PQE XXXIV Participants

Charlene Ahn, California Institute of Technology
"Protecting quantum states through feedback control"

Roland E. Allen, Texas A&M University
"The Intricate Dance of of Electrons and Nuclei in a Photochemical Reaction"

Ercan Alp, Argonne National Laboratory
"Anomalous isotopic dependence of thermal expansion coefficient of Ge measured by X-ray Normal Incidence Diffraction"

Petr Anisimov, Texas A&M University
"Narrowing Mossbauer Spectra by rotating magnetic field"

David Attwood, University of California at Berkeley
"Imaging at 20 nm Spatial Resolution: Soft X-Ray Microscopy and EUV Lithography"

Marc Baldo, Massachusetts Institute of Technology
"High efficiency phosphorescence from metal-organic complexes"

Guy Beadie, Naval Research Laboratory
"Femtosecond CARS in DPA Solutions: Spectral Dynamics"

Raymond Beausoleil, HP Laboratories
"Applications of Electromagnetically Induced Transparency to Quantum Information Processing"

Alexey Belyanin, Texas A&M University
"Highly efficient nonlinear light generation in quantum cascade lasers"

Ryan Bennink, University of Rochester
"Quantum Imaging and EPR: Violation of the continuous-variable EPR bound by a factor of 100"

Janos Bergou, Hunter College, CUNY
"Optimum strategies for the discrimination of quantum states"

Alexander A. Betin, Raytheon

Sergey Bezrukov, National Institutes of Health
"Information and Noise in Ion Channel Signals"

Josef Bille, University of Heidelberg
"Femtosecond Laser Surgery"

Rolf Binder, University of Arizona
"Many-particle theory of all-optical polarization switching in semiconductor quantum wells"

William D. Blackman, Carrier, Blackman & Associates, P.C.
"Patent Strategy"

Steve Blair, University of Utah
"Light transmission through nanostructured metal films"

Robert Boyd, University of Rochester
"Slow and Fast Light in Room Temperature Solids"

Howard Brandt, Army Research Laboratory
"Finite vacuum energy density in quantum field theory"

Gavin Brennen, NIST Gaithersburg
"Maintaining a robust quantum computer register in periodic systems with Bose-Hubbard dynamics"

William A. Bundy, Raytheon Company

Andrea Burzo, Texas A&M University
"Keldysh model for multiphoton ionization of H2+ by single cycle pulses timed with respect to molecular oscillations"
Andrea Burzo, Texas A&M University
"Multiphoton ionization by single cycle pulses synchronized with molecular motion"

Mark Byrd, Harvard University
"Strategies for Preserving Quantum Information"

Robert Byren, Raytheon

Connie Chang-Hasnain, University of California at Berkeley
"EIT and all-optical buffers"

Andrew Charman, University of California at Berkeley and LBNL
"EIT in Magnetized Plasmas: Quantum Treatments and Atomic Analogies"

Hui Chen, Texas A&M University
"Cs dimer absorption spectrum at 780nm"

Kent Choquette, University of Illnois
"Photonic Crystal Vertical Cavity Lasers"

James Chou, California Institute of Technology
"Generation of Nonclassical Photon Pairs for Scalable Quantum Communication with Atomic Ensembles"
Weng Chow, Sandia National Laboratory
"Coherent effects and dephasing in semiconductor quantum dots"

Leon Cohen, City University of New York (Hunter College)
"Joint representations for arbitrary variables"

Scott Crooker, Los Alamos National Laboratory
"Engineered Energy Flows in Nanocrystal Quantum Dot Assemblies"

Steve Cundiff, JILA
"Femtosecond spectroscopy of semiconductors"

Tatjana Curcic, Booz Allen Hamilton

Bob Doering, Texas Instruments
"Introduction to the Limits of CMOS Technology and Prospects for Post-CMOS"

Arthur Dogariu, NEC Research Institute
"Correlated photon generation in fiber using four-wave mixing"

Yusheng Dou, Texas A&M University
"Detailed dynamics of photoisomerization of stilbene"

Yusheng Dou, Texas A&M University
"Molecular calculations with two-center correlated orbitals: Numerical calculation of electron integrals"

Michael Drewsen, University of Aarhus
"Sympathetically cooled molecular ions in a linear Paul trap"

Gérald Dujardin, Université Paris Sud
"Electronic control of an individual bistable molecule"

Dallin Durfee, Brigham Young University

Shmulik Eisenmann, Hebrew University

Noam Erez, Texas A&M University
"Zeno Error Correction"

Donald J. Ersler, Donald J. Ersler, S.C.
"Obtaining a Patent"

Christopher Fang-Yen, Massachusetts Institute of Technology
"Nonclassical photon statistics in the Cavity QED Microlaser"

Eric Forsythe, Army Research Laboratory
"Molecular-Based Devices for Photon Emitting Applications: Advantages and Challenges"

James Franson, Johns Hopkins University
"Linear Optics Quantum Computing"

Edward S. Fry, Texas A&M University
"Light Scattering at an Angle of Zero Degrees using Four-Wave Mixing"

Ildar Gabitov, University of Arizona
"Ultrashort optical pulses in active medium with embedded metallic nanoparticles"

Frank Gaitan, Southern Illinois University
"Controlling Qubit Transitions during Non-Adiabatic Rapid Passage with Application to Quantum Computing"

Lorenzo Galleani, Politecnico di Torino, Italy
"The phase space of non-stationary noise"

Daniel J. Gauthier, Duke University
"The information velocity in fast- and slow-light media"

Ernie Glover, LBL
"Picosecond Metal-Insulator Transitions in An Expanding Metallic Fluid: Kinetics of Particle Formation"

Lawrence J. Goffney, Jr., Patent Litigation Consultant
"Intellectual Property: Trends and Concerns for the Scientific Community"

Jiangbin Gong, University of Chicago

Deep Gupta, University of California at Berkeley
"Sympathetic Cooling in Atom Traps: Road to Fermi Degeneracy and Bose-Einstein Condensation of Molecules"

Richard Haight, IBM T.J. Watson Research Center
"High Resolution Material Ablation and Deposition with Femtosecond Lasers"

Kohzo Hakuta, The University of Electro-Communications, Japan
"Manipulating Atoms Using Evanescent Fields around a Thin Optical Fiber"

Naomi Halas, Rice University
"Tunable Plasmonic Nanostructures: fundamental components for nano-optics"

Dennis Harris, Boeing

David Haubrich, Texas A&M University
"Characteristics of Laser Beam Fanning in Photorefractive Crystals and its Applications"

Joe Haus, University of Dayton
"Nonlinear and Quantum Optics in Photonic Band Gap Structures"

Philip Hemmer, Texas A&M University
"Applications of EIT in doped solids"

Peter R. Herman, University of Toronto
"Advanced lasers for writing 3-D optical circuits and biophotonic chips"

Mark C. Hersam, Northwestern University
"Probing Charge Transport through Individual Molecules on Degenerately Doped Silicon Surfaces"

Peter Heszler, Uppsala University, Sweden
"Performance of Spatial Quantum Optical Fourier Transformation in the Entanglement and Non-entanglement Limit"

Alan E. Hill, Texas A&M University and Plasmatronics
"The Quantum Otto Mobile: its Experimental Verification and Application to Directed Energy"

Cory Hill, NASA Jet Propulsion Laboratory
"Recent developments in Sb-based mid-IR interband cascade lasers"

Mark Hillery, Hunter College, CUNY
"Quantum walks and scattering theory"

John Holzrichter, UC Davis and LLNL
"Optical and Microwave Interferometry for Human Speech Characterization"

John Howell, University of Rochester
"Pixel entanglement: position-momentum quantum information processing"

Gilbert Hoy, Old Dominion University
"Stimulated Emission of Gamma-Radiation: A Proposed Experiment"

Paul Steve Hsu, Texas A&M University

Diana Huffaker, University of New Mexico
"Atomic Structure of Self-Assembled and Patterned Quantum Dots"

David H. Hughes, Air Force Research Laboratory
"Moment density characterization of FDTD generated electromagnetic pulses in linear and nonlinear dispersive media"

Randall G. Hulet, Rice University
"Conversion of an Atomic Fermi Gas to a Molecular Bose Gas"

Kenji Ikushima, University of Tokyo, Japan
"Quantum dot photon detectors, novel THz scanning microscopes, and their application"

Deborah Jackson, NASA Jet Propulsion Laboratory
"What are the Physical Limitations on Achieving Perfect Quantum Efficiencies?"

Verne L. Jacobs, Naval Research Laboratory
"Reduced-Density-Matrix Descriptions for Coherent Electromagnetic Interactions in Quantized Many-Electron Systems"

Ravi Jain, University of New Mexico
"Recent Advances in Fiber Lasers and Applications"

Christopher Jarzynski, Los Alamos National Laboratory
"Quantal foundations of far-from-equilibrium work identities"

Juha Javanainen, University of Connecticut
"Modeling coherent association of fermionic atoms into molecules –or– Half of a fermion in an optical lattice

Andrew Jordan, University of Geneva, Switzerland
"Energy fluctuations, persistent current and entanglement in the ground state of a system coupled to a bath"

Nikolai Kalugin, Texas A&M University
"Sensitive tunable THz detector based on a quantum Hall device"

Kishore T. Kapale, Texas A&M University
"Novel Approach to Molecular Physics Through Correlated Two-Center Orbitals"

Henry Kapteyn, JILA
"Coherent Control and Chemical Sensing"

Masayuki Katsuragawa, University of Electro-Communications, Japan
"Frequency modulation of light using three correlated Raman coherences"

Peter D. Keefe, Keefe & Associates
"Principles of Intellectual Property for Scientists"

Peter D. Keefe, Keefe & Associates
"Second Law Implications of a Magneto-Caloric Effect Adiabatic Phase Transition of Type I Superconductive Particles"

Jacob Khurgin, Johns Hopkins University
"Comparative analysis of optical buffers and nonlinear switches for high bit rate systems"

Moochan Kim, Texas A&M University
"Analytic calculation of the energy for homo- and hetero-nuclear molecules with exact two center molecular orbits"

H. Jeff Kimble, California Institute of Technology
"A One-Atom Laser in the Regime of Strong Coupling"

Laszlo B. Kish, Texas A&M University
"Fluctuation-Enhanced Sensing"

Olga Kocharovskaya, Texas A&M University
"Laser manipulation of nuclear transitions: theory"

Vitaly Kocharovsky, Texas A&M University
"Nonadiabatic mechanisms of radiation from atoms in cavity QED"

Roman Kolesov, Texas A&M University
"Diagnostics of Magnitude and Direction of the Magnetic Field in Plasmas by means of CPT"

Karl L. Kompa, Max-Planck Institut für Quantenoptik
"Getting ahead of IVR – entering a new age of laser chemistry"

Junichiro Kono, Rice University
"Ultrafast Optical Processes in Ferromagnetic Semiconductors"

Elena Kuznetsova, Texas A&M University
"Possibility to suppress excited state absorption in solid-state lasers"

Hwang Lee, NASA Jet Propulsion Laboratory
"Non-photon number-discriminating detectors"

Kotik Lee, Booz Allen Hamilton

M. Howard Lee, University of Georgia
"Some special low temperature statistical thermodynamics: Fermi-Bose equivalence in 2d and pseudo BEC"

Kevin Lehmann, Princeton University
"Spectroscopy and Dynamics in superfluid helium nanodroplets"

Heiner Linke, University of Oregon
"Brownian Motors from Biology to Quantum Electronics"

Hoi-Kwong Lo, University of Toronto
"Security of quantum key distribution with imperfect devices"

John (Jay) Lowell, DARPA/DSO

Robert Lucht, Purdue University
"Electronic-Resonance-Enhanced Coherent Anti-Stokes Raman Scattering for Molecular Detection: Experiments and Theory"

Mikhail D. Lukin, Harvard University
"Stationary pulses of light in an atomic medium"

Mark Lundstrom, Purdue University
"Physics of the Ultimate Transistor"

Lute Maleki, Jet Propulsion Laboratory
"Nonlinear optics with whispering gallery mode crystal resonators"

John Mamin, IBM Almaden Research Center
"Magnetic resonance force microscopy and the quest for single spin detection"

Andrey Matsko, Jet Propulsion Laboratory
"EIT in resonator chains: similarities and differences with atomic media"

Eric Mazur, Harvard University
"Femtosecond Micromachining"

Manjusha Mehendale, Princeton University
"Towards FAST CARS: CARS Spectroscopy of Bacterial Spores"

Kazuhiko Misawa, Tokyo University of Agriculture and Technology
"Chirp dependent fluorescence from cyanine dye molecules"

Karina Morgenstern, Freie Universität Berlin
"Local investigation of electron induced processes in water-metal systems"

Charles Munnerlyn, Visx Inc.
"Improving Laser Vision Correction"

Judy Munnerlyn, Visx Inc.

Margaret Murnane, JILA
"Multiphoton Photonics"

Ashok Muthukrishnan, Texas A&M University
"Making unallowed two-atom transitions allowed using entangled photons"

Frank Narducci, Naval Air Systems Command
""Measurement of Ground State Recovery Times"

Evgenii Narimanov, Princeton University
"Light in asymmetric resonant cavities: chaos, tunneling and localization"

Justin Nash, Naval Air Systems Command
"Nonlinear Polarization Rotation in Ultra Cold Sodium"

Theo Nieuwenhuizen, University of Amsterdam
"Quantum thermodynamics: thermodynamics at the nanoscale"

Mikhail A. Noginov, Norfolk State University
"Emission control in scattering and composite media"

Stefan Nolte, Friedrich-Schiller-University Jena
"Ultrafast laser processing: New options for 3D photonic structures"

Peter Nordlander, Rice University
"Plasmon hybridization in nanostructures"

Franco Nori, RIKEN and University of Michigan
"Controlling the Motion of Particles in Mixtures and the Motion of Magnetic flux Quanta in Superconductors"

Minoru Obara, Keio University, Japan
"Surface microstructuring and photonic device fabrication in transparent materials with temporally tailored ultrashort laser"

Jos Odeurs, Katholieke Universiteit Leuven
"Aspects of Electromagnetically Induced Transparency with Nuclear Radiation"

Silviu Olariu, Texas A&M University
"Laser manipulation of nuclear transitions: experiment"

Lorenza Onofrio, Los Alamos National Laboratory

Chong H. Ooi, Texas A&M University
"Second Order Photon Pair Correlation of Double Spontaneous Raman Scheme"

Kurt E. Oughstun, University of Vermont
"Accuracy of the Group Velocity Description and the Question of Superluminal Pulse Velocities"

Anil Patnaik, Texas A&M University
"Manipulating retrival of stored light pulse"

Justin Peatross, Brigham Young University
"Phase Matching of High Harmonic Generation"

Dmitry Pestov, Texas A&M University
"Far-infrared few-cycle-pulse emission via resonant mixing in semiconductor heterostructures"

Martino Poggio, University of California at Santa Barbara
"Local Manipulation of Nuclear Spin in a Semiconductor Quantum Well"

Markus Pollnau, Swiss Federal Institute of Technology
"Ti:sapphire waveguide emitters as light sources for interferometry"

Wolfgang Porod, Notre Dame
"Reversibility, Mawell's Demon, and Computation"

Herschel A. Rabitz, Princeton University
"Controlling Quantum Phenomena: Why Does it Appear to be so Easy to Achieve?"

Mark Raizen, University of Texas at Austin
"Quantum Engineering of Atomic Number States"

Charles Reichhardt, Los Alamos National Laboratory
"Ratchet Superconducting Vortex Cellular Automata"

Cynthia Olson Reichhardt, Los Alamos National Laboratory

John Reintjes, Naval Research Laboratory
"Femtosecond CARS in DPA Solutions: Temporal Dynamics"

Stuart A. Rice, University of Chicago
"Variations on Adiabatic Transfer With Applications to Product Selection in a Reaction"

Martin Richardson, University of Central Florida
"Defying diffraction - High intensity femtosecond laser propagation through the atmosphere"

Bill Rippard, NIST Boulder
"Coherent Microwave Oscillations in Spin Momentum Transfer Device"

Yuri Rostovtsev, Texas A&M University
"Radiation trapping under the presence of coherent drive"

Barry Sanders, University of Calgary
"Sharing quantum secrets: theory and experiment"

Ted Sargent, University of Toronto
"Electroluminescence from Quantum Dot Crystals"

Zoe-Elizabeth Sariyanni, Texas A&M University
"Resonant CARS Simulation in Atomic Systems and DPA"

Vladimir A. Sautenkov, Texas A&M University
"Electromagnetically induced magnetochiral anisotropy in rubidium vapor"

Vladimir A. Sautenkov, Texas A&M University
"Femtosecond coherent two-dimensional spectroscopy of cesium molecules cesium molecules"

Wolfgang Schleich, University of Ulm, Germany
"Fresnel representation of the Wigner function"

Andrew Scott, University of New Mexico
"Multipartite entanglement and quantum-error-correcting codes"

James Scully, American Airlines

Judy Scully, PQE

Marlan O. Scully, Texas A&M University and Princeton University
"Femtosecond Adaptive Spectroscopic Techniques"

Ken Segall, Massachusetts Institute of Technology
"Josephson Junctions for Quantum Ratchets"

Tamar Seideman, Northwestern University
"Dynamics in Quantum Electronics: From Nanochemistry to New Forms of Molecular Machines"

Selim M. Shahriar, Northwestern University
"Generation of Motional Entanglement via Single-Photon Controlled Single-Atom Interferometry"

Vladimir M. Shalaev, Purdue University
"Plasmonic Nanoantennae for Manipulating Light, Sensing Molecules, and Nanomanufacturing"

Lu J. Sham, University of California, San Diego
"Progress in optical control of semiconductor systems for quantum information"

C.-K. (Ken) Shih, University of Texas at Austin
"Rabi oscillation damping in self-assembled semiconductor quantum dot"

Yanhua Shih, UMBC
"Beyond the Heisenberg uncertainty"

Louis Sica, Naval Research Laboratory
"Derivation of probabilistic Bell's inequalities from correlational forms"

Art Smirl, University of Iowa
"Putting a new spin on quantum interference: Independent control of spin and charge"

David D. Smith, NASA Marshall Space Flight Center
"Coherence effects in coupled resonators"

Winthrop Smith, University of Connecticut
"The kinetics of trapped atomic/molecular ion cooling by ultracold atoms, using a hybrid Paul trap/MOT"

Alexei Sokolov, Texas A&M University
"Prospective sub-cycle field shaping by molecular modulation, and its potential applications"

Andrew Steckl, University of Cincinnati
"Nature's Photonic Nanostructures - Photoemission from rare earths and hybrid inorganic/organic materials"

Michael Steiner, Naval Research Laboratory
"Matter-based Measurement Theory"

Jayson Stewart, Texas A&M University
"Frequency quadrupled fiber amplifier at 1014nm"

Mark I. Stockman, Georgia State University
"Metal/semiconductor nanosystems: Spaser and other phenomena"

Dmitry Strekalov, Jet Propulsion Laboratory
"Influence of inhomogeneous broadening on group velocity in coherently pumped atomic vapor"

Eric Van Stryland, University of Central Florida
"Nondegenerate Two-Photon Absorption Spectroscopy"

Szymon Suckewer, Princeton University
"Towards Ultraintense Ultrashort Laser Pulses via Raman Backscattering in Plasma and Prospect for X-Ray Lasers"

Szymon Suckewer, Princeton University
"Tutorial on Prospect for X-Ray Lasers via Raman Backscattering in Plasma"

Jacek Szczytko, Ecole Polytechnique Federale de Lausanne, Switzerland
"Direct measure of exciton formation in quantum wells from interband luminescence"

Phillip Szuromi, Science Magazine

Tom Theis, IBM
"Carbon Nanotube Transistors: What We've Learned about Molecular Electronics"

Mark Trainoff, Raytheon

Alexei Tyryshkin, Princeton University
"Spin Decoherence Times of Trapped and Conduction Electrons in Silicon-Based Structures"

Kerim Urtekin, Texas A&M University
"Mathematical Analysis and Computations of Simple Two-Center Orbitals in Molecular Quantum Mechanics"

Farit Vagizov, Texas A&M University
"Experimental Observation of Laser-Induced Modification of Mossbauer Spectra"

Lorenza Viola, Los Alamos National Laboratory
"Advances in Decoherence Control"

Yurii Vlasov, IBM Watson Research Center
"Silicon photonic crystals - thrust toward ultradense optical integration"

Paul Voss, Northwestern University
"Experimental and theoretical work on twin-photon production via four-wave-mixing in optical fiber"

Wolfgang Wagner, Rutgers University
"Femtosecond phase cycled 2D spectroscopy"

Hailin Wang, University of Oregon
"Electromagnetically induced transparency from spin coherence in semiconductors"

Lijun Wang, NEC
"Quantum fluctuation, causality, and Abraham force"

Zhisong Wang, Texas A&M University
"Single-pair fluorescence energy transfer inside laser microcavity"

Michael Ware, NIST

Warren Warren, Princeton University
"Breasts and Brains, Similarities and Differences: Exploiting Unconventional Molecular Coherences to Improve Imaging"

Christoph Wasshuber, Texas Instruments
"Single-Electron Transistors: Are they any good?

Martin Wegener, University of Karlsruhe
"Extreme Nonlinear Optics In Semiconductors"

Andy Weiner, Purdue University
"Femtosecond Pulse Shaping: Laser Machining and Frequency Conversion"

George R. Welch, Texas A&M University
"Buffer-gas induced absorption resonances and large negative pulse delay times in Rb vapor"

George R. Welch, Texas A&M University
Welcoming Remarks

Birgitta Whaley, University of California at Berkeley
"Optimally Efficient Control of Quantum Circuits"

Min Xiao, University of Arkansas
"Modified Optical Properties of Semiconductor Quantum Dots by Photonic Structures"

Nan Yu, Jet Propulsion Laboratory

Aihua Zhang, Texas A&M University
"Observation of Anomolous Stimulated Scattering of Sound Waves via Ultra Slow Light"

Nikolay Zheludev, University of Southampon, UK
"Assault on Time Reversal in Chiral Flatland"

Miaochan Zhi, Texas A&M University
"Nuclear collisions induced by single-cycle laser pulses: Molecular approach to fusion"

Xiaoyang Zhu, University of Minnesota
"Understanding molecular electronics from femtosecond spectroscopy"

M. Suhail Zubairy, Texas A&M University
"Quantum disentanglement eraser"