an interdisciplinary futurist whose work investigates the intersection of emerging technologies and semiotics in ways that address impending social, political, and ethical impacts of AR, VR, and AI. As an internationally recognized digital artist, BC is a leading pioneer in interactive augmented reality design and his work is located in such cities as Austin, New York, Miami, St. Louis, San Diego, Perth, and Geneva. A thought leader in the converging technologies space, BC serves on the IEEE Mixed Reality and Artificial Intelligence Group as a Part of The Global Initiative for Ethical Considerations in the Design of Autonomous Systems.

Social Media: @heavyprojects

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> "Spaces and the things in those spaces are sources of information in the way that other people are sources of information. And blending that together in a way that is intuitive and cognitively meaningful is going to be an absolutely critical element of the hearable future. A key piece in effectively augmenting the real world will be understanding listener intent and using ecologically seamless inputs to the device." -Simon Carlile

Topical Expertise
- How EEG/other biometrics will enable hearables to understand wearers' needs, intents
- Why Alexa and Siri show that what seems impossibly Jetson today often is around the corner
- Could hearables eventually displace smartphones

Biography

Simon Carlile Ph.D. is Senior Director of Research and leads Starkey Research in their quest for groundbreaking and innovative hearing solutions. Simon has a BSc (Hons) and PhD in Auditory Neuroscience from the University of Sydney. He completed his postdoctoral training at Oxford University (UK) where he was a Junior Research Fellow of Green college. He later established and became Head of the Auditory Neuroscience Laboratory at the University of Sydney, where he is also a Professor of Neuroscience in the School of Medical Sciences. Simon has held senior management roles as CIO (University of Sydney) and as the CTO for two start-up technology companies. Simon has published more than 110 articles in peer-reviewed international journals, established a strong patent portfolio, edited a foundation volume on auditory virtual reality and is Associate Editor for Nature – Scientific Reports.

Social Media: @scarlile1957

SIMON CARLILE

Session:
Hearables and the Age of Mediated Listening
Saturday, March 11, 2017
9:30 - 10:30 am | JWM Salon 8

In an age of mediated listening, technology will help us filter, amplify, process and respond to signals in the world around us, enabling hands-free control over our environments. Devices that enable "super hearing" in patients will "listen" to our biometrics and respond to our brain waves. As passive listening gives way to more pervasive listening within our public and very private worlds, "hearable" devices from Google Home and Amazon will take center stage. In a world where everything is listening, how will our lives, thinking and behavior change? Join experts from Karten Design, Starkey Hearing Technology and Dolby Technologies Inc. to find out! Part of IEEE's Tech for Humanity Series.
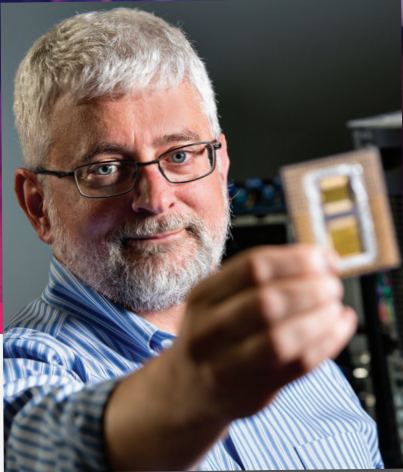
> "It is undeniable that the historic doubling of computer performance every one to two years has improved the human condition. We are at a crossroads where we can decide to allow the performance to level off or take bold steps to continue its exponential rise in order to continue to improve the lives of all inhabitants of our planet." -Tom Conte

TOM CONTE

Topical Expertise

- Moore's Law
- Rethinking the Computer
- Next Generation Computing

Session:
Going Beyond Moore's Law
Tuesday, March 14, 2017
11:00 am - 12:00 pm CT | JWM

In 1965, Gordon Moore predicted that the number of components in integrated circuits would grow exponentially. The impact of Moore's Law is all around us, in the myriad of gadgets, computers, and networks that power modern life. But the winning streak can't last forever. The value of Moore's Law is already on the wane. To keep making computers better and better, researchers are turning to new technologies, including circuits modeled on the human brain, carbon nanotube computers, and processors that make do with approximate rather than exact answers. Join Rachel Courtland, IEEE Spectrum, along with leaders in this new space, to discuss the end of Moore's Law and what will replace it.

Biography

Tom Conte is a Professor of CS and ECE at Georgia Institute of Technology, where he directs the interdisciplinary Center for Research into Novel Computing Hierarchies. Since 2012, Tom has co-chaired (along with Elie Track) the IEEE-wide Rebooting Computing Initiative that has as its goal to entirely rethink how we compute, from algorithms down to semiconductor devices. He is also the vice chair of the IEEE International Roadmap of Devices and Systems (the successor to the International Technology Roadmap of Semiconductors). He travels around the world giving talks about how shifts in technology and the slowing of Moore's Law are about to cause a dramatic shift in how we compute. Tom is the past president of the IEEE Computer Society and a Fellow of the IEEE.

Social Media: @contet

> "Hearables can do a lot of things, which creates a host of regulatory, social and ethical considerations and challenges. For example, if a company wants to provide employees with hearables, it first needs to develop a policy defining when, where and why it could use those devices to record conversations. It might need to capture all employee-customer interactions because laws or industry best practices require that, but how does it ensure that other types of interactions aren't recorded? This is just one example of what hearable designers, regulators and users all need to contemplate and resolve, or else these devices will never live up to their potential." -Poppy Crum

POPPY CRUM

Topical Expertise

- Wearables/hearables and regulatory efforts and considerations
- Neuroscience, sensory perception and immersive technologies
- Augmented reality and information optimization
- Wearable technologies and sensory plasticity

Session:

Hearables and the Age of Mediated Listening
Saturday, March 11, 2017
9:30 - 10:30 am | JWM Salon 8

In an age of mediated listening, technology will help us filter, amplify, process and respond to signals in the world around us, enabling hands-free control over our environments. Devices that enable "super hearing" in patients will "listen" to our biometrics and respond to our brain waves. As passive listening gives way to more pervasive listening within our public and very private worlds, "hearable" devices from Google Home and Amazon will take center stage. In a world where everything is listening, how will our lives, thinking and behavior change? Join experts from Karten Design, Starkey Hearing Technology and Dolby Technologies Inc. to find out! Part of IEEE's Tech for Humanity Series.

Biography

Poppy Crum is Chief Scientist at Dolby Laboratories. She also holds an appointment as an Adjunct Professor at Stanford University in the Center for Computer Research in Music and Acoustics and the Program in Symbolic Systems. At Dolby, Poppy directs the growth of internal science. She is responsible for integrating neuroscience and sensory data science into algorithm design, technological development, and technology strategy. At Stanford, her work focuses on the impact and feedback potential of new technologies with gaming and immersive environments on neuroplasticity. Poppy is also a U.S. representative to the International Telecommunication Union (ITU), and a member of the Stanford Research Institute Technical Council. She was previously a fellow of the US Defense Science Research Council. Prior to joining Dolby Laboratories Poppy was Research Faculty in the Department of Biomedical Engineering at Johns Hopkins School of Medicine where her neurophysiological research focused on understanding the neural correlates of hearing in complex acoustic environments and the functional circuitry of the auditory cortex. Poppy is a Fellow of the Audio Engineering Society, and has been named to Billboard Magazine's 100 most powerful female executives in the music industry.

> "It's been less than two decades since we learned to "read" the human genome. New tools to "edit" it are technically exciting, but must be used with great care and only to treat existing patients. As dozens of countries have already decided, altering the genes and traits of future children and generations is unnecessary for medical purposes, and it would risk the emergence of genetic "haves" and "have-nots" along with new forms of discrimination, inequality, and conflict." -Marcy Darnovsky

MARCY DARNOVSKY

Session:

Engineering Life- Artificial Genome Synthesis
Monday, March 13, 2017
12:30 - 1:30 pm CT | JWM

It's science fiction turned reality: from a closed-door Harvard meeting emerged a plan to create synthetic human genomes. That means assembling 3 billion chemical building blocks into one complete package of DNA, which encodes all the body parts and life processes that make up a functional human being. The project's proponents say scientists could harness the power of life itself to create new medicines and artificial organs. But do the risks outweigh the rewards? Is making a human cell from data and raw materials opening the door to discovery or danger? Join Eliza Strickland, IEEE Spectrum, in conversation with researchers and critics about the ethics and implications of synthetic biology.

Topical Expertise

- Social and ethical considerations in gene editing for human reproduction
- International policies on human gene editing
- Public engagement with human genetic technologies

Biography

Marcy Darnovsky, PhD, is Executive Director at the Center for Genetics and Society, a Berkeley, California-based public affairs organization working to encourage responsible uses and effective societal governance of reproductive and human genetic technologies. She speaks and writes widely on human biotechnologies, focusing on their social justice, human rights, health equity, and public interest implications, and has been interviewed for hundreds of television, radio, and other news outlets.

> "I would like to see a world in which all can equally benefit from the use of beneficial, ethically and responsibly designed AI. I am working to help make that a reality and create an environment where AI enables humans to get the best out of ourselves, create the greatest good for humanity as a whole and achieve excellent outcomes for the flora and fauna with which we share our planet." -Kay-Firth Butterfield

KAY FIRTH - BUTTERFIELD

Topical Expertise

• Artificial Intelligence - Law and Policy
• Impact of emerging techonolgies on business and society
• IEEE Ethically Aligned Design

Session:
Ethically-Aligned Design: Setting Standards for AI
Saturday, March 11, 2017
11:00 am - 12:00 pm CT | 3TEN at ACL Live Austin

It's imperative we move beyond the media-hyped fears regarding Artificial Intelligence and Autonomous Systems (AI/AS) to create workable solutions that increase human well being. In 2016, The Global Initiative for Ethical Considerations in the Design of Autonomous Systems was launched as an Industry Connections Program of the IEEE Standards Association. The mission of the Global Initiative is to ensure every technologist is educated, trained, and empowered to prioritize ethical considerations in the design and development of these systems. Panelists will describe and assess the Global Initiative's standard setting process and review some of the group's working recommendations.

Biography

Kay Firth-Butterfield is a Barrister-at-Law and part-time Judge in the United Kingdom where she has also worked as a mediator, arbitrator, business owner and Professor of Law. In the United States, Kay is Executive Director of AI-Austin, co-founder of the Consortium for Law and Policy of Artificial Intelligence and Robotics and Distinguished Scholar of the Robert E. Strauss School at the University of Texas. Kay also serves on the Technical Expertise Committee – Foundation for Responsible Robotics. She is the former Chief Officer, and member, of the Lucid.ai Ethics Advisory Panel. Kay is an adjunct Professor of Law at UT Law School teaching "Artificial Intelligence and emerging technologies: Law and Policy" Kay is a humanitarian with a strong sense of social justice and has advanced degrees in Law and International Relations. She advises governments, think tanks and non-profits about artificial intelligence, law and policy. She thinks about how AI and other emerging technologies will impact business and society, including how business can prepare for that impact in its internal planning and external interaction with customers and other stakeholders and how society will be affected by these technologies. Kay speaks regularly to international audiences addressing many aspects of these challenging changes.

> "Humanity needs powerful technologies to transition beyond models that are based upon consumption to models that are based upon creation. Whether the creator is a human or a machine, data has a point-of-view and tells a story. I build platforms which meld human and machine creativity to automate deeply participatory, democratic, and scalable experiences." -Ann Greenberg

ANN GREENBERG

Topical Expertise
• Blockchain for Entertainment
• AI to automate content creation
• AR/VR/MR Storytelling
• Entrepreneurship

Session:
Beyond Fintech: Blockchain for Every Industry
Friday, March 10, 2017
12:30 - 1:30 pm CT | JWM Salon 7

If you haven't been tracking blockchain because you thought it was just for cryptocurrencies and fintech startups, it's time to start. Innovators in banking (U.S. Bank), entertainment (Sceneplay) and technology (Cisco and Cognizant) will get your brain buzzing about blockchain's broader potential by sharing how they're using it to speed lending, turn scripts into 21st century collaboration tools, document refugees and more. You'll understand how distributed ledger tech can store any kind of content in a way that evolves it into a verified, immutable source of truth—and leave able to apply blockchain's principles and possibilities to your own work. Part of the IEEE Tech for Humanity Series.

Biography

Ann Greenberg is a serial entrepreneur and inventor. Ann's new venture, Sceneplay, Inc. is developing patented systems using artificial intelligence to automate scripted-content creation, distribution and analysis. Ann also runs Hugging Company, a 21st century incubator for storytelling technologies and digital marketplaces. Previously, Ann co-founded Gracenote, the world's largest media and entertainment metadata company whose global database and technology solutions underpin the programming guides and personalized user experience for major video, music, audio and sports content. Gracenote helps consumers to discover and engage with relevant, personalized content across platforms—from the smart TVs in their living rooms to the smartphones in their hands and the streaming music in their cars. Gracenote was recently acquired by Nielsen ($560M). Ann mentors Korea's 1st accelerator, SparkLabs, including MangoPlate (Korea's Yelp). Previously she advised technology companies, Busby.io, Fem-Inc., and Spherical Inc. (Winner DEMO and MacWorld.) Ann designed the original immersive story-mapping concepts for a documentary about a tribe of Jews living in Ghana and she produced hip-hop artist Blaqstarr's SongPano (her concept for immersive album covers) for Interscope. In 1992, Ann co-founded ION, a pioneering digital studio, to create immersive entertainment that invented early interactive cinema systems, enhanced CD formats and groundbreaking intelligent media players. ION published artists including: David Bowie, Brian Eno, Primus and The Residents. Other projects included "Robecca, a Digital Frankenstein" built from collective memory, "Immersive Digital Dante" and Ray Zone's 3DWorld. Prior to ION, Greenberg headed marketing for the Academy Award-winning Pressman Films.

Social Media: @sceneplay

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"Technology will most benefit humanity when we prioritize alignment with end user values and an increase of wellbeing versus exponential growth."
- John C. Havens

JOHN C. HAVENS

Session:
Ethically-Aligned Design: Setting Standards for AI
Saturday, March 11, 2017
11:00 am - 12:00 pm CT | 3TEN at ACL Live Austin

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Topical Expertise
• Ethics and Artificial Intelligence
• Embracing Humanity while Maximizing Machines
• IEEE Ethically Aligned Design - Prioritizing Human Wellbeing for AI

Biography

John C. Havens is Executive Director of The IEEE Global Initiative for Ethical Considerations in Artificial Intelligence and Autonomous Systems, as well as the author of Heartificial Intelligence: Embracing our Humanity to Maximize Machines.

Social Media: @johnchavens

> "Biology is now a technology. Cells are the ultimate factories, and we're learning how to program them. The future will see living organisms used to meet the fundamental needs of humanity, here on earth, and beyond."
> -Andrew Hessel

ANDREW HESSEL

Session:
Engineering Life- Artificial Genome Synthesis
Monday, March 13, 2017
12:30 - 1:30 pm CT | JWM

It's science fiction turned reality: from a closed-door Harvard meeting emerged a plan to create synthetic human genomes. That means assembling 3 billion chemical building blocks into one complete package of DNA, which encodes all the body parts and life processes that make up a functional human being. The project's proponents say scientists could harness the power of life itself to create new medicines and artificial organs. But do the risks outweigh the rewards? Is making a human cell from data and raw materials opening the door to discovery or danger? Join Eliza Strickland, IEEE Spectrum, in conversation with researchers and critics about the ethics and implications of synthetic biology.

Topical Expertise
• Harnessing biology for sustainability
• The new genome project
• Designer organisms for diagnosing, fighting, and preventing disease

Biography

Autodesk Distinguished Researcher Andrew Hessel is a catalyst in biological technologies, helping industry, academics, and authorities better understand the changes happening in life science. He is also the co-founder of the Pink Army Cooperative, the world's first cooperative biotechnology company, which is aiming to make open source viral therapies for cancer. He is a fellow at the University of Ottawa, Institute for Science, Society, and Policy and the former co-chair of bioinformatics and biotechnology at Singularity University.

Social Media: @andrewhessel

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> "Technology is a collective human endeavor, not a force of nature — we control its development. How society asserts that control can determine how well technology reflects and serves the best human impulses." -Jay Iorio

JAY IORIO

Session:
AI and the Suburbanization of the Mind
Thursday, March 16, 2017
2:00 - 3:00 pm CT | JWM Salon 6

As people increasingly leverage technology to mediate their lives, from music to news, dating prospects to social feeds, artificial intelligence is quickly becoming the backbone for our future experiences and decision-making. Will this improve our lives or will we soon live in a homogenized world, where chance, error, diversity and serendipity are overridden by algorithms? We'll leverage real-life scenarios and examples from Facebook, Pandora and StarCraft to discuss ways developers are addressing these concerns, and discuss how (and if) we can help humanity avoid the "suburbanization of the mind." Part of the IEEE Tech for Humanity Series.

Topical Expertise
- Ethics and intelligent environments
- The convergence of mixed reality, AI, IoT, etc.
- The role of artists in next-generation technologies

Biography

Jay Iorio is the Director of Innovation for the IEEE Standards Association. He focuses on virtual environments – virtual worlds and mixed reality – and how they will integrate with the larger environment of wearables, sensors, and an intelligent built environment. Jay has spoken at AWE, South by Southwest, MIT, the University of Southern California, the Federal Consortium for Virtual Worlds, and elsewhere on the topics of mixed reality, virtual environments, technology convergence, and the crucial role of artists in this new technology landscape. Jay built and manages the IEEE Island complex in Second Life. He is also a machinimatographer, an active musician, and a resident of Los Angeles.

Social Media: @jayiorio

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> "Wearable technology will significantly improve the way working dogs interact with their handlers, allowing dogs to communicate specific information by activating sensors. For example, a hearing dog will be able to tell his owner what sound he just heard, a guide dog will be able to tell his handler whether the stairs in their path go up or down, and a medical alert dog will be able to call 911 with GPS information if his handler has a medical emergency. Technology will allow working dogs to keep their handlers safer and possibly even save lives."
> -Melody Jackson

MELODY JACKSON

Topical Expertise
- Wearables
- Animal computer interaction (ACI)
- Brain-Computer Interfaces

Session:
Not Your Mama's Wearables
Monday, March 13, 2017
12:30-1:30 pm CT | JWM

Thad Starner is a visionary pioneer and mastermind in wearable computing whose cutting edge innovations bridge critical gaps between people, machines, and their environments. Hear lessons from his journey as an MIT student, Professor at Georgia Tech and longstanding Technical Lead for Google Glass. See how his work in voiceless speech recognition and brain-computer interfaces can help fuse our bodies, minds and devices to create more seamless future UX. Learn how Thad's leading-edge wearables enable subconscious learning and leverage AI and machine learning to enable communication between people, dogs and dolphins! We'll even bring a furry friend! Part of the IEEE Tech for Humanity Series.

Biography

Dr. Jackson is the creator and director of the BrainLab, whose mission is to research innovative human-computer interaction for people with severe disabilities. Dr. Jackson's work focuses on studying real-world applications for direct brain interfaces as well as other biometric interfaces. She participated in the first team to implant a human being with a chronic recording electrode in 1998, and has also extensively explored noninvasive brain-computer interfaces with technologies such as EEG and functional Near Infrared (fNIR) imaging. Her work has been funded by a variety of sponsors including the National Science Foundation, National Institutes of Health (NINDS), NIDRR, and DARPA.

> "The development of strong artificial intelligence and increasingly sophisticated robotics will remake our world. It is imperative that thought leaders in the academy, industry, and government work together with urgency to address the legal, ethical, and policy challenges posed by these emergent technologies." -Derek Jinks

DEREK JINKS

Topical Expertise
• Law, ethics & policy for AI and emerging technologies
• Consortium on Law and Ethics of AI Robotics (CLEAR) at the University of Texas

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Ethically-Aligned Design: Setting Standards for AI
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It's imperative we move beyond the media-hyped fears regarding Artificial Intelligence and Autonomous Systems (AI/AS) to create workable solutions that increase human well being. In 2016, The Global Initiative for Ethical Considerations in the Design of Autonomous Systems was launched as an Industry Connections Program of the IEEE Standards Association. The mission of the Global Initiative is to ensure every technologist is educated, trained, and empowered to prioritize ethical considerations in the design and development of these systems. Panelists will describe and assess the Global Initiative's standard setting process and review some of the group's working recommendations.

Biography

Derek Jinks is the Marrs McLean Professor in Law at the University of Texas School of Law and a Distinguished Scholar at the Robert S. Strauss Center for International Security and Law at the University of Texas. At the Strauss Center, he is also the Director of the Consortium on the Law and Ethics of Artificial Intelligence and Robotics (CLEAR). He also served as the Charles H. Stockton Professor of International Law at the U.S. Naval War College for 2009-2010. Professor Jinks received a B.A. in anthropology from the University of Texas at Austin, M.A. and M.Phil. degrees in sociology from Yale University, and a J.D. from Yale Law School. Prior to entering law teaching, he clerked for Judge William C. Canby, Jr. of the U.S. Court of Appeals for the Ninth Circuit; worked in the Prosecutor's Office of the International Criminal Tribunal for the Former Yugoslavia; served as Senior Legal Advisor and United Nations Representative for the South Asia Human Rights Documentation Centre in India; and served in the delegation of the International Service for Human Rights at the Rome Conference for the establishment of a permanent International Criminal Court. Since 2006, he has been a member of the U.S. Secretary of State's Advisory Committee on International Law.

Social Media: @djinks

> " Nothing is inherently wrong with creating technology to provide certain people value or make sound profits. However, you must design your technology with a wider lens when you ask, 'Is this something that will holistically increase the wellbeing of the individuals and communities where it is placed?' " -Konstantinos Karachalios

KONSTANTINOS KARACHALIOS

Topical Expertise

- Connecting the unconnected
- Ethical design for AI & AS
- Standards Development for the advancement of global technologies

Session:

Ethically-Aligned Design: Setting Standards for AI
Saturday, March 11, 2017
11:00 am - 12:00 pm CT | 3TEN at ACL Live Austin

It's imperative we move beyond the media-hyped fears regarding Artificial Intelligence and Autonomous Systems (AI/AS) to create workable solutions that increase human well being. In 2016, The Global Initiative for Ethical Considerations in the Design of Autonomous Systems was launched as an Industry Connections Program of the IEEE Standards Association. The mission of the Global Initiative is to ensure every technologist is educated, trained, and empowered to prioritize ethical considerations in the design and development of these systems. Panelists will describe and assess the Global Initiative's standard setting process and review some of the group's working recommendations.

Biography

A globally recognized leader in standards development and intellectual property, Dr. Ing. Konstantinos Karachalios is managing director of the IEEE Standards Association and a member of the IEEE Management Council. As managing director, he has been enhancing IEEE efforts in global standards development in strategic emerging technology fields, through technical excellence of staff, expansion of global presence and activities and emphasis on inclusiveness and good governance, including reform of the IEEE standards-related patent policy.

As member of the IEEE Management Council, he championed expansion of IEEE influence in key techno-political areas, including consideration of social and ethical implications of technology, according to the IEEE mission to advance technology for humanity. Results have been rapid in coming and profound; IEEE is becoming the place to go for debating and building consensus on issues such as a trustworthy and inclusive Internet and ethics in design of autonomous systems. Before IEEE, Konstantinos played a crucial role in successful French-German cooperation in coordinated research and scenario simulation for large-scale nuclear reactor accidents. And with the European Patent Office, his experience included establishing EPO's patent academy, the department for delivering technical assistance for developing countries and the public policy department, serving as an envoy to multiple U.N. organizations. Konstantinos earned a Ph.D. in energy engineering (nuclear reactor safety) and masters in mechanical engineering from the University of Stuttgart.

> "As a designer, I've spent the past 15-plus years focused on devices that live on people's ears. I believe that hearables are the perfect interface for getting people information where and when they want it, and to enable them to interact with the world around them. I envision a future where hearables interact with buildings and other parts of the environment to get the information that their users want. Architects, interior designers and other people who control the spaces where we live, work and play will increasingly make hearables a fundamental part of their design philosophy." -Stuart Karten

STUART KARTEN

Topical Expertise

- How EEG/other biometrics will enable hearables to understand wearers' needs and intents
- Why Alexa and Siri show that what seems impossibly Jetson today often is around the corner
- Could hearables eventually displace smartphones

Session:
Hearables and the Age of Mediated Listening
Saturday, March 11, 2017
9:30 - 10:30 am | JWM Salon 8

In an age of mediated listening, technology will help us filter, amplify, process and respond to signals in the world around us, enabling hands-free control over our environments. Devices that enable "super hearing" in patients will "listen" to our biometrics and respond to our brain waves. As passive listening gives way to more pervasive listening within our public and very private worlds, "hearable" devices from Google Home and Amazon will take center stage. In a world where everything is listening, how will our lives, thinking and behavior change? Join experts from Karten Design, Starkey Hearing Technology and Dolby Technologies Inc. to find out! Part of IEEE's Tech for Humanity Series.

Biography

Stuart Karten is President of the award-winning product design and innovation consultancy Karten Design. For 30 years, he has partnered with medical and consumer product companies, ranging from start-ups to Fortune 500 corporations, to build their business through design. Stuart is known for an approach to design that emphasizes people and emotion. His firm studies people's behaviors, ceremonies, workflow, and pain points to develop deep user empathy. Driven by these insights, Stuart and his creative team of 30 help leading companies seize new opportunities and create compelling products that resonate with end users, increasing adoption and enabling better health outcomes. Stuart graduated from the Rhode Island School of Design. He worked for Gould Medical Products, Mattel, and Baxter Medical Products before founding Karten Design in 1984. Stuart is a founding member of the USC Center for Body Computing and serves on the Board of Regents for the Da Vinci Design High School.

Social Media: @StuartKarten

> "The call to humanize technology is talked about so often that it almost feels like a cliché...but like most clichés, it's perfectly true. Technology's best chance to benefit humanity is to help us become the best versions of ourselves, making us better at what we do and giving us more time in the day to do it—giving us more life in every lifetime, so to speak. "
> -Lynne LaCascia

LYNNE LACASCIA

Topical Expertise
- Blockchain across industries
- The language of blockchain
- Making blockchain practical

Session:
Beyond Fintech: Blockchain for Every Industry
Friday, March 10, 2017
12:30 - 1:30 pm CT | JWM Salon 7

If you haven't been tracking blockchain because you thought it was just for cryptocurrencies and fintech startups, it's time to start. Innovators in banking (U.S. Bank), entertainment (Sceneplay) and technology (Cisco and Cognizant) will get your brain buzzing about blockchain's broader potential by sharing how they're using it to speed lending, turn scripts into 21st century collaboration tools, document refugees and more. You'll understand how distributed ledger tech can store any kind of content in a way that evolves it into a verified, immutable source of truth—and leave able to apply blockchain's principles and possibilities to your own work. Part of the IEEE Tech for Humanity Series.

Biography
Lynne is the Global Head of Brand Narrative at Cognizant, #230 on the Fortune 500 and one of the world's fastest-growing technology companies. There, she finds opportunities to tell the Cognizant story, leads the development of the brand's highest-level messages, and builds a culture of narrative and experience. Lynne has always reveled in explaining the inexplicable, able to look beneath, see between, and crystallize the essence of ideas. She has made a career of decoding B2B companies, sharing the excitement of hard-to-understand products, ideas and industries from Sharia finance to wireless contracts to dosimetry. At Cognizant, it's her job to help envision the future of every industry, including our own. She needs to understand how to talk about every technology important to Cognizant, a consulting and services company that collaborates with clients in twenty industries. Her first marketing job was at a digital agency during the .com boom, she's been writing and moderating on the web since before the word "blog" was coined, and she's still friends IRL with a group of people she met on a BBS in 1998. She believes in the power of brand, marketing and storytelling to ensure great ideas endure, and has wielded it for institutions such as AT&T, Citi, Deloitte, DTCC, Girl Scouts, Google, Merck, Nice 'n Easy, Siemens and Standard & Poor's. She has collaborated to reposition more than 50 organizations, working at branding agencies from Interbrand, the world's largest, to one of her own. Before discovering the exponential power of brands, she structured more than $3 billion of derivatives and project financings at Salomon Smith Barney for clients like the government of the U.S. Virgin Islands and the New York MTA. Lynne has a B.S. in both Economics and Applied Math from Yale University.

Social Media: @lynnelac

> "The human brain is the most complex system in the known universe. We believe in the power of the human brain, 3 pounds of pure potential. The quest for humanity is to harness the power of the human brain to empower and enlighten ourselves and improve how we interact with the world around us. We seek to empower as many people as possible to tap into this potential." - Tan Le

TAN LE

Topical Expertise
- Brain wearables
- Bioinformatics
- Brain Computer Interfaces

Session:
Brain Wearables
Saturday, March 11, 2017
5:00 - 6:00 pm CT | JWM

Tan Le is the Founder & CEO of EMOTIV, a bio-informatics company that has developed a breakthrough BCI technology, taking data directly from the brain and translating it to action. This means that brain waves can be used to control devices - such as keyboards, robots or wheelchairs - which is life altering for those with physical disabilities. Now, Tan is going beyond brain waves and working to classify thoughts and expressions with whole brain sensing. This can be used for early detection of neurological disorders such as autism, epilepsy, and others. Join Tan to learn about the secrets of unlocking the brain's electrical code, and the potentials and pitfalls of this new research.

Biography

Tan Le is an innovator, inventor & entrepreneur, and is the Founder and CEO of EMOTIV. Born in South Vietnam, Le migrated to Australia as a refugee with her family in 1981. Le began university studies at the age of 16 and went on to complete a bachelor's degree in law (honors) and commerce (honors) in 1998 at Monash University. In 1998, Le was named Young Australian of the Year and voted one of Australia's 30 Most Successful Women Under 30. Le's story was featured in the 'Hope' section of the Eternity Exhibition of the National Museum of Australia. Le has been featured in "Who's Who in Australia" List since 1999, Fast Company's Most Influential Women in Technology in 2010 and Forbes' 50 Names You Need to Know in 2011. Le has been honored by the World Economic Forum as a Young Global Leader since 2009. Le was named a National Geographic Emerging Explorer in 2013. She currently serves on the Board of Stewards on Shaping the Future of Information & Entertainment of the World Economic Forum and the Global Future Council on the Future of Neurotechnologies & Brain Science of the World Economic Forum.

> "With dramatic improvements in energy efficiency and functionality (enabled by going beyond Moore's Law), electronic devices will become pervasive, embedded in the environment and its inhabitants, and interacting directly with them. Distributed information systems for sensing, computing, and communication will be used to address the most pressing needs of this century, including sustainable energy/environment, healthcare, and disaster mitigation." -Tsu-Jae King Liu

TSU-JAE KING LIU

Session:
Going Beyond Moore's Law
Tuesday, March 14, 2017
11:00 am - 12:00 pm CT | JWMtin

In 1965, Gordon Moore predicted that the number of components in integrated circuits would grow exponentially. The impact of Moore's Law is all around us, in the myriad of gadgets, computers, and networks that power modern life. But the winning streak can't last forever. The value of Moore's Law is already on the wane. To keep making computers better and better, researchers are turning to new technologies, including circuits modeled on the human brain, carbon nanotube computers, and processors that make do with approximate rather than exact answers. Join Rachel Courtland, IEEE Spectrum, along with leaders in this new space, to discuss the end of Moore's Law and what will replace it.

Topical Expertise
• Reinventing the Transistor
• More than Moore's Law
• High-Tech Innovation Ecosystem

Biography

Tsu-Jae King Liu is a professor in the Department of Electrical Engineering and Computer Sciences at the University of California, Berkeley, where she presently holds the TSMC Distinguished Professorship in Microelectronics and serves the university in the administrative leadership role of Vice Provost for Academic and Space Planning. She has earned many distinctions for her teaching and research in semiconductor technology and innovation, including the Semiconductor Industry Association University Research Award in 2014 and the Semiconductor Research Corporation Aristotle Award in 2016. She was elected to the Board of Directors of Intel Corporation in July 2016. Dr. Liu is co-inventor of the FinFET, a three-dimensional transistor design used in leading-edge microchips today. Her current research interests are in advanced materials, process technology and solid-state devices for energy-efficient electronics. She earned her B.S., M.S., and Ph.D. degrees in electrical engineering from Stanford University.

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> "Whether in education, healthcare, or so called smart cities, we need to approach technology with humility and a sense of responsibility. We can learn from others globally as to the problems and solutions that are being proposed. My vision is for an inclusive digital world and building ethics into the technology that we develop is pivotal. We must pose questions as to how technology can be used, for what purpose and educate the public accordingly. I am excited by what is possible with technology as we all transform into digital cyborgs - and yet retaining those aspects which defines our humanity, e.g. walking in the shoes of the other, empathy and divergent thinking..." -Monique Morrow

MONIQUE MORROW

Topical Expertise
- Blockchain & Augmented Reality
- Ethics in Artificial Intelligence & Autonomous Systems
- Circular & Exponential Economies

Session:
Beyond Fintech: Blockchain for Every Industry
Friday, March 10, 2017
12:30 - 1:30 pm CT | JWM Salon 7

If you haven't been tracking blockchain because you thought it was just for cryptocurrencies and fintech startups, it's time to start. Innovators in banking (U.S. Bank), entertainment (Sceneplay) and technology (Cisco and Cognizant) will get your brain buzzing about blockchain's broader potential by sharing how they're using it to speed lending, turn scripts into 21st century collaboration tools, document refugees and more. You'll understand how distributed ledger tech can store any kind of content in a way that evolves it into a verified, immutable source of truth—and leave able to apply blockchain's principles and possibilities to your own work. Part of the IEEE Tech for Humanity Series.

Biography

In 2014, Cisco needed someone courageous to bridge the intersection of new technology research and development with global economics, ethics, and geopolitics in a newly created role: the CTO and Evangelist of New Frontiers Engineering. They looked no further than the Asia Office of the CTO where Monique Morrow was serving on the Disruptive Technology Global Leadership Team. Monique has already advanced Cisco's technology footprint through the ideation and conception of disruptive technologies spanning Artificial Intelligence and Mixed Reality (AI/MR), Blockchain, IoT and M2M services, Semantic Web, Cloud Federation, and the Tactile Internet. Her greatest success has been in infusing a big-picture perspective that helps engineers and business leaders understand how existing and future technologies align with the needs of business, government, non-profits, and society-focused organizations. Recognized as one of the most influential technology leaders worldwide, Monique has earned honors that include Top 100 CIOs for 2016 (CIO.com), Top Women in Cloud Innovations Award 2016 (CloudNow), Social Media Presence of the Year 2016 (AI Magazine), Top 10 Influential IT Women in Europe (Think Progress), 2015 Women of M2M/IoT (Connected World Magazine), and 2014 GEM-TECH Award (ITU and UN). She is a tireless advocate for women in technology and engineering, serving on multiple non-profit boards, publishing Internet of Women, Accelerating Culture Change in 2016 and facilitating the launch of the Women in Standardization Expert Group for ITU.

Social Media: @monqiuejmorrow

> "Technology has revolutionized healthcare, made information accessible to all reaches of the globe, increased productivity, enhanced standards of living, and even changed human relationships. No other element has or will impact humanity to such an extent." -Nita Patel

NITA PATEL

Topical Expertise
- Leader/Leadership
- Innovator/Technologist
- Women Mentor/Mentorship

Session:
IEEE Women in Tech Meet Up
Monday, March 13, 2017
11:00AM – 12:00PM

Providing sustainable support for women in technology is one of the most talked-about issues in the tech industry. Many corporations and organizations are focused on inspiring girls to pursue careers in science, technology, engineering, and math (STEM); and on providing support for women in technology to advance in their careers. SXSW serves as the primary annual gathering for the tech industry, with participation from all levels: corporate, start-ups, investors, and tech non-profits, and it just makes sense to provide an opportunity for supporters of women in tech to gather. Join us to connect with other innovative minds, make new relationships, and discover opportunities to support women.

Biography

Nita Patel, P.E., PMP is Systems and Software Engineering Director at L-3 Technologies. In recognition for her technical contributions to the engineering profession and community, Nita was named the 2014 L-3 Engineer of the Year and the 2011 New Hampshire Engineer of the Year award.

Nita is the founder of IEEE Women in Engineering International Leadership Conference (WIE ILC), past International Chair of IEEE Women in Engineering. In addition, Nita has served as 2nd Vice President of the Computer Society, IEEE-USA VP Communications and Board of Governor Member for Eta Kappa Nu.

Outside of IEEE, she is active with Toastmasters International and the United States Chess Federation. Nita received her MS Computer Engineering, BS Electrical Engineering and BS Mathematics from Southern Methodist University in Dallas.

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> "Virtual – Augmented – Mixed Reality (VAMR) will touch and change every aspect of society one way or another. We will need to figure how to leverage that power in ways that will help us thrive as humans. The worlds of analog and digital don't mix, but they can coexist if we do it right." -Todd Richmond

TODD RICHMOND

Topical Expertise
- Virtual – Augmented – Mixed Reality (VAMR);
- "Emulsional Reality"
- VR/AR in education

Session:
The Promise and Danger Behind the Hype
Thursday, March 16, 2017
12:30 - 1:30 pm CT | JWM Salon 6

The hype around AR/VR is reaching a noisy crescendo as pundits sing the praises of immersive tech. Join seasoned AR/VR veterans Todd Richmond and Skip Rizzo as they lead a provocative debate on the practical realities of AR/VR and Mixed Reality. Discover promising and pioneering AR/VR therapies in use today and explore their benefits and future promise. Find out how immersive tech is also suited for darker uses, from brainwashing and gaslighting to torture. As developers attempt to realize the promises of AR/VR, this session examines many practical, moral and ethical considerations related to protecting the health and safety of people. Part of the IEEE Tech for Humanity Series.

Biography
By day, Todd Richmond is the Director of Advanced Prototypes at the University of Southern California's Institute for Creative Technologies (ICT). By night he is a musician, visual artist, and conceptual trouble maker. Todd coined the terms "Emulsional Worlds" and "Emulsional Reality" to describe the challenges humans face in an increasingly virtual world and how analog and digital can coexist. In a previous life Todd was a chemistry professor at The Claremont Colleges, where early in his faculty career he incorporated multimedia and Web technologies into his teaching and research. That work led him to evolve from his specific focus on chemistry to instead pursue a broader understanding of technology and content. This accelerated in 2000 when transitioning to become managing director of the USC Annenberg Center for Communication, a new media research center. In 2006, Todd moved to the ICT and currently he works in a variety of areas: emerging disruptive technologies and their implications/applications for training, learning, and operations; future environments for communication and collaboration; counter-IED and situational awareness training; immersive technologies; interactive education; visualization. He works closely with the USC School of Cinematic Arts and on the music tip, he has studied with Grammy-winning bassist Victor Wooten, and his band Nostatic released the album "Time's Up" in 2014. For those keeping score at home, Todd received a B.A. in chemistry from the University of San Diego, and went on to earn a Ph.D. in chemistry from Caltech, followed by a postdoctoral fellowship in protein engineering at the U.C. San Francisco.

Social Media: @emulsionalworld

IEEE Contact: Lloyd Green
l.g.green@ieee.org | mobile +1 408.724.1936

On-Site PR Contact: Cathy Palmen
c.palmen@interprosepr.com | mobile +1 408.621.7705

> "Clinical VR has a lot of promise to help treat various conditions from PSTD to depression. We will see VR used to create relevant simulated environments where assessment and treatment of cognitive, emotional and motor problems can take place under a range of stimulus conditions that are not easily deliverable and controllable in the real world." -Skip Rizzo

SKIP RIZZO

Topical Expertise
- Clinical virtual reality
- VR-enabling technologies
- VR challenges

Session:
The Promise and Danger Behind the Hype
Thursday, March 16, 2017
12:30 - 1:30 pm CT | JWM Salon 6

The hype around AR/VR is reaching a noisy crescendo as pundits sing the praises of immersive tech. Join seasoned AR/VR veterans Todd Richmond and Skip Rizzo as they lead a provocative debate on the practical realities of AR/VR and Mixed Reality. Discover promising and pioneering AR/VR therapies in use today and explore their benefits and future promise. Find out how immersive tech is also suited for darker uses, from brainwashing and gaslighting to torture. As developers attempt to realize the promises of AR/VR, this session examines many practical, moral and ethical considerations related to protecting the health and safety of people. Part of the IEEE Tech for Humanity Series.

Biography

Albert "Skip" Rizzo is the Director for Medical Virtual Reality at the University of Southern California Institute for Creative Technologies and has Research Professor appointments with the USC Dept. of Psychiatry and Behavioral Sciences, and at the USC Davis School of Gerontology. Dr. Rizzo conducts research on the design, development and evaluation of Virtual Reality (VR) systems targeting the areas of clinical assessment, treatment and rehabilitation. This work spans the domains of psychological, cognitive and motor functioning in both healthy and clinical populations. In the psychological domain, the Virtual Iraq/Afghanistan project has focused on the creation of a VR prolonged exposure therapy application for combat and military sexual trauma-related PTSD with OIF/OEF service members and veterans. This system is now being retooled for a stress resilience/coping strategy-training application for use at prior to a combat deployment. His cognitive work has addressed the use of VR applications to test and train attention, memory, visuospatial abilities and executive function. In the motor domain, he has developed VR Game systems to address rehabilitation post stroke and Traumatic Brain Injury. He is also involved with ICT collaborators in the creation of artificially intelligent virtual human patients that clinicians can use to practice skills required for challenging clinical interviews and diagnostic assessments (sexual assault, resistant patients, etc.) and for creating online virtual human healthcare guides for breaking down barriers to care in psychological health and TBI. In spite of the diversity of these areas of research and development, the common thread that drives all of these applications involves the study of how VR simulation technology can be usefully applied to serve the needs of clinical users in a manner that goes beyond what is available with traditional 20th Century tools and methods.

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> "Technology is a tool for self-discovery, driving patients' knowledge of their own data in the context of their own lives, and thus empowering them to take control of their own health. Technology is also a democratizing force in healthcare - it provides access to services that would otherwise be unobtainable whether through a lack of access or affordability." -Leslie Saxon

LESLIE SAXON

Topical Expertise
- Digital Health
- Human Performance
- Medical device cybersecurity and data privacy

Session:
Euthanizing Our Global System of "Sick Care"
Tuesday, March 14, 2017
12:30 - 1:30 pm CT | ACC 8ABC

In an era of exploding population growth, chronic illness and new pandemics, our healthcare systems cannot scale, and demands outstrip global resources. But, are we facing a global healthcare crisis or is this an age of unprecedented health-care opportunity? Find out why our current systems of 'sick care' fail us and how digital can help scale healthcare for the future. Discover how a human-centered redesign to our healthcare systems can drive new, proactive models of care that mesh better with people's lives, support physicians and caregivers, reward positive behavior, improve health outcomes and protect human dignity, privacy and security. Part of the IEEE Tech for Humanity Series.

Biography
Dr. Leslie Saxon is a Professor of Medicine, Clinical Scholar, at the Keck School of Medicine of USC. Dr. Saxon specializes in the diagnosis and treatment of cardiac arrhythmias and preventing sudden cardiac death. Dr. Saxon received her medical degree from the Ross University School of Medicine. She completed her internship and residency at St. Luke's Hospital Washington University, and fellowships in cardiology at Rush-Presbyterian-St. Luke's Medical Center in Chicago and UCLA. Dr. Saxon has completed over 100 publications in various medical journals and is an active member of a multitude of organizations, including the American Heart Association, and the Heart Failure Society of America. She is also a fellow of the American College of Cardiology and the Heart Rhythm Society. Dr. Saxon is also the Executive Director of the internationally acclaimed USC Center for Body Computing (CBC). The CBC is currently a place for all USC schools, including medicine, engineering, business and cinematic arts, to form interdisciplinary relationships and accelerate the future of fully integrated, "connected" medicine. Dr. Saxon participates in the pre-clinical and clinical development and testing of wearable and implanted technology, including networked devices used in medicine, wellness, and fitness disciplines. With her clinical expertise, she is a valuable strategist in developing device models and software solutions that offer engaging user-feedback based on real-time physiologic data. Her cultivation of critical innovative partnerships to jointly commercialize products within the CBC is essential for furthering and improving the dissemination of medical information, enhancing communication and improving health outcomes. Dr. Saxon has spoken at various forums including TEDMED, SXSW, and WIRED Health and is regularly quoted in popular press (WSJ, NYT, BBC and Fast Company).

Social Media: @DrLeslieSaxon

> "Robotics will enable the production of most goods and many services at very little cost, leading to a world of plenty. Additionally, robots will augment peacekeeping by guaranteeing safety and providing services during face-to-face dialog and diplomacy in conflict scenarios." -Luis Sentis

LUIS SENTIS

Topical Expertise
- Robotic startups
- Cognitive modeling
- Developing human-centric robots

Session:

A Developer's Primer for Coding Human Behavior Bots
Sunday, March 12, 2017
**11:00 am - 12:00 pm CT | TBD**

This session will demonstrate ways to model human-robot interaction (HRI) using a practical coding scenario. We'll explore how to program a listening humanoid robot that manages its eye contact to maximize "connection" and minimize "social awkwardness" in human interaction. This session will address many practical computational questions and frame cognitive modeling problems based on intuitive mechanical analogies. Find out how to leverage the power of feedback optimal control to generate useful behaviors – and see the results as we demonstrate outcomes on the Dreamer Humanoid robot!

Biography

Luis Sentis is an Associate Professor in Aerospace at the University of Texas at Austin, co-founder of Apptronik Systems Inc., and contractor for NASA Johnson Space Center. He received a Ph.D. from Stanford University and was a La Caixa Foundation Fellow. He worked in Silicon Valley in the high-tech sector leading R&D projects in clean room automation. In Austin, he leads the Human Centered Robotics Laboratory and the new Cognitive Ubiquitous Robotics Group. He writes extensively in areas related to realtime optimal control of human-centered robots, control of humanoid robots, safety protocols in robotics, and design of humanoid robots. He has over a 100 publications in top-tier scientific journals and proceedings. He was awarded the NASA Elite Team Award for his contributions to NASA's Johnson Space Center Software Robotics and Simulation Division. He recently became a member of the UT System National Security Advisory Committee.
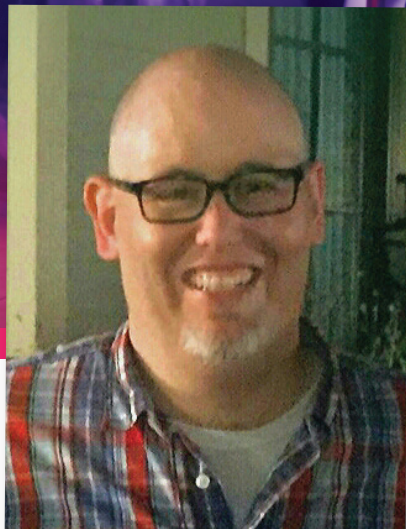
> *"Getting a group of people who don't know each other to agree on a shared set of facts is expensive and time consuming. Much of our social structure is built around institutions that manage processes to define the truth about these shared facts. Blockchain and other distributed ledger technologies have the capability to augment - and one day ultimately replace - the role of intermediaries, driving inefficiencies and costs out of every transaction."*
> **-Christopher Swanson**

Topical Expertise
- Blockchain
- Banking and Financial Services
- Banking of the Future

CHRISTOPHER SWANSON

Session:
Beyond Fintech: Blockchain for Every Industry
Friday, March 10, 2017
12:30 - 1:30 pm CT | JWM Salon 7

If you haven't been tracking blockchain because you thought it was just for cryptocurrencies and fintech startups, it's time to start. Innovators in banking (U.S. Bank), entertainment (Sceneplay) and technology (Cisco and Cognizant) will get your brain buzzing about blockchain's broader potential by sharing how they're using it to speed lending, turn scripts into 21st century collaboration tools, document refugees and more. You'll understand how distributed ledger tech can store any kind of content in a way that evolves it into a verified, immutable source of truth—and leave able to apply blockchain's principles and possibilities to your own work. Part of the IEEE Tech for Humanity Series.

Biography
As a Vice President in U.S. Bank's Innovation Research & Development practice, Chris Swanson is an expert in creating new revenue streams and pioneering new market entries. Chris' financial services background includes product development and management, digital strategy, data analytics and small business banking. A business creative and product designer with 15 years of experience in the financial services industry, Chris is responsible for discovery, design, and development of emerging fintech experiences, technology evangelism and venture partnering, in addition to leading the bank's blockchain/distributed ledger practice. Chris brings a technical, commercial and philosophical perspective to blockchain. He can articulate how it works in everyday language, offer real-world use cases where it is being tested and applied, and discuss benefits and potential pitfalls as it is scaled. Perhaps unlike others in the financial services industry, he believes blockchain's greatest value will be outside banking, and has given considerable thought to how it may affect adjacent industries such as healthcare, insurance and government. His analogy: most people first logged on to the Internet in the 90s for email and chat rooms—awesome and totally different, but in hindsight twenty years on, pretty vanilla. Blockchain for banking is like email; blockchain for everything else is like Netflix. He is a graduate of the Carlson School of Management at the University of Minnesota with an MBA in Finance and Strategic Management, and holds a Bachelor's degree in Philosophy from Hamline University.

Social Media: @thewindowcube

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> "The whole world is shifting from models that were about buildings, people and products into models that are about mobile devices, software and services. The most important computer network on the planet is the smart phone and it's going to be in everyone's pocket. It will be used as the backbone for how we deliver healthcare, financial services, education, pensions and many other essential needs of daily life. Most importantly, this approach will more rapidly emancipate billions of people around the globe and help them join the middle class, which will benefit all of humanity." -Andrew Thompson

ANDREW THOMPSON

Session:
Euthanizing Our Global System of "Sick Care"
Tuesday, March 14, 2017
12:30 - 1:30 pm CT | ACC 8ABC

In an era of exploding population growth, chronic illness and new pandemics, our healthcare systems cannot scale, and demands outstrip global resources. But, are we facing a global healthcare crisis or is this an age of unprecedented health-care opportunity? Find out why our current systems of 'sick care' fail us and how digital can help scale healthcare for the future. Discover how a human-centered redesign to our healthcare systems can drive new, proactive models of care that mesh better with people's lives, support physicians and caregivers, reward positive behavior, improve health outcomes and protect human dignity, privacy and security. Part of the IEEE Tech for Humanity Series.

Topical Expertise
- Vision of Digital Medicine
- Aiding the Underserved via Smart Phones
- Changing speed to knowledge through Digital Humanities

Biography

Andrew Thompson is Co-Founder, President and Chief Executive Officer of Proteus Digital Health. His vision for digital medicines is focused on expanding global access to care, dramatically increasing the value delivered by drugs and creating a more sustainable model for innovation that leverages the cell phone in everyone's pocket. He is also a Co-Founder and Board Member of Summit Schools, a leading Charter School organization with an acclaimed track record and unique digital platform, featured in the Davis Guggenheim movie "Waiting for Superman".

Thompson is active in digital humanities innovation as a Member of the Stanford University Libraries and Academic Information Resources Council and with Cambridge University. He is a Co-Founder of Parker Library Online - a leading destination for digital medieval studies.He holds master's degrees in Engineering (Cambridge), Education (Stanford) and Business (Stanford GSB) and has a successful 25-year track record starting and building technology-based healthcare companies in Silicon Valley.

Social Media: @ProteusCEO

IEEE TECH FOR HUMANITY SERIES »»»

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> "Technology is an extension of humanity. Increasingly our technology takes care of the automatic things that technology is good at (like automatic payments, data analysis, life management, transportation, logistics), which leaves us to focus on the human experiences of life (emotions, relationships, pleasure, nature, family, animals). Humans create technology to augment themselves and improve their human experience." -Heather Vescent

HEATHER VESCENT

Session:
AI and the Suburbanization of the Mind
Thursday, March 16, 201
2:00 - 3:00 pm CT | JWM Salon 6

The hype around AR/VR is reaching a noisy crescendo as pundits sing the praises of immersive tech. Join seasoned AR/VR veterans Todd Richmond and Skip Rizzo as they lead a provocative debate on the practical realities of AR/VR and Mixed Reality. Discover promising and pioneering AR/VR therapies in use today and explore their benefits and future promise. Find out how immersive tech is also suited for darker uses, from brainwashing and gaslighting to torture. As developers attempt to realize the promises of AR/VR, this session examines many practical, moral and ethical considerations related to protecting the health and safety of people. Part of the IEEE Tech for Humanity Series.

Topical Expertise
- Augmented Intelligence
- Future Economic Systems
- CyberSecurity

Biography

Heather Schlegel is a professional social scientist helping you understand the future. Her research focuses on positive visions of the future and solving humanity's grand challenges. She is the creative director of The Future of Money series, producer and creator of 3 short future films, including "Fly Me to the Moon;" which was nominated for Most Important Futures Award by the Association of Professional Futurists. Schlegel started in Silicon Valley in 1996 and helped build and launch over 50 Internet products at more than 30 startups.

Social Media: @heathervescent

"The end of Moore's Law is not really an end—this progress has taken us to the beginning of technology that can deliver true benefits to humanity. Systems will quickly move beyond their current capabilities in computing and communication. Effective and affordable artificial intelligence will combine with awareness of the physical world, providing widespread advancements from general efficiency to personal health." -Greg Yeric

GREG YERIC

Session:
Going Beyond Moore's Law
Tuesday, March 14, 2017
11:00 am - 12:00 pm CT | JWM

In 1965, Gordon Moore predicted that the number of components in integrated circuits would grow exponentially. The impact of Moore's Law is all around us, in the myriad of gadgets, computers, and networks that power modern life. But the winning streak can't last forever. The value of Moore's Law is already on the wane. To keep making computers better and better, researchers are turning to new technologies, including circuits modeled on the human brain, carbon nanotube computers, and processors that make do with approximate rather than exact answers. Join Rachel Courtland, IEEE Spectrum, along with leaders in this new space, to discuss the end of Moore's Law and what will replace it.

Topical Expertise
• Children of Moore's Law: Technology advancements beyond cost-per-bit
• Systems and technology beyond Moore's Law
• Mini-singularities are already here

Biography

BSEE, MSEE, PhD EE: University of Texas at Austin Various computer chip technology research and development roles at Motorola, TestChip Technologies, HPL Technologies, Synopsys, and ARM. Currently: ARM Fellow and director of the Future Silicon Technology group in ARM Research. Lives in Austin, TX.

IEEE Tech for Humanity Series Schedule

SESSION	DATE/TIME	SPEAKERS
Beyond Fintech: Blockchain for Every Industry	March 10, 2017 12:30 - 1:30 pm CT	Lynne LaCascia Ann Greenberg Christopher Swanson Monique Morrow
Ethically Aligned Artificial Intelligence	March 11, 2017 9:30 - 10:30 am CT	Konstantinos Karachalios Derek Jinks John C Havens Kay Firth-Butterfield
Hearables & The Age of Mediated Listening	March 11, 2017 9:30 - 10:30 am CT	Stuart Karten Poppy Crum Simon Carlile
Brain Wearables	March 11, 2017 5:00 - 6:00 pm CT	Tan Le
A Developer's Primer for Coding Human Behavior Bots	March 12, 2017 11:00 am - 12:00 pm CT	Luis Sentis
An Internet For & By the People	March 12, 2017 12:30 - 1:30 pm CT	Vint Cerf
Not Your Mama's Wearables	March 13, 2017 12:30 - 1:30 pm CT	Thad Starner Melody Jackson
Engineering Life: Artificial Genome Sequence	March 13, 2017 12:30 - 1:30 pm CT	Andrew Hessel Marcy Darnovsky
Going Beyond Moore's Law	March 14, 2017 11:00 am - 12:00 pm CT	Greg Yeric Tom Conte Tsu-Jae King Liu
Euthanizing Our Global System of "Sick Care"	March 14, 2017 12:30 - 1:30 pm CT	Andrew Thompson Leslie Saxon
AR/VR: The Promise and Danger Beyond the Hype	March 16, 2017 12:30 - 1:30 pm CT	Skip Rizzo Todd Richmond
Artificial Intelligence and the Suburbanization of the Mind	March 16, 2017 2:00 - 3:00 pm CT	Heather Vescent BC Biermann Jay Iorio