Colorado Photonics Expo & Gala Speakers & Panelists

6D Laser, Stephen Uhlhorn, CTO
Bringing Ultrafast Laser Machining to a Broader Market **4:30pm Ballroom E**

Stephen Uhlhorn received his BS and MS degrees in Biomedical Engineering from the University of Miami, and his PhD from Vanderbilt University in Nashville, TN, also in Biomedical Engineering. While at Vanderbilt, he studied pulsed laser ablation for surgical applications. Following graduate school, he was a post-doctoral researcher, and then on the research faculty of the Bascom Palmer Eye Institute, at the University of Miami School of Medicine. There, his research was focused on developing new applications for OCT imaging in the eye. Since leaving academics, he has consulted for various photonics companies, and has now founded 6D Laser, LLC.

Ball Aerospace, Erin Wolf, Program Manager and Comissioning Team Lead
Webb: Achieving the Amazing **1:10pm Ballroom E**

Erin Wolf has worked on Webb since 2009, at NASA's Goddard Space Flight Center and then at Ball Aerospace. Before her role as Ball's Webb program manager, she worked with the Instrument teams, and optical test team to execute the significant cryotesting and calibration efforts on JWST. In addition to Webb, Erin contributed to Landsat 9's TIRS-2 instrument and to Hubble Servicing Mission 4, Advanced Camera for Survey Repair. Erin received her B.S. in physics from the University of Puget Sound in Tacoma, WA.

ColdQuanta, Anjul Loiacono, VP Signal Processing
Career Panel **3:00pm Ponderosa Ballroom**

Dr. Anjul Loiacono is the Vice President of the Quantum Signal Processing division at ColdQuanta. Her division is responsible for creating cloud-based platforms that will lower the barrier of entry into quantum technology design and discover, their first product, named Albert, received this year's Prism Award for Quantum Innovation. Anjul's educational background is in biomedical engineering with a focus on optics. She received her Ph.D. from Duke University. After that, she joined Thorlabs and spent 12 years there in leadership positions including product management, strategic marketing, and corporate development, where she led multi-million dollar strategic partnerships and the acquisition and integration of several companies around the world. Anjul currently serves on the Optica Corporate Engagement Council, and vice-chair of the QED-C Enabling technologies Committee.

ColdQuanta, Judith Olson, Head of Atomic Clock Division
Capabilities of Quantum Sensors **3:40pm Ballroom F**

Judith is breaking down barriers in the world of tech, quantum and physics which have traditionally been male-dominated industries. After earning her MS and PhD from CU Boulder, Judith went to work for NIST. While at NIST, Judith was recruited to ColdQuanta to spearhead the organization's Atomic Clock Division. Under Judith's leadership, ColdQuanta will deliver atomic clocks that enable new capabilities in positioning and communications for use in industries such as aerospace and defense. As one of ColdQuanta's only female executives, Judith has laid the groundwork for other diverse candidates entering the organization. She was recently named Next Generation Leader of the Year at the Women in IT Awards. In addition to her work at ColdQuanta taking existing atomic and optical techniques from the laboratory into the field, she was recognized for her mentorship and paving the way for other women in the field. Her accolades don't stop there: Judith also made the 52 Wonder Women Working in Industry as Quantum Scientists & Engineers list.

Double Helix Optics, Leslie Kimerling, CEO
Revealing the Microscopic Details of Life – Beyond the Diffraction Limit **1:40pm Ballroom F**

Leslie Kimerling, co-founder and CEO of Double Helix Optics, has been an entrepreneur for most of her career, working with early stage and growth companies in either a management or advisory capacity. Prior to founding Double Helix, Leslie was founder and president of Isis Partners, an advisory firm working with early stage and growth companies in a variety of markets including health, big data and retail. Leslie is a founding board member of Street Squash, an after school youth enrichment program serving 7-12 graders in Harlem NY and its sister program Impact 360 in Denver. Leslie is active in optics entrepreneurship through a variety of organizations and serves as mentor to women and other entrepreneurs in the optics field.

Excelitas Technologies, Garrett Metz, Engineering Manager
Career Panel **3:00pm Ponderosa Ballroom**

Garrett Metz attended CSU where he received a Bachelors and Masters in Mechanical Engineering. His graduate work focused on characterizing plasma reactors utilized in photovoltaic applications. Garrett began his professional career in 2013 as a Thin Film Engineer at Advanced Thin Films (IDEX Corporation), primarily focusing on Ion Beam Deposition of low-loss, high laser damage films.
He then transitioned to Excelitas in late 2016 as a Thin Film Engineer focused on Electron Beam and thermal deposition of coatings from deep ultraviolet to infrared responsible for coating design development, prototyping, and qualification. Since the beginning of 2021 Garrett has been leading a team of Process (Optical Fabrication, Thin Film Coating, Assembly, and Metrology) and Manufacturing Engineers supporting Pilot and Production activities at the Boulder site.

Exum Instruments, Jeff Williams, CEO
Chemistry at the Scale of Printing - How the Massbox Can Improve Quality Control in Metal Additive Manufacturing Industry **4:50pm Ballroom E**

CEO and Founder of Exum Instruments Inc. Jeff used the whole suite of analytical instrumentation during his studies at the National High Magnetic Field Lab and the Institute of Meteoritics at UNM. During this time he found that the instruments for doing inorganic solid sample analysis were dated, difficult to use, and largely out of reach for industrial adoption. With this, Jeff built a new analytical technique, Laser Ablation Laser Ionization (LALI), to revolutionize both the hardware and the experience for solid sample analysis. Exum is currently focused on the additive manufacturing markets for the deployment of the Massbox (Exum's first instrument).

Fathom Radiant, Ben Braker, Director of Optical Systems
Career Panel **3:00pm Ponderosa Ballroom**

Dr Benjamin Braker (Ben) currently serves as the Director of Optical Systems at Fathom Radiant, PBC where the team is building processing hardware for the next generation of artificial intelligence. Ben has previously served as both the Head of Advanced 3D Technologies at Cognex Corporation and as Co-Founder of Chiaro Technologies where he oversaw the development of machine vision systems and novel 3D area scan systems for applications in life sciences, industrial inspection, and logistics. Ben received his PhD from the University of Colorado, where his dissertation demonstrated optical methods to produce hyper-spectral images for radar systems. Along the way, Ben has been fortunate to work on the LOFAR program at ASTRON in the Netherlands, as well as the talented teams at Southwest Research Institute. Ben has a history of navigating concepts from invention to product and thrives on problems which require the coordination of marketing, operations, engineering, and software professionals.

FieldLine Inc, Svenja Knappe, Co-Founder
HEDscan, a Non-Invasive Functional Brain Imaging System Based on Quantum Sensors **2:00pm Ballroom F**

Svenja Knappe received her Ph.D. in physics from the University of Bonn, Germany. For 16 years, she worked at the National Institute of Standards and Technology (NIST) in Boulder CO, developing chip-scale atomic sensors. She is now an Associate Research Professor at the University of Colorado Boulder, and her research interests include microfabricated atomic magnetometers. In 2018, she founded FieldLine to commercialize a non-invasive functional brain imaging system based on quantum magnetometers. As the CTO of FieldLine Medical, she is aiming to expand the boundaries of this powerful imaging technology through quantum sensing.

InSight Photonic Solutions, Jason Ensher, CTO
Photonic Integrated Circuits: From the Doctor's Office to Self-driving Cars **2:20pm Ballroom F**

Dr. Jason R. Ensher is the Chief Technology Officer and Executive Vice-President at Insight Photonic Solutions. Since 2010 Dr. Ensher has led the development of all-semi conductor akinetic tunable lasers, LiDARs, fiber-sensing systems and spectrometers, building the technology, IP and team. Dr. Ensher earned his Ph.D. in atomic physics at JILA and the University of Colorado in 1998, working on the Nobel-winning experiments that created Bose-Einstein Condensation. After a post doctoral fellowship at the University of Connecticut, Dr. Ensher moved to industry in 2000, pursuing his passion for photonics at ILX Lightwave, Precision Photonics, Ball Aerospace, Inphase Technologies and Insight. Dr. Ensher has over 36 publications and 28 patents.

KMLabs Inc., Daisy Raymondson, CEO
KMLabs: Bringing the Power of the Synchrotron to your Lab **4:10pm Ballroom E**

Daisy Raymondson has been with KMLabs for over a decade and brings extensive experience in laser design, as a KM researcher, and then progressive responsibility in factory operations, engineering, quality assurance, and worldwide service. In research, Daisy has developed some of the most unique and capable systems for KMLabs, including high power systems and facility-class laser systems. In her role as global service manager, Daisy managed an extensive portfolio of systems and created the training and certification program for KMLabs' worldwide distributor network. Most recently she served as Director of Operations and Service, and then Vice President of Operations, coordinating teams in production, service, materials management, and quality assurance. Daisy holds a BS in Physics and Mathematics from UC Davis and a PhD in Physics from the University of Colorado at Boulder.

LightDeck Diagnostics, Nick Traggis, CEO
LightDeck Dx: From Photonics to Diagnostics **1:10pm Ballroom F**

Mr. Traggis has held various operations leadership, business development, and engineering positions in both industrial manufacturing and technology development companies. He previously worked as a consultant performing C-level directed projects in areas of technology transfer, contract negotiation, and mergers/acquisitions. Prior to that he worked as the General Manager of Precision Photonics; ultimately selling to IDEX Corporation, where he remained on as the Chief Technology Officer. He holds a Bachelor of Science degree in metallurgical and materials engineering from the Colorado School of Mines.

LongPath Technologies, Caroline Alden, Co-Founder & VP of Product & Markets
Greenhouse Gas Emission Monitoring and Mitigation with Ruggedized Dual Frequency Comb Spectroscopy **1:40pm Ballroom E**

Dr. Caroline Alden is co-founder and VP of Product and Markets at LongPath Technologies, which provides quantified, continuous methane emissions monitoring for oil and gas and other methane emitting infrastructure. Caroline is also a Research Scientist at the University of Colorado Boulder's Cooperative Institute for Research in Environmental Sciences. Caroline earned her doctorate in Geology from CU Boulder working with the NOAA carbon cycle group on greenhouse gas flux algorithms for tracking of large-scale carbon sources and sinks. She was a fellow at Stanford before joining the atmospheric science R&D that led to the founding of LongPath Technologies in 2017.

LongPath Technologies, Robert Wright, Director of Engineering
Career Panel **3:00pm Ponderosa Ballroom**

Robbie Wright leads LongPath's engineering team, including financial modeling for technical projects. He earned his B.S./M.S. in optical engineering from the Institute of Optics at the University of Rochester before coming to CU Boulder in 2015 to build and help deploy the world's first mobile dual frequency comb spectrometer. Robbie has been with LongPath Technologies since its founding in 2017.

Magic Leap, Kevin Curtis, VP Optics
Magic Leap 2: An Advanced AR Platform with Revolutionary Optics **1:10pm Ponderosa Ballroom**

Kevin Curtis is the Vice President of Optical Engineering at Magic Leap. He is currently responsible for the Visual Optical Assembly, product calibration, and vision science for Magic Leap's Mixed Reality products. Prior to this Kevin was Chief Scientist of Illumination Systems at RealD working on laser projection and direct view for digital cinema. Before RealD, for 10 years he was founder and CTO and eventually CEO of InPhase Technologies, an optical data storage company. Kevin spun InPhase out of Bell Laboratories, where he was a Member of Technical Staff at Murray Hill, New Jersey. He has authored more than 100 US patents, one book, and more than 100 presentations on optical systems, holography, projection systems, and lasers. Kevin received his BS, MS, and Ph.D. degrees in electrical engineering from the California Institute of Technology, Pasadena, California.

Maxar Technologies, Michele Kuester, Radiometric Calibration Lead
Methods for On-orbit Absolute Radiometric Calibration of Earth Observing Sensors **2:00pm Ballroom E**

Michele Kuester, an expert in the radiometric calibration of passive optical sensors, holds a Ph.D. in atmospheric sciences from the University of Colorado Boulder; and an M.S. in optical sciences and B.S. in Physics from the University of Arizona-Tucson. She is currently at Maxar, overseeing the calibration and monitoring of the radiometric response of the Maxar Earth observing constellation. She notes that two favorite things about her job is the summer office, which is outside and in the middle of nowhere; and mentoring students via an internship program she built in coordination with the NASA Colorado Space Grant program.

Microsoft, Dave Rohn, Senior Director, Engineering
Hololens 2, A Novel AR/VR Experience **1:50pm Ponderosa Ballroom**

Over 20 years of product design and technical management experience in hardware, software, consumer electronics, system architecture, and chip design. Most recently working on HoloLens and cell phones. Contributed to the successful development and manufacturing of consumer and enterprise based electronic devices: 10Gbps network processing packet processing ICs, technology development in cameras, displays, and sensors, embedded systems, firmware development, flatbed and handheld image scanners, network processor design, 10Gbps fabric switch ASIC, development of 5 high speed integrated optical tracking sensors that are shipping in Microsoft computer mice, handheld and flatbed imaging scanners.

Occiptal, Paulo Silveira, VP Engineering
From Depth Maps to Volumetric Models: 3D Reconstruction Using Occipital's Products **2:20 Ponderosa Ballroom**

Paulo Silveira is the VP of Engineering at Occipital. Located in Boulder, Occipital develops the Structure Sensor, responsible for more than 2 million patient scans per year, making Occipital the leading developer of 3D sensors used in healthcare today. Paulo received his PhD in Electrical Engineering from CU Boulder in 2001 and worked in several local startups, including Network Photonics, DoubleHelix and CDM Optics. While at OmniVision he helped develop their wafer-level cameras and performed the seminal work that led to the development of OmniVision's Nyxel® technology. He is the author of 50 peer-reviewed publications and 66 patents.

OPTICA, Carl Williams, Science Advisor and Consultant
The Quantum Ecosystem: What Is It and Why You Should Care **7:45pm Ballrooms E & F**

Dr. Carl J. Williams is the CEO and President of CJW Quantum Consulting LLC. In this position he acts as a Science Advisor and Consultant to Optica. He established CJW Quantum after a highly successful career at the National Institute of Standards and Technology (NIST), where he led the NIST Quantum Information Program and helped to establish the United States government policy that led to the National Quantum Initiative Act, that led to the establishment of the Quantum Economic Development Consortium (QED-C). He is a member of the Global Future Councils of the World Economic Forum. Dr. Williams received his B.A. from Rice University in 1981 and his Ph.D. from the University of Chicago in 1987.

Orion Space Solutions, Geoff Crowley, CEO
Satellites and Sensors from HF to UV at Orion Space Solutions **2:20pm Ballroom E**

Geoff Crowley, Ph.D., is CEO of Atmospheric & Space Technology Research Associates, LLC (doing business as Orion Space Solutions). He received a Bachelors in Physics in 1978 (University of Durham, UK) and a Ph.D. in Ionospheric Physics in 1985 (from University of Leicester, UK). He has worked at 4 large scientific research organizations including the National Center for Atmospheric Research, Boulder, CO, the Air Force Research Lab, Bedford, MA, the Johns Hopkins University Applied Physics Lab, Laurel, MD, as well as the Southwest Research Institute, San Antonio, TX. Dr. Crowley has published over 150 scientific articles on his research on space weather and the upper atmosphere. In 2005, he founded ASTRA, now known as Orion Space Solutions. Since its founding in 2005, Orion has specialized in "Science, Technology, and Applications" from its headquarters in Louisville, CO.

Quantinuum, Lora Nugent, R&D Director
Quantinuum's Trapped Ion Quantum Computer: Advanced Optics Solutions **4:10pm Ballroom F**

Dr. Nugent is a graduate of CU-Boulder from the Physical Chemistry department with a focus on time resolved photoelectron spectroscopy with ultra fast soft X-ray light. Lora is currently the R&D Director at Quantinuum which is an exciting combination of the hardware from Honeywell Quantum Solutions and software from Cambridge Quantum.

Raytheon Intelligence & Space, Matt Cox Assoc. Dir., Denver Marketplace
Career Panel **3:00pm Ponderosa Ballroom**

Matt Cox is an Associate Director for Raytheon Intelligence & Space, and is providing Program Management guidance to Sierra Space in Louisville CO, who are on contract to provide critical mechanisms for the next-gen OPIR Block 0 program. Matt is a member of the RTX's Engineering Council and is also the Chair for the Multi-function Electro-Optical Systems Technology Network, which is comprised of over 4,000 engineers and technologists across the company. Matt has over 40 years of EO/IR and active sensing experience working on mostly space programs and pursued his bachelor of science in Mechanical Engineering from the University of California at Long Beach.

SPIE, Kent Rochford, CEO
Photonics Industry Challenges and Opportunities **7:15pm Ballrooms E&F**

Kent Rochford is the CEO of SPIE, the international society for optics and photonics. Representing over 19,000 members and serving more than 264,000 constituents worldwide, the not-for-profit society advances optics and photonics through events, continuing education, publications, and professional growth. Previously, Rochford was the Associate Director for Laboratory Programs at the National Institute of Standards and Technology (NIST) and served as Acting NIST Director in 2017. Over his NIST career, he led the NIST Boulder Labs, the Communication Technology Laboratory and was chief of the Quantum Electronics and Photonics Division, and interspersed these roles with positions at multinationals and start ups. Rochford holds a PhD in optical sciences from the University of Arizona and an MBA from the University of Colorado.

Vescent Photonics, Scott Davis, CEO
Quantum Systems Will Change the World (Again), But Not Without Photonics or Colorado Talent **4:50pm Ballroom F**

When systems are engineered to relay or extend "quantum weirdness" from the nanoscopic scale of atoms to the macroscopic scale of humans amazing things can happen. Twentieth century quantum systems (the transistor and the laser) ushered in the computer age and the information age, which changed the world. Twenty-first century quantum systems is just emerging, and the disruptive potential is equally tantalizing. Almost all these emergent quantum systems require lasers and photonics, representing both an opportunity and a challenge. In this talk I will discuss the complexity of the lasers-for-quantum space, present the technical and economic landscape, and pose possible paths forward for how lasers and photonics can usher in a new quantum age. I will also present how Vescent, a local company, is playing a critical role in this development and discuss how Colorado talent, at Vescent and in other Colorado Companies, is enabling the quantum 2.0 revolution.

Vitro3D, Camila Uzcategui, CEO
Pushing the Boundaries of 3D Printing for Life Science Applications **3:40pm Ballroom E**

Dr. Camila Uzcategui is co-founder and CEO of Vitro3D, a company with a mission to increase health care access with a paradigm shifting volumetric 3D printer. Her PhD and post-doctoral research focused on building light based 3D printers and innovating 3D printing materials and processes for life science applications. Camila believes that deep technology entrepreneurship with a social lens can solve interdisciplinary biotechnology problems with the help of 3D printing. Her latest paper on additive manufacturing, "Microscale Photopatterning of Through-Thickness Modulus in a Monolithic and Functionally Graded 3D-Printed Part," is published online in Small Science. She has presented her work at Rapid + TCT, SFB, Photonics West and ORS. Camila is passionate about enhancing society through science by developing technologies that give a wider range of people access to an improved quality of life and increasing diversity in STEM through mentorship and outreach.

Xairos Systems Inc., David Mitlyng, CEO
Quantum Communications **4:30pm Ballroom F**

David Mitlyng is the CEO of Xairos, a startup building a global timing service to replace timing from GPS. David has 25 years of experience in the space industry, including Hughes Space and Communications, Orbital ATK, SSL, and Bridge Sat. David has a BS in Aeronautical Engineering from Cal Poly SLO, a MS in Aeronautics and Astronautics from Stanford University, and an MBA from the MIT Sloan School of Management.