



Welcome

IEEE Health and Electronics Conference

November 11, 2022, 8 am PST

Live Stream from Seattle Washington



All times are exact. You may come and go as you please. Today's presentation is being recorded so please mute your microphones if you are not speaking and type any questions you may have into the chat box.

Speaker Line up:

08:00 am PST IEEE Announcements, induction of our special guest, speakers, and sponsors

08:10 am PST Debbie Reynolds, Founder, Chief Executive Officer, and Chief Privacy Officer, Debbie Reynolds Consulting, LLC

08:35 am PST Dr. Paul Cunningham, Executive Director, IST-Africa Institute; President & CEO, IIMC; Director, IEEE Division VI

09:00 am PST Yuri Quintana, Chief, Division of Clinical Informatics, BIDMC at Beth Israel Deaconess Medical Center

09:25 am PST Parimal Shah, GM, SVP & GM Visualization SVP & GM Visualization Verathon Inc., Roper Technologies, Inc.

10:50 am PST Ralph Perrine, Founder, Innovation Garage and S3T, Emerging Tech & Innovation Leader

11:15 am PST Ali Saffari, Director Innovation and Product Development, Experian Health

11:40 am PST Sreeram Dhurjaty, Analog, X-Ray Power, Retrofittable Digital Radiography, Distinguished Speaker, IEEE CTSoc

12:05 pm PST Greg Billington, Visa Global Commercial Card Strategy, OLY, PLY, Senior Product Manager

12:30 pm PST Maria Palombini, Global Practice Leader, Healthcare & Life Sciences Founder Disruptive Rx™ Media

12:55 pm PST Randy Duguay, CEO, Health Gauge & AIML-Innovations

1:20 pm PST Leonard Tan, Pharmaceutical Manufacturing, Leadership, Finance, Engineering, Non-Executive Research Scientist

1:45 pm PST Naomi Edwards, Biomedical Equipment Specialist at Mount Sinai Health System

2:10 pm PST Dr. Merrick Watchorn, Co-Founder, Quantum Security Alliance / IEEE Quantum Cybersecurity Chair

2:35 pm PST John Black, Biophotonics engineer Founder, Glannaventa, Inc.

3:00 pm PST IEEE Prize Pack Give away with special guest

3:10 pm PST Special Presentation: Salute to our Speakers, Sponsors and Special Guests

Register at: <https://events.vtools.ieee.org/m/325146>





Smart Health (IoT) : Opportunity, Privacy, and Risks

Debbie Reynolds

Bio

Debbie Reynolds is the Founder, CEO, and Chief Data Privacy Officer of Debbie Reynolds Consulting LLC. Debbie Reynolds, “The Data Diva,” is a world-renowned technologist, thought leader, and advisor working at the intersection of Data Privacy, Technology, and Law. Ms. Reynolds is an internationally published author, highly sought speaker, and top media presence about Global Data Privacy, Data Protection, and Emerging Technology issues.

Ms. Reynolds hosts the number one global award-winning “The Data Diva” Talks Privacy Podcast. She has been named one of the Global Top Eight Privacy Experts by Identity Review in 2022, and she has been named one of the Global Top 30 CyberRisk Communicators by The European Risk Policy Institute in 2021.

Ms. Reynolds has been appointed by the U.S. Department of Commerce to the Internet of Things (IoT) Advisory Board in 2022 and serves as the IEEE Committee Chair for Cyber Security for Next Generation Connectivity Systems at IEEE for Human Control & Flow. Ms. Reynolds is the Global Data Privacy advisor for AR VR XR Spatial Computing Privacy Framework Evaluation Committee for XRSI, Advisory Council Member for Technology Company Titanium, Inc., Technology & Cybersecurity Committee Member of the New York State Bar Association (NYSBA), Founding Executive Member of Digital Directors Network (DDN) – Board members for Data Privacy & Cybersecurity, Advisory Board Member Enterprise Management 360 (EM360) UK, Advisory Board Member and Faculty for Advisory Board Member & Contributor, International Journal for the Data Protection Officer, Privacy Officer, and Privacy Counsel, The Data Litigator. Ms. Reynolds has also served as an Adjunct Professor at Georgetown University and Cleveland Marshall College of Law.

<https://www.linkedin.com/in/debbieareynolds/>

08:35 am PST Dr. Paul Cunningham, Executive Director, IST-Africa Institute; President & CEO, IIMC; Director, IEEE Division VI



Paul M Cunningham, Director, IEEE Division VI; Executive Director, IST-Africa Institute; President & CEO, IIMC

Co-Sponsorship by UK and Ireland SSIT Chapter

- Technology, strategy, and policy expert for international and national government organizations as well as European and nationally funded research and innovation programs in Europe and Africa
- Co-Design of technology solutions addressing complex societal challenges in resource constrained environments
- Organises ministerial level technology research and innovation conferences in Europe and Africa

Specialties:

- Science, Technology and Innovation related Policy Formulation
- Management of research programmes
- Collaborative Open Innovation and Co-Design
- mHealth Information Systems
- eGovernment and eParticipation
- Living Labs and Innovation Spaces
- Networked and Virtual Enterprises
- Technology Enhanced Learning and eSkills

<https://www.linkedin.com/in/prof-paul-m-cunningham-151541/>

09:00 am PST Yuri Quintana, Chief, Division of Clinical Informatics, BIDMC at Beth Israel Deaconess Medical Center



Yuri Quintana

Bio

Chief, Division of Clinical Informatics, BIDMC at Beth Israel Deaconess Medical Center.

With over 15 years of academic and administrative executive experience, I have steered global digital health technology and innovation at Harvard Medical School and St. Jude Children's Research Hospital. Throughout my career, I have established a solid reputation and success as a Global Health Leader with a wealth of expertise in the development and delivery of novel global digital health platforms, collaboration systems, and apps, including international clinical trials, telemedicine, mobile health, and clinical informatics. As a strategic Partnership Builder, I fostered close collaborations with international and national stakeholders and partner clinics to secure their buy-in in the development and launch of global digital health platforms.

Specialties: medical informatics, telehealth, remote patient monitoring, mobile health, pharmacy informatics, learning health systems, global health, ehealth, online learning, international operations, artificial intelligence, decision support systems, evidence-based medicine.

<https://www.linkedin.com/in/yuriquintana/>

09:25 am PST Parimal Shah, GM, SVP & GM Visualization SVP & GM Visualization Verathon Inc., Roper Technologies, Inc.



Parimal Shah

Bio

Healthcare executive with 25+ years' experience directing product portfolios ranging from \$0.5-\$1B in medical imaging and critical care devices. Drove double-digit growth while managing \$50-\$150MM in organic investment and acquisitions.

<https://www.linkedin.com/in/parimalshah/>

10:50 am PST Ralph Perrine, Founder, Innovation Garage and S3T, Emerging Tech & Innovation Leader



Ralph Perrine

Ralph shares the latest industry analysis combined with some unexpected insights about the actionable opportunities in healthcare for 2023. Together these concise points surface timely answers for current questions:

Key growth opportunities in healthcare

Emerging skills to focus on

How to position your organization

Best strategies for driving adoption of health innovations in 2023

Bio

Founder, Innovation Garage and S3T, Emerging Tech & Innovation Leader

Ralph Perrine is a results-oriented change leader experienced in applying innovation to optimize existing organizations or build new ones. Trusted partner and problem solver who consistently creates expanded opportunities for others to achieve and advance, with demonstrated commitment to diversity and team success. Ralph is the founder of the award-winning Innovation Garage and its portfolio of solutions at Blue Cross NC. Ralph is also founder of the CarePath Medical Council and serves on the Strategy Council of the International Society of Service Innovation Professionals. Ralph's previous experience includes technology leadership roles in US and international startups and growth-oriented companies. His entrepreneurial background and diverse industry experience give him a keen eye for opportunities to leverage emerging technologies for business value.

<https://www.linkedin.com/in/ralphperrine/>



Ali Saffari

Applied innovation: How modern innovation techniques in healthcare help entrepreneurs and corporate executives drive impact

In today's business environments, innovation has become a critical core competency in both entrepreneurial and corporate environments, especially in the healthcare industry. Whether you're a startup aiming for a significant exit, a technologist working with corporate teams to deliver scaled solutions to market, or just determining your next strategic steps, this session will include discussion and a live demonstration to help you learn how to take a holistic approach to applying modern innovation techniques to your business endeavors and drive real impact.

Bio

Ali Saffari is the Director of Innovation and New Product Development at Experian Health. In this role, he is a leader of the full product lifecycle, driving high-performing teams to prioritize high-priority market problems and deliver scaled bottom-line impact.

Ali is an experienced innovation leader in several industries, including healthcare, financial services, B2B marketing, automotive, fraud and identity management. He participates regularly in executive thought leadership summits to provide expert guidance and define strategic plans.

Ali has achieved multiple healthcare technology patents as an inventor, working to remove the friction between patients, providers, and the growing challenges with accessing quality healthcare leveraging artificial intelligence and machine learning. Ali has also won multiple awards in his industry, including the Global Experian Social Innovation Award for his work towards helping underserved communities navigate the complexities of the United States healthcare system, and the Los Angeles Times Visionary of the Year.

<https://www.linkedin.com/in/ali-saffari/>



Sreeram (Ram) Dhurjaty, PhD, LSMIEEE

Distinguished Speaker IEEE, CTSoc

Ram held senior positions in engineering and research, in medical systems, at Eastman Kodak Company, Analogic, and Bose Corporation before embarking on a career of full-time consulting. He was educated at IIT Bombay and Yale University and has degrees in Civil Engineering, Fluid mechanics, Electronic Instrumentation, Biomedical Engineering, and Control System Theory. Over his career he has designed medical systems such as Patient Monitors, Defibrillators, CT scanners, Fetal Monitoring systems, Digital and Computed Radiography, and Telemedicine. He has written standards for ECG systems and Defibrillators for AAMI. He was the past chair of the IEEE, Rochester NY section.

Ram has consulted for universities as well as Industry, including some fortune 100 companies. His consulting includes Strategic-Technology Consulting, Designing, and implementing research systems for Universities, System design and implementation for the medical device industry. His consulting includes precision Analog circuitry, High Voltage Power supplies and Magnetics for X-Ray systems.

He has 16 issued patents in areas of medical devices and systems. His significant Inventions include a Hand-Cranked defibrillator and the retrofittable Digital Radiography system.

Ram is a mentor to several startups in the Rochester, NY area and is also involved in STEM science fairs. He likes working with young people.

Ram is a Life senior member of the IEEE, Emeritus member of AAPM, member of AHA and member of SPIE

<https://www.linkedin.com/in/dhurjaty/>



Fitbits Health Tracking

Greg Billington

Bio

Strategy across large market commercial products, specializing in cross border, digital wallet, and sustainability solutions.

Graduate of Visa's Olympian and Paralympian Business Development Program (OPBDP), a 24-month program for retired Olympians/Paralympians which places participants in four six-month rotations throughout divisions in the company.

2 years of experience as a Business Development Associate. Delivered consulting engagements, signed issuing agreements, and launched a product website in the following functions: Visa Business Solutions, Visa Consulting and Analytics, Visa Direct Commercialization, and NA Community Issuer Sales.

Olympian - Competed for the US Triathlon Team in the 2016 Olympic Games and, while working full-time at Visa, raced the 2020 US Olympic Marathon Trials, finishing 37th in 2:17:21. Passionate about enhancing career performance through health and wellness based on skills developed during a 7-year professional triathlon career.

<https://www.linkedin.com/in/gregorybillington/>



Maria Palombini

Setting the Standard for Wearable Technologies to Sustain a Longer Life

Most current and explosive future waves of wearable technologies in the health/wellness category are designed to monitor - what value is that monitoring bringing to sustaining good health and/or extending life span. Data is just data if it is not active; it only becomes an asset when it delivers value. This session will discuss important issues including are the current class of health wearables delivering any quality of life different than before; how they are integrated into the overall care plan of the patient; and finally, what current IEEE standards are available, what is in the works; and what is needed to move the needle on these technologies to remove the hurdles to innovation. Topics to be addressed include security, patient data governance, integration, algorithm validation and more.

Bio

MARIA PALOMBINI, MBA
Director, Healthcare & Life Sciences Global Practice Lead,
IEEE Standards Association

As the practice leader, Maria is focused on engaging and leading a global community of multi-disciplinary stakeholders to openly collaborate and develop solutions to enable trust in and validation of breakthrough technologies/applications that will enable sustainable equitable access to quality care, privacy, and protection for ALL individuals. Working with multidisciplinary volunteer experts from across the globe to drive trust in adoption of new technologies and frameworks in telehealth, decentralized clinical trials, digital mental health therapeutics, food sustainability and security and precision therapeutics.

Maria is an entrepreneur having founded various companies including Disruptive Rx™ Media, the first information company to bring awareness of pragmatic uses of emerging technologies and applications within therapeutic development value chain that will enable patient-driven therapeutics. Maria's professional highlights include global brand and communications leader for one of the world's largest mining investment platforms in Africa and bringing innovative communication and information products to global markets and various industries including financial, bio/pharmaceutical, agriculture, natural resources, and telecommunications.

Maria currently holds an MBA from the Rutgers Graduate School of Business and a BA and BS from Rutgers College at Rutgers University, the State University of New Jersey.

<https://www.linkedin.com/in/mpalombini/>



Randy Duguay

Digital health solutions have been evolving for many years, but the promise of new technological innovations can only be realized by understanding and addressing how they fit and work within people's lives in day-to-day settings. Our health systems are well defined in acute and episodic care and are slowly improving in supporting people's interest in ongoing personal health monitoring.

Current core health systems have been largely designed such that people need to travel between different clinical settings (doctors' offices, labs, imaging facilities, hospitals, care facilities) – but with the advent and distribution of advanced sensors in wearable tech, implantable tech, patch-based technologies and, advanced micro-electronics – the ability for people to both understand and engage with care providers within their community

and at home is expected to increase. New IoT, mobile applications, and advanced high-speed wireless and data solutions will make it easier for doctors and health care providers to serve people at home in ways that we are just starting to appreciate.

Making these new all-encompassing sensor and virtual care solutions easy to understand and apply is still an undertaking and many opportunities exist to improve them.

Bio

Randy Duguay is currently the CEO of Health Gauge – a company that brings together key advancements in the areas of health sciences, advanced sensors, and leading-edge computing techniques such as machine-learning software, predictive analytics, and artificial intelligence to create a dynamic solution serving people's interests in meaningful, accurate, and personalized health information.

Randy has a background in Engineering (B.Sc. Electrical & Computer; M.Eng. Management) and has completed executive development programs with University of Toronto (Rotman Business School). Randy worked for 25 years with TELUS Communications, one of Canada's leading telecommunications companies, and worked for 10 years as part of TELUS Health – Canada's largest digital health services company.

<https://www.linkedin.com/in/randyduguay/>



Leonard Tan

Bio

Leonard Tan holds a bachelors in Electronics and Electrical Engineering from the Nanyang Technological University, Singapore, a master's in biomedical engineering from the University of New South Wales, Australia, and a PhD in Computer Science from the University of Southern Queensland, Australia. Since 2020, he has accumulated over 12 publications at selective high impact journals and more than 25 years of experience in applied research industries - ranging from autonomous vehicles to high performance computing. He is currently non-executive director to Rolling Pastures and Rolling Investments and is also a research consultant to NTU by contract. As a data scientist, his most recent development includes classifying and predicting onset of mental afflictions using stochastically engineered linguistic features with novel Machine Learning architectures. As a technopreneur in the food technology space, he holds the role of CTO and develops edible electronics as an approach to smart health monitoring, leading the company's vision.

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Naomi Edwards

Today, she will be sharing with us the responsibilities of a Biomedical Engineering Technician which includes maintenance and on-site response on a wide variety of equipment. Infusion Pumps, Hypo- hyperthermia Machines, Anesthesia Machines, Ventilators, Patient Monitoring and more.

Naomi is a proud product of Barbados located in the Atlantic Ocean. There, she attended the University of the West Indies pursuing Physics. She graduated with Upper Second Class Honours in Physics with Medical Electronics then pursued a master's degree in New York. Naomi graduated from New York Institute of Technology with a Distinction in Bioengineering and currently works as a Biomedical Equipment Specialist within the Mount Sinai Health System in New York City. She has also completed a Healthcare Management Certification from Cornell University and enjoys staying abreast on technological advancements within the medical field.

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Dr. Merrick Watchorn

Bio

Dr. Merrick S. Watchorn, DMIST current research is focused on quantum information science, cloud computing, cybersecurity, and open-source intelligence technologies. He is a pragmatic subject matter expert, blending his academic success with nearly three decades of government and commercial experience. He also provides a myriad of services within the Cybersecurity industry based on his sixteen-years of active service in the United States Navy (USN) and the last several within the United States Government (USG). His work background included formal training in semantic ontologies, Big Data analytics, machine learning and artificial intelligence methods, theories, and cognition. As a co-founding member of the Quantum Security Alliance (QSA), he serves as Chair for the Security Reference Architecture (Q-SRA). He has expansive computer and systems experience, including business systems development, complex networking, database management, and advance programming requirements in classified and unclassified programs. He has proven experienced team leader, supervisor, and resource manager; with extensive inter-agency experience, while acting as a senior military liaison for all branches of the Department of Defense; including Senior North Atlantic Treaty Organization personnel. He has worked in and around the Washington, DC metropolitan area for the last ten years and provided support for numerous government agencies in distinct roles. He is a former U.S. Military Service member with several years of work in and around the Department of Defense (DoD), Department of Commerce (DoC), Intelligence Community (IC), and Pentagon Force Protection (PFP). He has broad experience as a government certified Automation Data Protection Officer (ADPO), Information Security Systems Officer (ISSO), and Information Security Systems Manager (ISSM), and acted as a directorate level Security Officer for the DoD.

<https://www.linkedin.com/in/watchorn/>



John Black

Light Detection and Ranging (LiDAR) has become ubiquitous in modern-day autonomous vehicle technology and in robotic platooning and collision-avoidance strategies. Optical Time-Domain Reflectometry, where a short pulse of light is sent out and the arrival time of the returning photons yields a distance to target, is a common embodiment of LiDAR, but has limited range and is prone to interference. Another embodiment is Optical Frequency Domain Ranging, where a frequency-modulated continuous wave (FMCW) optical source is split into signal and reference paths, and where the light returning from the target is recombined with the reference local oscillator in an interferometric heterodyne detection scheme. OFDR has several advantages over OTDR, including allowing the use of coherent detection, which extends the dynamic range of the system by several orders of magnitude, and much higher immunity to background light and other

interference. Real-time imaging ranges of > 40 km in (clean) air with resolutions around 50 meters, and > 40 meters in ocean seawater with a resolution of ~5cm are quite possible, with minimal dead volume and with access to Doppler information from the motion of the target. In this talk we will discuss the biophotonics embodiment of FMCW LiDAR, Swept-Source Optical Coherence Tomography, and how biological tissues with attenuation coefficients as high as 10 – 20 dB/mm round-trip can be imaged with near-cellular-level 5-micron resolution over a few mm of depth using contemporary fiber optics technology to provide surgical tools with real-time diagnostic and therapeutic image guidance.

Bio

John Black has over 25 years of experience in the medical, scientific / research and industrial segments of the lasers and photonics industry. He founded Glannaventa to develop an outpatient endoscopic imaging technique to screen for the most lethal histotype of serous ovarian cancer, and consults with companies in laser design and development, optical coherence tomography (OCT), medical device design and development, image-guided surgery, and optical remote sensing. He led the optical engineering team at Foxhollow Technologies (now Medtronic) in the successful development of the Nighthawk™ image-guided plaque excision catheter, the first real-time OCT-guided intravascular surgical procedure performed in humans, and possibly the first OCT-guided human surgical procedure of any kind. Prior to Foxhollow he worked at Lightwave Electronics (now Lumentum), initially on advanced fiber lasers for RGB projection systems in consumer electronics, and subsequently on the design of the Xcyte compact ultraviolet mode-locked laser for flow cytometry. John has a B.Sc. in Chemistry and a PhD in Physical Chemistry from the University of Nottingham. He received a SERC/NATO Research Fellowship to do post-doctoral research in photochemistry at Stanford University and was a post-doctoral research fellow at Columbia University developing new lasers for molecular spectroscopy and reaction dynamics. John has 30 publications and 15 issued US patents in the fields of molecular reaction dynamics, laser design and development, photochemistry, biophotonics, optical diagnostics and medical devices. He is an IEEE Senior Member, past chair of the Santa Clara Valley Engineering in Medicine and Biology Society, guest lecturer at the University of Arizona Biomedical Engineering department, and a member of OSA, APS, SPIE and Sigma Xi.

<https://www.linkedin.com/in/john-black-87a7691/>

3:00 pm PST

IEEE Prize Pack Give away with special guest

3:10 pm PST

Special Presentation: Salute to our Speakers, Sponsors and Special Guests



Thank You!

For joining us today for the

IEEE Health and

Electronics Conference

