18:00 **Sunday, Jan. 4**, Evening Reception in honor of 2026 PQE heroes at Golden Cliff Room

Monday Morning January 5, 2026

7:00 **Continental breakfast** [Ballroom 1+2]

Plenary Session [Ballroom 1+2] Olga Kocharovskaya, Chair

7:30 **Marlan Scully**, *Texas A&M University*, "Quantum Advantage in Thermodynamics"

8:00 **John Pendry**, *Imperial College London*, "Energy and entropy content of time-dependent metamaterials"

8:30 **Mikhail Lukin**, *Harvard University*, "New frontier of quantum computing"

	Quantum Thermodynamics Ballroom 1 Marlan Scully, Chair	*Space-time Metamaterials* Magpie A John Pendry, Chair	*Atom Arrays I* Magpie B Mikhail Lukin, Chair	*Nanophotonics* Wasatch A Markus Raschke, Chair
9:10	**Yusef Maleki**, *Texas A&M University*, "Quantum Heat Engine as a Sensor and Beyond: Insights from Fisher Information"	**Bumki Min**, *Korea Advanced Institute of Science & Technology*, "Unified framework for classical and quantum light-matter interactions in photonic time crystals"	**Andrew Jayich**, *University of California, Santa Barbara*, "Cryogenic ion trapping of atomic and molecular ions for precision measurements"	**Markus Raschke**, *University of Colorado, Boulder*, "Ultrafast nano-imaging and tip-enhanced control of electronic coherence in 2D semiconductors"
9:30	**Anatoly Svidzinsky**, *Texas A&M University*, "Quantum evolution of mixed states, vacuum entanglement and performance of quantum heat engines"	**Jingdi Zhang**, *Hong Kong University of Science and Technology*, "Terahertz wave amplification by a time-boundary-modulated Huygens' metasurface"	**Trent Graham**, *University of Wisconsin at Madison*, "Rydberg gates in a neutral atom array using single-photon excitation"	**Kejie Fang**, *University of Illinois Urbana-Champaign*, "High-performance nonlinear photonics for quantum information and networking"
9:50	**Hui Wang**, *Texas A&M University*, "Quantum Heat Engines Driven by Multilevel Quantum Coherence"	**Francesco Monticone**, *Cornell University*, "Space-time nonlocal metamaterials"	**Norbert Linke**, *Duke University*, "Hybrid quantum simulation and city-scale quantum networking with trapped ions"	**Souvik Biswas**, *Stanford University and University of Michgan*, "Diamond as a Platform for Scalable Quantum Networks"
10:10	**Barnabas Kim**, *Texas A&M University*, "Heat Engine in Quantum Engineering: Coherence and Entanglement as resources"	**Yonatan Sivan**, *Ben-Gurion University*, "Single-cycle optical nonlinearity of transparent conducting oxides explained"	**Alexey Gorshkov**, *JQI, NIST/University of Maryland*, "Readout-Free Majority Decoding via Asymmetric Rydberg Antiblockade"	**Cheng Guo**, *The University of Texas at Austin*, "Transport Measurements of Majorization Order for Wave Coherence"

10:30 — Break —

Plenary Session [Ballroom 1+2]Vitaly Kocharovsky, Chair

10:50 **Gerd Leuchs**, *Max Planck Institure for the Science of Light*, "The Atom and the Vacuum"

11:20 **Kazimierz Rzążewski**, *CFT PAN*, "The Hybrid Sampling Method for the Statistics of a Bose Gas"

	Coherence in Spontaneous Emission Ballroom 1 Gerd Leuchs, Chair	*Quantum Advantage: Cold atoms and Cavity QED* Magpie A Vitaly Kocharovsky, Chair	*Quantum Networks I* Magpie B John Howell, Chair	*Topological Features* Wasatch A Andrei Afanasev, Chair
12:00	**Rocio Jauregui**, *Universidad Nacional Autonoma de Mexico*, "Effects of collective coupling and center of mass motion on the light scattered by driven multilevel atoms"	**Vitaly Kocharovsky**, *Texas A&M University*, "Hafnian master theorem and quantum supremacy"	**John Howell**, *Chapman University*, "Super Bandwidth Deconvolution Signal Reconstruction"	**Andrei Afanasev**, *George Washington University*, "Nondiffractive Spin Skyrmions of the Vortex Cores in Electromagnetic and Acoustic Waves"
12:20	**Sergey V. Polyakov**, *NIST*, "Robust, Scalable, and Low-Noise Phase Stabilization for Next-Generation Quantum Networks"	**Raj Patel**, *Imperial College*, "Gaussian Boson Sampling with Displacements"	**Thomas Walther**, *TU Darmstadt*, "Alice, Bob, ... and Friends: What's next for the Darmstadt Quantum Key Distribution Network"	**Evgenii Narimanov**, *Purdue University*, "Hyperbolic Quantum Procesor"
12:40	**Shuo Sun**, *University of Colorado Boulder*, "Resonance fluorescence of a strongly driven two-level system with dynamically modulated frequency"	**Changhun Oh**, *KAIST*, "Classical algorithm for simulating experimental Gaussian boson sampling"	**Ephraim Shahmoon**, *Weizmann Institute of Science*, "Quantum light-matter interfaces with tweezer atomic arrays"	**Pankaj Jha**, *Syracuse University*, "Iron-Based Topological Superconductors for Single-Photon Detection"

Plenary Session [Ballroom 1+2] Birgitta Whaley, Chair

19:00 **Dmitry Budker**, *Helmholtz Institute Mainz, JGU Mainz, and UC Berkeley*, "Gravitational Waves, Dark Matter, Photons… More ways to explore fundamental questions"
19:30 **Susanne Yelin**, *Harvard University*, "Unleashing Analog Quantum Computing"
20:00 **Shaul Mukamel**, *University of California, Irvine*, "Monitoring of elementary molecular events with quantum and X-ray light"

	Gravitational Waves, Dark Matter, Photons… Ballroom 1 Dmitry Budker, Chair	*Quantum and Bio* Magpie A Susanne Yelin, Chair	*Novel Molecular Spectroscopies with Quantum Light* Magpie B Shaul Mukamel, Chair	*Ultrafast Optics and Coherence Phenomena* Wasatch A Alexei Sokolov, Chair
20:50	**Derek F. Jackson Kimball**, *California State University - East Bay*, "Levitated Ferromagnetic Gyroscopes for Fundamental Physics"	**Peter Maurer**, *University of Chicago*, "A fluorescent-protein spin qubit"	**Birgitta Whaley**, *University of California, Berkeley*, "Quantum light spectroscopies for probing photosynthetic systems"	**Deniz Yavuz**, *University of Wisconsin - Madison*, "Quantum statistics of radiation in collective spontaneous emission"
21:10	**Vera M. Schäfer**, *Max-Planck-Institut fr Kernphysik*, "Searching for a variation of the fine structure constant with highly charged ions"	**Jonah Peter**, *Harvard University*, "Enabling Ultrastrong Chiral Light-Matter Interactions With Chiral Superradiance"	**Felipe Herrara**, *USACH, Chile*, "Theory of vacuum-assisted chemical reactions in infrared cavities"	**Dmitri Voronine**, *University of South Florida, USA*, "Novel approaches to nanoscale imaging of 2D materials and micro(nano)plastics"
21:30	**Szymon Pustelny**, *Jagiellonian University in Krakow/Harvard University*, "Constraining long range spin gravity coupling using nuclear magnetic resonance"	**Nishad Maskara**, *MIT*, "Fast simulation of fermions with reconfigurable qubits"	**Michael Reitz**, *UCSD*, "Nonlinear semiclassical spectroscopy of ultrafast molecular polariton dynamics"	**Alma Fernández**, *Texas A&M University*, "Optical Coherence Microscopy: Applications to Agriculture"
21:50	**Alexander Sushkov**, *Johns Hopkins University*, "Quantum metrology of macroscopic spin ensembles"	**Jack Harris**, *Yale University*, "Cavity optomechanics in a levitated drops of superfluid helium"	**Oumeng Zhang**, *Texas A&M University*, "Quantum-bound-guided single-molecule orientation localization microscopy"	**Dong Hee Son**, *Texas A&M University*, "Superradiance and hot electrons from strongly quantum-confined perovskite quantum dots"
22:10	**Arne Wickenbrock**, *Johannes Gutenberg University, Mainz*, "Searching dark matter with hyperpolarized spin ensembles"	**Quanwei Li**, *University of California*, "Photon statistics in photosynthetic light harvesting"	**Zhenhuan Yi**, *Texas A&M University*, "Generating Coherent States of Photonic Dimers"	**Alexei V. Sokolov**, *Texas A&M University*, "Quantum Molecular Coherence for Chemical Sensing and Fusion Energy"

Tuesday Morning, January 6, 2026

7:00 **Continental breakfast** [Ballroom 1+2]

Plenary Session [Ballroom 1+2] Ron Folman , Chair

7:30 **Wolfgang Schleich**, *Ulm University*, "Interference at work"
8:00 **Jun Ye**, *JILA/NIST/University of Colorado*, "Nuclear clock: recent developments"
8:30 **Massaya Notomi**, *NTT Research Lab*, "Chiral topology and nonlinearity in non-Hermitian nanophotonics"

	Frontiers of Atom Optics I Ballroom 1 Wolfgang Schleich, Chair	*Nuclear Clock* Magpie A Jun Ye, Chair	*Semiconductor Lasers I* Magpie B Massaya Notomi, Chair	*Quantum Sensors* Wasatch A Mikhail Lukin, Chair
9:10	**Frank Narducci**, *Naval Postgraduate School*, "A T^3 interferometer and the pit and the pendulum"	**Eric Hudson**, *University of California, Los Angeles*, "Nuclear clocks: What now?"	**John Bowers**, *University of California, Santa Barbara*, "Heterogeneously-Integrated Lasers on Thin Film Lithium Niobate"	**Ania Bleszynski Jayich**, *University of California, Santa Barbara*, "Engineering interacting spins in the solid-state for quantum sensing"
9:30	**Ron Folman**, *Ben-Gurion University of the Negev*, "Experiments at the interface of general relativity and quantum mechanics"	**Andrei Derevianko**, *University of Nevada, Reno*, "Sub-100 MHz accurate ^{229}Th nuclear clock frequencies in solid-state and trapped ion platforms"	**Frédéric Grillot**, *Laval University, Canada*, "Quantum Homodyne Tomography Application to Ultra-Narrow Linewidth Semiconductor Lasers"	**Andrei Faraon**, *California Institute of Technoloy*, "Quantum nano-photonics with rare-earth ions"
9:50	**Georgi Gary Rozenman**, *Massachusetts Institute of Technology*, "Hydrodynamic Aharonov-Bohm Effect, Time-Varying Vortex-Induced Phases, and Rotating Black-Hole Analogues"	**Keerthan Subramanian**, *Johannes Gutenberg University, Mainz*, "A solid-state continuous-wave laser at 148.4 nm for driving the ^{229m}Th nuclear transition"	**Alexander Dikopoltsev**, *ETH Zurich*, "Liquid Light Dynamics in Synthetic Dimensions: a New Class of Frequency Combs"	**Shimon Kolkowitz**, *University of California, Berkeley*, "Gravitational wave detection with space-based optical lattice clocks"
10:10	**Barbara Platzer**, *University of Vienna*, "Embracing instability: preparing macroscopic quantum states in the dark"	**Victor V. Flambaum**, *University of New South Wales, Sydeny*, "Nuclear Clocks and the Search for New Physics"	**Jesper Mørk**, *Technical University of Denmark*, "Sub-Wavelength Semiconductor Nanocavities for Nanoscale Light Sources"	**Igor Pikovski**, *Stevens Institute of Technology and Stockholm University*, "Towards superpositions of proper time in atomic clocks and quantum networks"

10:30 — Break —

Plenary Session [Ballroom 1+2] Olga Kocharovskaya, Chair

10:50 **Marlan Scully**, *Texas A&M University*, "Presentation of the 2026 Willis E. Lamb Award for Laser Science and Quantum Optics"
11:20 **Richard Miles**, *Texas A&M University*, "Unravelling Turbulence with Laser Pumped, Time Delayed Quantum State Emission "

	Quantum State and Nonlinear Optics enabled Measurements of Gases and Plasmas Ballroom 1 Richard Miles, Chair	*Cold Atoms* Magpie A Kaden Hazzard, Chair	*Quantum Detectors, Sensors and Amplifiers* Magpie B Zubin Jacob, Chair	*Quasi-particles in Semiconductor Heterostructures* Wasatch A Leonid Butov, Chair
12:00	**Arthur Dogariu**, *Texas A&M University and Princeton University*, "Quantum States in Thermodynamical Non-equilibrium Unveiled by Coherent Raman"	**Kaden Hazzard**, *Rice University*, "Observing paraparticles in ultracold Rydberg atoms"	**Shyam Shankar**, *University of Texas at Austin*, "Advancing Josephson parametric amplifiers for scalable high-fidelity readout of solid-state qubits"	**Leonid Butov**, *University of California San Diego*, "Indirect excitons in heterostructures"
12:20	**Mikhail N. Shneider**, *Princeton University*, "Bragg Amplification of Weak Laser Radiation in Optical Lattices in a Gas"	**Aaron Young**, *Harvard*, "Quantum simulation of the Hubbard model: pseudogap, charge order, and beyond"	**Zubin Jacob**, *Purdue University*, "Neural bolometers for thermal imaging "	**Cun-Zheng Ning**, *Shenzhen Tech Univ.*, "The Quadruplon: Evidence for a New Quasi-Particle in a 2D Monolayer Semiconductor Through Ultrafast Pump-Probe Experiments"
12:40	**Alexandros Gerakis**, *Luxembourg Institute of Science & Technology*, "Reshaping and Probing Velocity Distribution Functions of Neutral and Charged Species with Chirped Optical Lattices"	**Theodor Lukin Yelin**, *JILA, University of Colorado*, "Entanglement-Enhanced Metrology in a Neutral Atom Array"	**Mahdi Hosseini**, *Northwestern University*, "Nonlinear Dynamics in Macroscopic Levitation for Enhanced Inertial Sensing and Tests of Semiclassical Gravity"	**Igor Bondarev**, *North Carolina Central University*, "Charged Bosons Made of Fermions in Laser-Excited Semiconductor-Metal Heterostructures"

Tuesday Evening, January 6, 2026

Plenary Session [Ballroom 1+2] Federico Capasso, Chair

19:00 **Ebrahim Karimi**, *Chapman University*, "Characterising Entangled Structured Photons for Quantum Imaging Applications"
19:30 **Adam Kaufman**, *JILA, University of Colorado at Boulder*, "A new platform for programmable Hubbard systems"
20:00 **Vladimir Shalaev**, *Purdue University*, "Engineering Light with Space-Time Metamaterials"

	Frontiers of Quantum Imaging Ballroom 1 Ebrahim Karimi, Chair	*Atom Arrays II* Magpie A Adam Kaufman, Chair	*Meta-Quantum and Near-Zero Materials I* Magpie B Vladimir Shalaev, Chair	*Quantum X-ray Optics* Wasatch A Ralf Röhlsberger, Chair
20:50	**Andrew Jordan**, *Chapman University*, "Direct measurement of the quantum pseudo-distribution via its generating function "	**Jake Covey**, *University of Illinois Urbana-Champaign*, "Distributed quantum science with neutral atom arrays"	**Federico Capasso**, *Harvard*, "From Classical to Quantum Metasurfaces for Multiphoton Interferometry"	**Ralf Röhlsberger**, *Helmholtz Institute Jena and DESY Hamburg*, "Anomalous Nuclear Forward Scattering under Intense XFEL Excitation"
21:10	**Milena DÁngelo**, *Università degli Studi di Bari*, "Correlation imaging, from 3D to hyperspectral"	**Danial Shadmany**, *Stanford University*, "A 600-site cavity array: expanding the neutral atom array toolbox"	**David Miller**, *Stanford University*, "Self-configuring spectral filters by mapping time to space"	**Jörg Evers**, *MPI for Nuclear Physics, Heidelberg*, "Single-shot Mössbauer spectroscopy at X-ray free-electron lasers"
21:30	**Alessio DÉrrico**, *University of Ottawa*, "Imaging the quantum state of biphotons"	**Hengyun Zhou**, *QuEra Computing*, "Transversal Architectures for Neutral Atom Logical Quantum Computation"	**Howard Lee**, *University of California, Irvine*, "Active and Nonlinear Epsilon-Near-Zero Photonics"	**Joachim von Zanthier**, *University Erlangen-Nürnberg*, "New results of incoherent diffraction imaging (IDI) for x-ray structure analysis"
21:50	**Benjamin Sussman**, *National Research Council Canada*, "Ultrafast Quantum Photonics: Beating Decoherence with Fast Light Pulses"	**Alexander Lukin** , *QuEra*, "Improved two-qubit gate fidelities for neutral-atom quantum computers"	**Joshua Caldwell**, *Vanderbilt*, "Employing Phonon Polaritons and ENZ Polaritons in Enhanced Thermal Transport"	**James M. Baxter**, *SLAC National Accelerator Laboratory*, "Spontaneous parametric down conversion of X-rays at LCLS XFEL"
22:10	**Yingwen Zhang**, *Chapman University*, "Light-field microscope using entangled photons"	**Zhenjie Yan**, *Columbia University*, "Cavity-Enabled Measurements and Interactions in Neutral Atom Quantum Processors"		**Konstantin Beyer**, *Stevens Institute of Technology*, "One-sided Witnesses for the Quantumness of Gravitational Dynamics"

Wednesday Morning, January 7, 2026

7:00 **Continental breakfast** [Ballroom 1+2]

Plenary Session [Ballroom 1+2] Anatoly Svidzinsky, Chair

7:30 **Franco Nori**, *RIKEN and Univ. of Michigan*, "A few recent results on superconducting qubits"
8:00 **Peter Hommelhoff**, *LMU Munich and FAU Erlangen*, "New control over electrons with ultrashort laser and non-classical fields"
8:30 **Weng Chow**, *Sandia National Laboratories*, "Semiconductor lasers for conventional and quantum applications"

	Quantum Circuits, Quantum Information, and Quantum Open Systems Ballroom 1 Franco Nori, Chair	*Controlling Electrons with Ultrashort Pulses* Magpie A Peter Hommelhoff, Chair	*Semiconductor Lasers II* Magpie B John Bowers, Chair	*Frontiers of Atom Optics II* Wasatch A Wolfgang Schleich, Chair
9:10	**Sahin Ozdemir**, *Saint Louis University*, "Non-Hermiticity as a Resource in Photonics"	**Christian Heide**, *University of Central Florida*, "Designing Quantum Materials with Lightwaves: Coherent Floquet Control and Raman-Force Phase Engineering"	**Nima Nader**, *NIST, Boulder*, "Stimulated Brillouin Scattering in InGaP-on-insulator waveguides"	**Peter Asenbaum**, *IQOQI Vienna*, "Gravity in quantum systems: From atoms to macroscopic objects"
9:30	**Clemens Gneiting**, *RIKEN, Japan*, "Quantum error correction in bosonic systems"	**Shawn Sederberg**, *Simon Fraser University*, "Field-driven currents in solids with few-cycle mid-infrared pulses"	**Sebastian Klembdt**, *Würzburg University*, "Topological Lasers: From Electrical Injection and Novel Organic Emitters"	**Alexander Bott**, *Ulm University*, "Atomic diffraction from single-photon transitions in gravity and Standard-Model extensions"
9:50	**Rodrigo Cortinas**, *Google Quantum AI*, "Quantum computation of molecular geometry via many-body nuclear spin echoes"	**Uwe Thumm**, *Kansas State University*, "Photoelectron – residual-ion entanglement in angle-differential attosecond time-reolved shake-up ionization"	**Richard Mirin**, *University of California, Santa Barbara*, "Integrated Semiconductor Lasers For Quantum Systems"	**Denys I. Bondar**, *Tulane University*, "Quantum Pythagoras: Entanglement Generation via Tunneling and Black-Hole Analogs"
10:10	**Andy Schang**, *University of Waterloo*, "Observation of Genuine Tripartite Non-Gaussian Entanglement from a Superconducting Three-Photon Spontaneous Parametric Down-Conversion Source"	**Luca Argenti**, *University of Central Florida*, "Time-Dependent Close Coupling on the heels of attosecond electron dynamics"	**David Burghoff**, *University of Texas at Austin*, "Liquid combs: broadband light with equidistance and without stability"	**Jannik Ströhle**, *Ulm University*, "The Einstein Equivalence Principle and the Quantum Galileo Interferometer"

10:30 — Break —

Plenary Session [Ballroom 1+2] Kaden Hazzard, Chair

10:50 **Eugene Polzik**, *Niels Bohr Institute, Copenhagen University*, "Quantum sensing beyond standard quantum limits"
11:20 **Alexandra Boltasseva**, *Purdue University*, "Epsilon Near Zero Effects and Applications"

	Quantum Sensing Beyond Standard Quantum Limits Ballroom 1 Eugene Polzik, Chair	*Meta-Quantum and Near-Zero Materials II* Magpie A Alexandra Boltasseva, Chair	*Chirality I* Magpie B Olga Smirnova, Chair	*Applications of Ultrafast Structured Laser Beams* Wasatch A Pavel Polynkin, Chair
12:00	**Yang Yang**, *JILA, University of Colorado*, "Spin-squeezed clock for beyond the standard quantum limit performance at 1×10^{-18}"	**Nathaniel Kinsey**, *Saint Louis University* , "Origins of Nonlinearities at Epsilon-Near-Zero and its Influence on Applications"	**Loren Greenman**, *Kanzas University*, "Multiphoton Photoelectron Circular Dichroism via Time-Dependent Perturbation Theory: Revealing Principles of Chirality with Attosecond XUV Imaging"	**Pavel Polynkin**, *University of Arizona*, "Curved air waveguides using intense designer laser beams"
12:20	**Klemens Hammerer**, *Innsbruck University, IQOQI Innsbruck*, "Quantum enhanced atomic clocks without spin squeezing"	**Marcello Ferrera**, *Heriot-Watt University*, "Time-varying photonics in transparent conductors"	**Davide Facciala**, *CNR Milan*, "Probing attosecond chiral multi-electron dynamics via enantio-sensitive interferometry"	**Francois Courvoisier**, *Marie and Louis Pasteur University, CNRS*, "Physics and applications of femtosecond higher-order Bessel beam interaction with dielectrics"
12:40	**Johannes Borregaard**, *Harvard University*, "Quantum computing enhanced imaging"	**Alexander Khanikaev**, *UCF*, "Leveraging symmetries for control of classical and quantum light in topological metasurfaces"	**Nikolay Golubev**, *University of Arizona*, " Control of quantum dynamics using stimulated Raman adiabatic passage technique"	**Aurelien Houard**, *LOA - Ecole Polytechnique*, "Spatio-temporal shaping of laser filaments in air"

Wednesday Evening, January 7, 2026

ver. Jan. 07, 2026

Plenary Session [Ballroom 1+2] Frank Narduchi, Chair

19:00 **Marianna Safronova**, *University of Delaware*, "Quantum Technologies for New Physics Discoveries"
19:30 **Ernst Rusel**, *University of Hannover*, " Quantum gases in microgravity: new perspectives for ground based research Atoms in Space"
20:00 **Lan Yang**, *Washington University in St. Louise*, "When Light Listens: New Frontiers at the Intersection of Cavity Optomechanics and Photoacoustic Spectroscopy"

	Quantum Technologies for New Physics Discoveries Ballroom 1 Marianna Safronova, Chair	*Atom Interferometry and Space* Magpie A Ernst Rusel, Chair	*Quantum Sensing I* Magpie B Lan Yang, Chair	*Quantum Nulear Optics* Wasatch A Olga Kocharovskaya, Chair
20:50	**Piet O. Schmidt**, *Physikalisch-Technische Bundesanstalt*, "Highly Charged Ion Clocks to Test Fundamental Physics"	**Arnaud Landragin**, *LTE, Observatoire de Paris, Université PSL*, "High sensitivity and accuracy with a large area cold atom gyroscope"	**Zheshen Zhang**, *University of Michigan*, "Quantum Sensing based on Centralized and Distributed Entanglement"	**Yuri Shvyd'ko**, *Argonne National Laboratory*, "Advances in 45-Scandium nuclear clock research"
21:10	**José R. Crespo López-Urrutia**, *Max-Planck-Institut für Kernphysik, Heidelberg, Germany*, "Towards frequency metrology in the extreme ultraviolet range with trapped highly charged ions"	**Tim Kovachy**, *Northwestern University*, "A Surprising Systematic Effect from the Interplay of Spontaneous Emission and Many-Pulse Atom Interferometry"	**Kyungtae Kim**, *JILA*, "Optical Lattic Clocks: physics and applications"	**Sharon Shwartz**, *Bar-Ilan University*, "Direct ghost tomography for 3D X-ray fluorescence imaging"
21:30	**Harikrishnan Ramani**, *University of Delaware*, "Searches for dark matter with precise electric field sensors"	**Kai Frye-Arndt**, *Leibniz University Hannover*, "Diffraction-induced apparent self-focussing and transplant of Bose-Einstein condensates in absorption imaging"	**Chong Zu**, *Washington University in St. Louis*, "Quantum Sensors in 2D Materials: Opportunities and Challenges"	**Wen-Te Liao**, *National Central University*, "Gravitational Photon Echo using Thorium-229 nuclear clock transition"
21:50	**Andrew Ludlow**, *National Institute of Standards and Technology*, "Next-generation timekeeping with optical lattice clocks"	**Zack Pagel**, *Infleqtion*, "Quantum Gravity Gradiometry from Space: A Pathfinder Mission with NASA"	**Andy Mounce**, *Sandia National Laboratory*, "Quantum sensing with quantum defects"	**Olga Kocharovskaya**, *Texas A& M University*, "Quantum memory for hard X-ray photons in the stationary nuclear absorbers"
22:10	**Christian Sanner**, *Colorado State University*, "Testing relativity with a cryogenic ytterbium ion clock"	**Jan M. Rost**, *Max Planck Institute for the Physics of Complex Systems, Desden, Germany*, "Is Physics Timeless ?"	**Tian-Xing Zheng**, *The University of Chicago*, "A Molecular Qubit Scaffolded on a Hexagonal Boron Nitride Surface"	**Xiwen Zhang**, *Texas A& M University*, "Quantum memory for hard X-ray photons with reduced mechanical complexity"

Thursday Morning, January 8, 2026

ver. Jan. 07, 2026

7:00 **Continental breakfast** [Ballroom 1+2]

Plenary Session [Ballroom 1+2] Carmen Menoni, Chair

7:30 **James Thompson**, *JILA, NIST and University of Colorado, Boulder*, "Photon mediated interactions for quantum sensing and simulation"

8:00 **Noa Yaffe**, *Weizmann Institute of Science*, "Attosecond transient absorption with quantum-structured fluctuations"

8:30 **Conner Galloway**, *Xcimer Energy, Inc.*, "A high-energy excimer-Raman-Brillouin laser system for inertial fusion energy"

	Enhanced Quantum Metrology using Cavity-QED	*Attosecond Quantum Optics*	*IFE Target Engagement and Design*	*X-ray Optics*
	Ballroom 1	Magpie A	Magpie B	Wasatch A
	James Thompson, Chair	Mikhail Ivanov, Chair	Jorge Rocca, Chair	Arvinder Sandhu, Chair
9:10	**Chengyi Luo**, *California Institute of Technology*, "Extending Ramsey coherence of solid-state spins via cavity-mediated interactions"	**Denis Seletskiy**, *University of New Mexico*, "Time-Domain Measurement of Few-Cycle Two-Mode Squeezed State"	**Felicie Albert**, *Lawrence Livermore National Laboratory*, "LaserNetUS: the first five years of scientific discovery"	**Arvinder Sandhu**, *University of Arizona*, "Commissioning of femtosecond hard x-source at ASU CXFEL facility"
9:30	**Gustavo Velez**, *Massachusetts Institute of Technology*, "Quantum-amplified spectroscopy on an optical clock transition"	**Carlos Trallero** , *University of Connecticut*, "Single photon attosecond interferometry"	**Bedros Afeyan**, *Polymath Research Inc.*, "Enabling Inertial Fusion Energy (IFE) by Controlling Nonlinear Optical Instabilities Using Spike Trains of Uneven Duration and Delay (STUD Pulses)"	**Zain Abhari**, *University of Wisconsin - Madison*, "Stimulated Emission in the Hard X-ray Regime for X-ray Coherent Attosecond Pulse Pair Spectroscopy "
9:50	**Raphael Kaubruegger**, *JILA and University of Colorado Boulder*, "Lieb–Mattis states for robust entangled differential phase sensing: prospects for implementation in cavities"	**Michael Krueger**, *Technion*, "Quantum tomography of nonperturbative harmonic light from solids"	**Camille Samulski**, *Los Alamos National Laboratory*, "Polar Direct Drive Target Design for a 10MJ Laser Inertial Fusion Energy Facility"	**Phay Ho**, *Argonne National Laboratory*, "Indistinguishability and Quantum Pathways in Nonlinear Resonant X-ray Scattering"
10:10	**Guglielmo Panelli**, *Stanford University*, "Excitation of the Strontium clock state with megahertz Rabi frequency and a new platform for quantum-enhanced sensing"	**Mohammed Hassan**, *University of Arizona*, "Ultrafast Quantum Optics"	**Jorge Rocca**, *Colorado State Univesity*, "Physics of ion acceleration in nanowire arrays irradiated with ultrashort laser pulses of relativistic intensity "	**Justin Peatross**, *Brigham Young University*, "Polarization of Nonlinear Thomson Scattering"

10:30 — Break —

Plenary Session [Ballroom 1+2] J. Gary Eden, Chair

10:50 **Paul Hoff**, *Xcimer Energy, Inc.*, "The Excimer Laser: Its Development and Evolution"

11:20 **David Ayuso**, *Imperial College London*, "Towards microfluidic chips for efficient chiral recognition"

	Excimer Laser Development	*Chirality II*	*Frontiers of Sensing and Signal Processing*	*Quantum Networks II*
	Ballroom 1	Magpie A	Magpie B	Wasatch A
	J. Gary Eden, Chair	Olga Smirnova, Chair	Dana Anderson, Chair	Michael Kolodrubetz, Chair
12:00	**Mike Campbell**, *University of California, San Diego*, "Laser Systems for Inertial Fusion: Requirements, Challenges and Opportunities"	**Olga Smirnova**, *Max Born Institute*, "Enantio-sensitive molecular compass"	**Dana Anderson**, *Infleqtion, and JILA, University of Colorado Boulder*, "Atomtricity: From Field Theory to Atom Transistors"	**John J. Prevost**, *University of Austin at San Antonio*, "Next generation quantum memories with Rydberg technology"
12:20	**J. Gary Eden**, *University of Illinois, Texas A&M University*,"A Brief Overview of the Discovery, Critical Parameters, and Scaling of the Rare-gas Halide Excimer Lasers"	**Vladimiro Mujica**, *Arizona State University*, "Surface Chirality Sensors Based on Spin-Dependent van der Waals Interactions and CISS-Induced Spinterface Effects"	**Shengwang Du**, *Purdue University*, "Quantum-Enhanced Nonlinearities for Scalable All-Optical Neural Networks"	**Akbar Safari**, *University of Wisconsin-Madison*, "Efficient generation of single photons and atom-photon entanglement in a quantum network node"
12:40	**Sophia Malko**, *Princeton University*, "Role of the Nernst Effect in magneto-inertial plama"	**Andrés Ordóñez**, *Freie Universität Berlin*, " Non-Dichroic Enantio-Sensitive Chiroptical Spectroscopy"	**Martin Fischer**, *Max Planck Institute for the Science of Light*, "Spatial coherence of single photons in spontaneous emission from a single atom"	**Michael Kolodrubetz**, *University of Texas at Dallas*, "Geometry and Topology in Cavity QED"

17:30 **Poster Session and Buffet Dinner — Ballrooms 2 & 3**

Thursday Evening January 8, 2026

Plenary Session [Ballroom 1+2] David Reis, Chair

19:00 **Yanhua Shih**, *University of Maryland, Baltimore County*, "From Ghost Frequency Comb to Quantum Ghost Frequency Comb"
19:30 **Siegfried Glenzer**, *SLAC National Accelerator Laboratory and Stanford University*, "Advancing inertial fusion energy using ultra-high peak power X-rays"
20:00 **Ido Kaminer**, *Technion - Israel Institute of Technology*, "Quantum Optics and Entanglement at the Extremes"

	Multiparticle Interference for Quantum Sensing Ballroom 1 Thomas A. Smith, Chair	*Challenges with MJ Class Laser Systems for Inertial Fusion Energy* Magpie A Richard L. Sandberg, Chair	*Unconventional Platforms for Entanglement: High Energies and Ultrafast Timescales* Magpie B Ido Kaminer, Chair	*Optical Devices* Wasatch A Selim Shahriar, Chair
20:50	**Melissa A. Guidry**, *MIT-LIGO*, "Heisenberg scaling in a continuous-wave interferometer"	**Carmen Menoni**, *Colorado State University*, "Optical coatings for MJ Lasers"	**Claus Ropers**, *Max Planck Institute for Multidisciplinary Sciences & University of Göttingen*, "Free-Electron Quantum Optics: Coherent Control, Correlations, and Entanglement"	**Frances Ligler**, *Texas A&M University*, "The road to an optical biosensor based on quantum photonics"
21:10	**Thomas A. Smith**, *Naval Air Warfare Center, Aircraft Division*, "Nontrivial intensity correlations with coherent continuous-wave lasers"	**Robert Kirkwood**, *Consultant at Xcimer Energy, Inc.*, "The Promise and Challenges of Ion Wave Plasma Optics for Enabling Laser Driven Fusion Energy"	**Philipp Haslinger**, *VCQ - Atominstitut - USTEM Technische Universität Wien*, "Entanglement in Electron Microscopy"	**Selim Shahriar**, *Northwestern University*, "Demonstration of a Rb-based Mode-Locking Free Subluminal Ring Laser Gyroscope"
21:30	**Mary F. Locke**, *Naval Air Warfare Center, Aircraft Division*, "Two-atom correlations in a continuous cold atom beam"	**Richard L. Sandberg**, *Brigham Young University*, "Understanding nanometer structure-performance relation of foams for inertial fusion energy "	**David A. Reis**, *Stanford University*, "Transduction of squeezed light from infrared to x rays"	**Axel Hoffmann**, *University of Illinois Urbana-Champaign*, "Hybrid Magnon Modes"
21:50	**Emanuele Galiffi**, *The University of Texas at Austin*, "Multiphoton Hong-Ou-Mandel Interference from Classical Light in a Time-Varying Medium"	**Pravesh Patel**, *Focused Energy Inc.*, "Focused Energy's Path to Inertial Fusion Energy: Status and Challenges "	**Aviv Karnieli**, *Technion - Israel Institute of Technology*, "Towards observation of entanglement in free-electron pairs and free-electron—bound electron systems"	**Stephen Cronin**, *University of Southern California* , "Probing the Real and Imaginary Dielectric Response of the Electric Double Layer using Surface Plasmon Resonance Nanostructures"
22:10	**Ivan Burenkov**, *Joint Quantum Institute at NIST*, "Towards robust detector tomography"	**Gabriele Benincasa**, *Texas A& M University*, "Experimental study of laser plasma instabilities with broadband laser pulses at the GSI PHELIX laser facility"	**Nicholas Rivera**, *Cornell University*, "Controlling quantum correlations of bright multimode light sources"	**Gerhard Klimeck**, *Purdue University*, "Quantitative Quantum Device Design and Optimization to increase THz Radiation Power"

Friday Morning, January 9, 2026

ver. Jan. 07, 2026

7:00 **Continental breakfast** [Ballroom 1+2]

Plenary Session [Ballroom 1+2] Alexei Sokolov, Chair

7:30 **Matthew Pelton**, *University of Maryland, Baltimore County*, "Strong light-matter coupling at the nanoscale for quantum photonics"

8:00 **Philip Hemmer**, *Texas A&M University*, "Nanodiamonds and quantum sensing"

8:30 **Vanderlei S. Bagnato**, *University of São Paulo and Texas A&M University*, "The revival of the Superfluid or decaying to a thermal gas during relaxation of a far-from equilibrium Bose-Einstein Condensate"

	Quantum and Nano Photonics Ballroom 1 Matthew Pelton, Chair	*Nanodiamonds and Sensors* Magpie A Philip Hemmer, Chair	*From Quantum to Life* Magpie B Vladislav Yakovlev, Chair	*Attosecond Spectroscopy: from Classical to Quantum* Wasatch A Mikhail Ivanov, Chair
9:10	**Arka Majumdar**, *University of Washington*, "Integrated Nanophotonics with Colloidal Materials"	**Milos Nesladek**, *University Hasselt*, "Nanoscale thermometry on the neural-cell plasma membrane using NV-nanodiamond"	**Igor Lednev**, *University at Albany, State University of New York*, "Raman Spectroscopy and Machine Learning for Biomedical Applications"	**Omer Kneller**, *Regensburg University*, "Lightwave Engineering of Excitonic States in an Atomically Thin Semiconductor"
9:30	**Lee Bassett**, *University of Pennsylvania*, "Engineering quantum defects in colloidal nanocrystals"	**Peter J. Burke**, *University of California, Irvine*, "Mitochondria in quantum sensing: Effect of photobleaching and phototoxicity"	**Layla Pires**, *Texas A&M University*, "Multiphoton melanin-mediated energy transfer enables ocular melanoma eradication"	**Mikhail Ivanov**, *Max Born Institute, Germany*, "Attosecond Quantum Optics and Tortured Super-Radiance"
9:50	**Alexey Belyanin**, *Texas A&M University*, "Nanophotonics for coherent control of topological electron states"	**Peter Pauzauskie**, *University of Washington*, "Solid state laser refrigeration of nanoscale plasmonic sensors probed via Raman spectroscopy"	**Dylan Almeida**, *University of California, Berkeley*, "Photon Correlation Measurements of Fluorescence as a Probe of Quantum Coherence in Multi-Chromophoric Systems"	**Hamed Merdji**, *Ecole Polytechnique*, "Quantum-optical nature of ultrafast high-harmonic generation in semiconductors"
10:10	**Yuri Rostovtsev**, *University of North Texas*, "Correlated quantum fields generated by vacuum fields"	**Gurudev Dutt**, *University of Pittsburgh*, "Toward Macroscopic Quantum Superpositions with Magnetically Levitated Diamond Crystals"	**Michelle B. Requena**, *Texas A& M University* , "Spin Exchange, Molecular Energy Transfer, and Photoreactions for Destroying Cancer Cells and Microorganisms and Overcoming Antibiotic Resistance "	**David Purschke**, *Laboratory for Laser Energetics*, "Disorder-driven decoherence in the attosecond dynamics of amorphized silicon"

10:30 — Break —

Plenary Session [Ballroom 1+2]Robert Usselman, Chair

10:50 **Dominik Schneble**, *Stony Brook University*, "Exploring super- and subradiant dynamics with matter-wave quantum emitters"

11:20 **Vladislav Yakovlev**, *Texas A&M University*, "Quantum Biomechanics"

	Cold Atoms Ballroom 1 Vanderlei S. Bagnato, Chair	*Superradiant Maser-Laser* Magpie A Dominik Schneble, Chair	*Frontiers of Quantum Optics II* Magpie B John J. Prevost, Chair	*Laser Spectroscopy* Wasatch A Aart Verhoef, Chair
12:00	**Thu Hac Huong Le**, *National Institute of Advanced Industrial Science and Technology (AIST), Japan*, "Metasurfaces in Laser Cooling and Trapping of Atoms Towards Miniaturized Cold Atom Platforms"	**Yuimaru Kubo**, *Okinawa Institute of Science and Technology*, "A near-quantum limited diamond maser amplifier operating at millikelvin temperatures"	**Robert Usselman**, *Florida Institute of Technology*, "Biological Systems as Functional Quantum Sensors"	**Dmitry Kurouski**, *Texas A&M University*, "Raman Spectroscopy in Digital Farming"
12:20	**Wenchao Ge**, *University of Rhode Island*, "Double Quantum-Enhanced Sensing of Displacements with Trapped-ion Crystals"	**Daan M. Arroo**, *Imperial College London*, "Towards broadband, high dynamic-range diamond maser amplifiers"	**Daniel I. Herman**, *Sandia National Laboratories*, "Dual-comb spectroscopy with quantum states of light"	**Konstantin Dorfman**, *Hainan University*, "High precision spectroscopy with metasurfaces"
12:40	**Philippe Bouyer**, *Univ. Amsterdam and Technical Univ. Eindhoven*, "Atom Interferometry Beyond Its Limits"	**Ren-bao Liu**, *The Chinese University of Hong Kong*, "Superradiant lasing from a quantum many-body emitter"	**Jared Weidman**, *Michigan State University*, "Quantum electron dynamics of molecules in cavities"	**Aart Verhoef**, *Texas A&M University*, "Super-resolved multiphoton microscopy with double enhancement achieves sub-100 nm resolution"

Friday Evening, January 9, 2026

Plenary Session [Ballroom 1+2] Boubacar Kanté, Chair

19:00 **Michael Tobar**, *The University of Western Australia*,
"Electric Landé g-Factor and Pseudo-Angular Momentum: A Symmetry-Based Dual Reformulation of Electric Dipole Moments and the Stark Effect"
19:30 **Vladimir Malinovsky**, *DEVCOM Army Research Laboratory*, "Quantum Control as a Unifying Principle for Sensing, Metrology, and Computation"
20:00 **Nir Davidson**, *Weizmann Institute of Science*, "Complex bands and topology with coupled lasers"

	Quantum Technologies to test Fundamental Physics Ballroom 1 Michael Tobar, Chair	*Quantum Sensing II* Magpie A Vladimir Malinovsky, Chair	*Controlling Coherence in Photonic Networks* Magpie B Nir Davidson, Chair	*Frontiers of Quantum Optics III* Wasatch A Steven F. DiMarco, Chair
20:50	**Andrew Geraci**, *Northwestern University*, "Optomechanical sensors for dark matter, axions and high frequency gravitational waves"	**Michael Romalis**, *Princeton University*, "Nuclear spin comagnetometer gyroscopes with ^{21}Ne"	**Boubacar Kanté**, *University of California, Berkeley*, "Arbitrary fractional quantization in Dirac systems and scale-invariant lasers"	**Steven F. DiMarco**, *Texas A&M University*, "Quantum Ocean: Resetting Ocean Science with Applications of Quantum Sensors, Materials, Networks"
21:10	**John Davis**, *University of Alberta*, "Sensing Gravitational Waves and Dark Matter with Superfluid Helium"	**Victor Acosta**, *University of New Mexico*, "Optical nuclear magnetic resonance spectroscopy of solid-state spins"	**Sebastian Klembdt**, *Würzburg University*, "Polariton Lattices, Higher-Order Topology, and Artificial Gauge Fields"	**Yi Rao**, *Utah State University*, "Polariton-Modulated Singlet Fission in Cavity"
21:30	**Ben McAllister**, *Swinburne University of Technology*, "Quantum Sensing Above and Below Ground: ORGAN and CELLAR"	**Emily Davis**, *New York University*, "Spin squeezing in an ensemble of nitrogen-vacancy centers in diamond"	**Lida Xu**, *University of Maryland*, "Nonlinear topological photonics: from frequency combs and harmonic generation to emergent phenomena"	**Sebastián C. Carrasco**, *DEVCOM Army Research Laboratory*, "Dynamic Population Suppression for Two-Photon Excitation"
21:50	**Aaron Chou**, *Fermilab*, "Targeting the QCD axion with qubit-based electronics"	**Onur Hosten**, *Institute of Science and Technology, Austria* , "Control, sensing and gravitational coupling of milligram pendulums: towards interfacing quantum and gravity"	**Arthur Montanari**, *Northwestern University*, "Disorder-Promoted Synchronization and Coherence in Coupled Laser Networks"	**Yonatan Sivan**, *Ben-Gurion University*, "Photoluminescence from metals – (all) arguments resolved"
22:10	**Elizabeth Ruddy**, *Yale University, University of Colorado Boulder*, "Quantum sensing to accelerate the axion dark matter search"	**Georg Raithel**, *University of Michigan*, "Sagnac Tractor Atom Interferometer on a Photonic Integrated Circuit"	**Alexander Cerjan**, *Sandia*, "Classifying topology in nonlinear photonic systems"	**M. Tuan Trinh**, *Utah State University*, "Quantum Coherent State of Plasmon-exciton Strong Coupling in a Nanocavity"

List of Posters

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Adel Ali *Texas A& M University*
"Fermionic Dicke phase transition in Circuit Quantum Magnetostatics"

Gabriele Benincasa *Texas A& M University*
"Experimental study of laser plasma instabilities with broadband laser pulses at the GSI PHELIX laser facility"

Sheila Chauwinoir *Texas A&M University*
"Extreme-Value Statistics of Soliton Dynamics: Validating Model for Robust Inertial-Confinement Fusion Design"

Ayla Hazrathosseini *Texas A&M University*
"Entanglement in Diamond Color Centers for Quantum Technologies"

Kunwar Kalra *Texas A&M University*
"Universal lower bound on the computational complexity of Gaussian boson sampling"

Christos Karapoulitidis *Stevens Institute of Technology*
"Distinguishing Semi-Classical and Quantum Models of Proper Time with Atomic Clocks"

Amber Manspeaker *Naval Air Warfare Center, Aircraft Division*
"Is the GFC the result of Intensity Fluctuation Correlation?"

Nathan G. Phillips *Texas A&M University*
"Fluorescence Imaging of Vibrationally Excited Molecular Oxygen using an Optical Parametric Oscillator"

Robert Randolph *Texas A&M University*
"Development of an Active Atomic Vapor Filter Utilizing Quantum Resonance Enhanced Four Wave Mixing"

Georgi Gary Rozenman *Massachusetts Institute of Technology*
"Optical Emulation of Quantum Systems Using Pulsed Lasers and Classical Optics"

Samuel Sahel-Schackis *SLAC National Accelerator Laboratory*
"Investigation of the effects of nanoscale facets on catalytic activity in photo-driven nanosystems"

Zhijie Shi *Huazhong University of Science and Technology*
"Low-Energy Femtosecond LIBS Enabled by Mie-Resonance-Induced Field Enhancement"

AmirAli VanakiFarahani *Texas A&M University and University of Illinois*
"Hybrid Pumping of Excimer Lasers as a Candidate Architecture for Fusion Drivers"

Cooper Watson *Texas A& M University*
"Review of the Quantum Boltzmann Equation"

Fan Yang *Texas A& M University*
"Coherence-Enhanced Open Quantum Battery"

Wenzhuo Zhang *Texas A& M University*
"Quantum evolution of mixed states and efficiency of quantum heat engines"

Shiyao Zhu *Zhejiang University, China*
"Realizing the Haldane Model in Thermal Atoms"