

CHARLES WINTHROP CLARK

I am a theoretical atomic and molecular physicist, whose main activities are in the areas of quantum gases (Bose-Einstein condensation and Fermi-Dirac degeneracy), quantum information and telecommunications, and atomic and molecular phenomena on surfaces, in condensed matter, and in nuclear reactions.

Vital data:

Born 9/30/1952, Minneapolis, Minnesota, eldest son of Robert Newhall Clark and Mary Quiatt Clark. Citizen of U.S.A. Married Deborah Jabon-Clark 8/24/74.

Current addresses:

Office:

B100 Radiation Physics Building
National Institute of Standards and Technology
100 Bureau Drive, Stop 8410
Gaithersburg, MD 20899-8410
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Home:

2310 Parker Avenue
Wheaton, MD 20902
(301) 942-9475
charles.winthrop.clark@gmail.com

Professional employment:

Chief Electron and Optical Physics Division Physics Laboratory National Institute of Standards and Technology Gaithersburg, MD 20899 Supervisor: Katharine B. Gebbie	from 8/1990
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Program Manager, Atomic and Molecular Physics Electronics S&T Division, Code 312 Office of Naval Research 800 N. Quincy Street Arlington, VA 22217 (703)696-5267 Supervisors: Kristl Hathaway (to 6/2005), Preston Grounds	10/2003 - present
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Acting Chief Electron and Optical Physics Division Center for Atomic, Molecular and Optical Physics National Institute of Standards and Technology Gaithersburg, MD 20899 (301) 975-3709 Supervisor: Katharine B. Gebbie	11/1989 - 8/1990
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Physicist 3/1984 - 11/1989
Radiation Physics Division
National Institute of Standards and Technology
(until 10/1/1988, the National Bureau of Standards)
Gaithersburg, MD 20899
Supervisors: Robert P. Madden (to 10/1985); Thomas B. Lucatorto (from 10/1985)

Physicist 10/1983 - 3/1984
Self-employed
Gaithersburg, MD 20877

National Research Council Postdoctoral Fellow 10/1981 - 10/1983
Atomic and Plasma Radiation Division
National Bureau of Standards
Gaithersburg, MD 20899
Supervisor: Andrew W. Weiss

Junior Research Associate 9/1979 - 10/1981
Daresbury Laboratory
Daresbury, Warrington, WA4 4AD
England
Supervisor: Philip G. Burke

Research Associate 1/1979 - 9/1979
Department of Physics
University of Chicago
Chicago, IL 60637
Supervisor: Ugo Fano

Education:

Graduate:

Ph.D., Physics 8/1979
University of Chicago
Chicago, IL 60637
Thesis: Electron Scattering From Diatomic Polar Molecules
Supervisor: Ugo Fano

Guest Graduate Student 1/1978 - 8/1979
Radiological and Environmental Research Division
Argonne National Laboratory
Argonne, IL 60439
Supervisor: Mitio Inokuti

S.M. Physics
University of Chicago
Chicago, IL 60637
9/1974 - 3/1976

Undergraduate:

B.A. (honors), Mathematics and Physics
magna cum laude
Western Washington State College
Bellingham, WA 98225
9/1970 - 6/1974

University of Washington
Seattle, WA 98105
6/1973 - 8/1973

Undergraduate Honors Research Participation Program
Solid State Science Division
Argonne National Laboratory
Argonne, IL 60439
Supervisor: Rudolph P. Huebener
1/1973 - 5/1973

Professional Activities:

Visiting Professor, National University of Singapore, 2007 – present
Adjunct Professor of Physics, University of Maryland, 2007 – present
Fellow, Joint Quantum Institute, University of Maryland at College Park, 2006 – present
Vice-Chair (2003), Chair-Elect (2004), and Chair (2005), Division of Atomic, Molecular, and Optical Physics, American Physical Society.
Program Manager for Atomic and Molecular Physics, Electronics Division, Office of Naval Research, 2003-present
Adjunct Professor, Institute for Physical Science and Technology, University of Maryland at College Park, 1990 – present
Chair, Advisory Board for the Australian Research Council Centre of Excellence in Antimatter-Matter Studies, 2006 - present
Chair, Fellows and Honorary Members Committee, Optical Society of America, 2006
Chair, Organizing Committee, “Towards Quantum Standards: A Workshop on Quantum Information Technology,” The Royal Society, London, 5/2006
Chair, NSERC Review Committee for the Institute for Quantum Computing, Waterloo, Ontario, 2006
Member, Editorial Board, *Journal of Physics B: Atomic, Molecular, and Optical Physics*, 1996 – 2006
Editor for Scientific Applications, *NIST Digital Library of Mathematical Functions*, 1998 - present
Member, Editorial Advisory Board, *Springer Series on Atomic, Optical, and Plasma Physics* (Springer Verlag), 2002 – present
Member, Physics Policy Committee, American Physical Society, 2005-2007
Member, Fellows and Honorary Members Committee, Optical Society of America, 2005

Member, Nominating Committee, Topical Group on Quantum Information, Concepts and Computation, American Physical Society, 2005

Member, Fellowship Committee, American Physical Society, 2003-2005

Member, Davisson-Germer Prize Committee, American Physical Society, 2004-2006

Member, Board of Directors, Senior Executives Association, U.S. Department of Commerce, 2004-present

Chair, Organizing Committee, Workshop on Quantum Information Science and Emerging Technologies, Boulder, CO, 4/2004

Member, Annual Meeting Program Committee, American Association for the Advancement of Science, 2000-2006

Member, Advisory Board, Institute for Theoretical Atomic and Molecular Physics, Harvard-Smithsonian Center for Astrophysics, 2001-2004

Member, Program Committee, March Meeting of the American Physical Society, 2001-2004

Member, International Advisory Committee, Eighth International Conference on Synchrotron Radiation Instrumentation, 2002-2003

Member, Screening Committee, Science Journalism Awards, American Association for the Advancement of Science, 2002

Co-organizer, "Resonances and Reflections: Profiles of Ugo Fano's Physics and Its Influences," Satellite Meeting of the International Conference on Atomic Physics, Cambridge, MA, 7/2002

Co-organizer, Summer Programme on Bose-Einstein Condensation, European Centre for Theoretical Studies in Nuclear Physics and Related Areas, Trento, Italy, 7-8/2002

Chair, Physics Panel II, U. S. Civilian Research and Development Foundation, 2001

Member, Peer Review Rapid Action Committee, Optical Society of America, 2001

Panelist, National Science Foundation Workshop on Computational Physics, 2001

Co-organizer, Workshop on Computational Methods for Few-Body Dynamical Systems, Gaithersburg, MD, 11/2000

Member, Collaborative Computational Project 2 - Continuum States of Atoms and Molecules, Science and Engineering Research Council (United Kingdom), 1990 – 2002

Associate Editor, *Optics Express*, 1997 – 2000

Chair, National Science Foundation Special Emphasis Panel for the Rochester Theory Center, 1998

Member, Committee of Visitors, Directorate for Mathematical and Physical Sciences, National Science Foundation, 1997

Member, Program Committee, Third International Conference on Quantum Functional Devices, Gaithersburg, MD, 11/1997

Guest Editor, Feature Issue on Bose-Einstein Condensation, *Journal of Research of the National Institute of Standards and Technology*, 1996

Member, Selection Committee, E. O. Lawrence Award of the U. S. Department of Energy, 1996

Member (Past Chair), Tellers Committee, Optical Society of America, 1996

Chair, Tellers Committee, Optical Society of America, 1995

Member, Local Committee, Conference on New Methods in Electronic Structure Calculation, St. Mary's College of Maryland, 5/1995

Member, Subcommittee on Laser Spectroscopy, Quantum Electronics and Laser Science Conference (QELS '95), 5/1995

Chair, Organizing Committee, NIST Workshop on Quantum Computing and Communication, Gaithersburg, MD, 8/1994

Member, Program Committee, Topical Conference on High Field Interactions and Short Wavelength Generation, Optical Society of America, 8/1994

Chair, Selection Committee, American Physical Society Award for Outstanding Doctoral Thesis Research in Atomic, Molecular, or Optical Physics, 1992-93

Chair, Local Committee, 8th National Conference on Synchrotron Radiation Instrumentation, Gaithersburg, MD, 8/1993

Member, Executive Committee, Division of Atomic, Molecular, and Optical Physics, American Physical Society, 1990-91

Topical Editor for Atomic Spectroscopy, *Journal of the Optical Society of America B*, 1986-92

Chair, National Academy of Sciences/National Research Council Committee on Line Spectra of the Elements - Atomic Spectroscopy, 1989-91

Consultant, Princeton Plasma Physics Laboratory, Princeton, NJ, 1984-90

Member, National Academy of Sciences/National Research Council Committee on Line Spectra of the Elements - Atomic Spectroscopy, 1987-89

Member, Ad Hoc Committee on Page Charge Analysis, Optical Society of America, 1987 – 1988

Co-director, NATO Advanced Study Institute on Atoms in Strong Fields, Kos, Greece, 10/1988

Co-organizer, symposium on “Formation and Decay of Multiply-Excited States,” IV International Conference on Multiphoton Processes, Boulder, CO, 7/1987

Member, Organizing Committee, IV International Conference on Multiphoton Processes, Boulder, CO, 7/1987

Member, Organizing Committee, “Atomic Spectra and Collisions in External Fields II,” satellite meeting of the XV International Conference on the Physics of Electronic and Atomic Collisions, Egham, England, 7/1987

Organizer, symposium on “Physics of X-ray Lasers,” 1986 Annual Meeting, Optical Society of America, Seattle, WA, 11/1986

Member, Technical Program Committee, 1986 Annual Meeting, Optical Society of America, Seattle, WA, 11/1986

Chair, Organizing Committee, Workshop on Atomic Spectra and Collisions in External Fields, Gaithersburg, MD, 10/1984

Honors and awards:

R&D 100 Award, *R&D Magazine* (2008)

Distinguished Presidential Rank Award, U.S. Senior Executive Service (2007)

Gold Medal, U.S. Department of Commerce (2004)

Physical Sciences Award, Washington Academy of Sciences (2003)

Fellow, Washington Academy of Sciences (2003)

Archie Mahan Prize, Optical Society of America (2002)

Edward U. Condon Award, National Institute of Standards and Technology (2002)

Safety Award, National Institute of Standards and Technology (2002)

Fellow, American Association for the Advancement of Science (2001)

Dr. Lee Visiting Fellow, Christ Church, Oxford University (1999)

Fellow, Institute of Physics (1999)

Appointed to Senior Executive Service, U.S. Department of Commerce (1997)

Silver Medal, U.S. Department of Commerce (1994)

Fellow, Optical Society of America (1994)

Fellow, American Physical Society (1992)
Visiting Fellow, Research School of Physical Sciences, Australian National University (1992)
Equal Employment Opportunity Award, National Institute of Standards and Technology (1991)
Excellence in Research Award, National Bureau of Standards Chapter of Sigma Xi (1987)
Visiting Fellow, Research School of Physical Sciences, Australian National University (1986)
National Research Council Postdoctoral Research Associateship, National Bureau of Standards
(1981 - 83)

Reviewer for journals:

American Journal of Physics
Applied Optics
Computers in Physics
Journal of Computational Physics
Journal of Electron Spectroscopy and Related Phenomena
Journal of Low Temperature Physics
Journal of the Optical Society of America B
Journal of Physics B: Atomic, Molecular, and Optical Physics
Journal of Physics D: Applied Physics
Journal of Research of the National Institute of Standards and Technology
Metrologia
Nature
Optics Letters
Physical Review A
Physical Review Letters
Physics Letters A
Revisita Fisica Mexicana
Reviews of Modern Physics
Science

Reviewer for research proposals:

Advanced Technology Program, National Institute of Standards and Technology
U. S. Office of Naval Research
U. S. Army Research Office
U. S. Air Force Office of Scientific Research
Defense Advanced Research Projects Agency
U. S. Department of Energy
U. S. National Science Foundation
U. S. Department of Commerce
U. S. Civilian Research and Development Foundation
Australian Research Council
Agency for Science, Technology and Research, Singapore
Royal Society of London
Natural Sciences and Engineering Research Council of Canada

Networks of Centres of Excellence, Industry Canada
Canada Council for the Arts
Ontario Research Fund
Irish Science and Technology Agency
Israel National Science Foundation
U.K. Engineering and Physical Sciences Research Council
Marsden Fund (New Zealand)

External referee for appointment, promotion, and tenure decisions and awards:

Amherst College
Australian Academy of Sciences
Australian National University
Chateaubriand Fellowship Program, Embassy of France to the United States
Georgia Institute of Technology
Georgia Southern University
Harvard University
MacArthur Foundation
Merton College, Oxford University
National University of Singapore
Oxford University
Princeton University
Queen's University of Belfast
Royal Society of London
University of Connecticut
University of Illinois at Urbana-Champaign
University of Kentucky
University of Maryland
University of Oklahoma
University of Otago (New Zealand)
University of Southern California
University of Stuttgart
University of Toledo
Yarmouk University (Jordan)

Membership in professional societies:

American Association for the Advancement of Science (Fellow)
American Physical Society (Life Member and Fellow)
Optical Society of America (Fellow)
Institute of Physics (Fellow)
Washington Academy of Sciences (Fellow)
National Capital Section, Optical Society of America
Senior Executives Association

Invited talks since 1985:

- “Chemical and spectroscopic consequences of the lanthanide contraction,” Physics Department, Univ. of Illinois at Urbana-Champaign, Urbana, IL, 2/5/1985.
- “Multiphoton excitation of autoionizing states,” Physics Division, Argonne National Laboratory, Argonne, IL, 2/7/1985.
- “Highly-excited atoms in electric and magnetic fields,” Theoretical and Statistical Physics Group, Los Alamos National Laboratory, Los Alamos, NM, 6/4/1985.
- “Autodetaching and core-excited states of negative ions,” Gordon Conference on Atomic Physics, Wolfeboro, NH, 7/4/1985.
- “Excited atoms in electric and magnetic fields,” Chemical Physics Seminar, University of Maryland, College Park, MD, 10/2/1985.
- “Autodetaching states of negative ions,” First International Conference on Laser Science, Dallas, TX, 11/18/1985.
- “Rydberg states in electric and magnetic fields,” Physics Colloquium, University of Delaware, Newark, DE, 12/4/1985.
- “Highly-excited atoms in electric and magnetic fields,” Australian National University, Research School of Physical Sciences, Canberra, Australia, 1/23/1986.
- “Autodetaching states of negative ions,” Fourth Australian Conference on Atomic and Molecular Physics and Quantum Chemistry, University of Tasmania, Hobart, Tasmania, Australia, 1/29/1986.
- “Multiphoton excitation of autoionizing states,” Workshop on Multiphoton Ionization of Atoms by Strong Fields, University of Paris, Orsay, France, 4/29/1986.
- “Doubly-excited states of negative ions and atoms,” Mathematics Colloquium, Royal Holloway and Bedford New College, University of London, Surrey, England, 6/13/1986.
- “Giant resonances in the transition regions of the periodic table,” NATO Advanced Study Institute on Giant Resonances in Atoms, Molecules, and Solids, Les Houches, France, 6/18/1986
- “Doubly-excited states of atoms and negative ions,” Atomic Physics Seminar, University of Virginia, Charlottesville, VA, 11/12/1986
- “Doubly-excited states of negative ions,” Physics Colloquium, College of William and Mary, Williamsburg, VA, 2/13/1987
- “Atomic negative ion resonances,” International Conference on the Physics of Electronic and Atomic Collisions, Brighton, England, 7/31/1987
- “Theory of highly-excited atoms in electric and magnetic fields,” Symposium on Atomic Spectroscopy and Highly-Ionized Atoms, Hickory Ridge Conference Center, Lisle, IL, 8/17/1987
- “How many of the alkaline earths have stable negative ions?” Quantum Electronics Seminar, State University of New York, Stony Brook, NY, 10/30/1987
- “How many of the alkaline earths have stable negative ions?” Theoretical Chemistry Seminar, National Hellenic Research Foundation, Athens, Greece, 1/15/1988
- “Computation of high-order perturbation theory for atoms in radiation fields,” International Colloquium on Atoms in Strong Fields, Grainau, West Germany, 9/7/1988
- “Computational studies of atoms in strong fields,” International Laser Science Conference, Atlanta, GA, 10/3/1988
- “Weak-field limits and asymptotic behavior,” NATO Advanced Study Institute on Atoms in Strong Fields, Kos, Greece, 10/10/1988

- “Atomic physics in the solid state: Giant resonances, excitons, and high-temperature superconductivity,” Physics Department Colloquium, University of Maryland at Baltimore County, Catonsville, MD, 11/9/1988
- “Highly-excited atoms,” Twentieth Anniversary Reunion of Sigma Pi Sigma, Montgomery College, Takoma Park, MD 12/2/1988
- “Giant resonances in electron and photon excitation of atoms,” NIST Staff Research Seminar Series, Gaithersburg, MD, 2/2/1989
- “High harmonic generation in hydrogenic ions,” X-Ray Laser Group Seminar, Princeton Plasma Physics Laboratory, Princeton, NJ, 3/2/1989
- “High harmonic generation in hydrogenic ions: comparison of perturbative and non-perturbative calculations,” Conference on Super-Intense Laser-Atom Physics, University of Rochester, Rochester, NY, 6/29/1989
- “Ditriakontapole excitation in high-temperature superconductors,” NIST Surface Science Lunch Bunch, Gaithersburg, MD, 9/11/1989
- “Photoabsorption and electron energy loss spectroscopy of $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$,” Fifth NIST Superconductivity Information Exchange Meeting, Boulder, CO, 9/21/1989
- “Progress towards the production of intense coherent radiation in the soft x-ray region,” International Conference on Lasers in Science and Technology, University of Jordan, Amman, Jordan, 10/14/1989
- “Progress towards the production of intense coherent radiation in the soft x-ray region,” Winter College on High-Resolution Spectroscopy, International Center for Theoretical Physics, Trieste, Italy: two two-hour lectures, 1/22-23/1990
- “Atomic physics in the solid state: Giant resonances, excitons, and high-temperature superconductivity,” Physics Department Colloquium, University of Connecticut, Storrs, CT, 2/16/1990
- “High-order perturbation theory of atoms in strong radiation fields,” First International Conference on Coherent Radiation Processes in Strong Fields, Catholic University of America, Washington, DC, 6/19/1990
- “Order and chaos in the spectra of highly-excited atoms,” Physics Seminar, Towson State University, Towson, MD, 12/4/1990
- “Lanthanum $N_{IV,V} \rightarrow O_{II,III}$ x-ray emission spectra and f-occupancy-induced multiplet structure,” Sixth NIST Superconductivity Information Exchange Meeting, Gaithersburg, MD, 3/27/1991
- “Atoms in strong fields,” 2nd National Conference on Atomic, Molecular, and Optical Physics, Royal Holloway and Bedford New College, Egham, England, 4/11/1991
- “Experience with massively parallel processing on the Connection Machine,” Satellite Meeting on Multiphoton Absorption, Royal Holloway and Bedford New College, Egham, England, 4/12/1991
- “Negative-ion resonances and surface dynamics,” Seminar, Cavendish Laboratory, Cambridge University, England, 4/18/1991
- “Atoms in strong radiation fields,” Physics Colloquium, University of Delaware, Newark, DE, 5/24/1991
- “Structure and Spectroscopy of Atoms,” Summer School on Atomic and Molecular Physics and Quantum Optics, Department of Theoretical Physics, Australian National University, Canberra, Australia, six one-hour lectures, 1/1992

- “Strong-field laser-atom interaction: applications of massively parallel processing,” Annual Meeting, Collaborative Computational Project 2 - Continuum States of Atoms and Molecules, University College London, London, England 4/3/1992
- “Order and chaos in the spectra of highly-excited atoms, or Big as a Bug !” Society of Physics Students, Northern Virginia Community College, Annandale, VA, 4/16/1992
- “Sequential vs. simultaneous ionization of two-electron atoms by strong laser fields,” NATO Advanced Research Workshop on Super-Intense Laser-Atom Physics, Han-sur-Lesse, Belgium, 1/13/1993
- “Highly nonlinear effects in atoms in strong laser fields,” Physics Department Colloquium, Temple University, Philadelphia, PA, 2/15/1993
- “Harmonic generation with circularly polarized light,” Strong-Field Workshop, Center for Ultrafast Optical Science, University of Michigan, Ann Arbor, MI, 7/11/1993
- “Solution of the time-dependent Schrödinger equation,” International Conference on Quantum Optics III, Szczyrk, Poland, 9/6/1993
- “Laser-atom interaction at high intensities,” Chemical Physics Seminar, University of Maryland, College Park, MD, 4/13/1994
- “High-harmonic generation by atoms in strong laser fields,” Theory Seminar, Institut für Festkörperforschung, Forschungszentrum Jülich, Jülich, Germany, 5/6/1994
- “Computational physics at NIST,” April Meeting of the American Physical Society, Washington, DC, 4/19/1995
- “Appearance intensities for multiply charged ions in a strong laser field,” Workshop on Multiparticle Atomic Systems in Intense Laser Fields, Institute for Theoretical Atomic, Molecular, and Optical Physics, Cambridge, MA, 10/21/1995
- “Spectroscopy of Bose-Einstein condensates,” Physics Colloquium, University of Delaware, Newark, DE, 11/8/1995
- “New angle on the Coulomb problem,” Atomic and Molecular Theory Seminar, JILA, University of Colorado, Boulder, CO, 12/4/1995
- “Metrology on the internet,” 25th Measurement Science Conference, Anaheim, CA 1/26/1996
- “Structure and spectra of dilute atomic Bose-Einstein condensates,” Complex Systems Theory Branch Seminar, Naval Research Laboratory, Washington, DC, 4/10/1996
- “Standard reference data for electronic structure calculations,” Complex Systems Theory Branch Seminar, Naval Research Laboratory, Washington, DC, 4/10/1996
- “Excitation and engineering of atomic Bose-Einstein condensates,” 1996 Annual Congress, Canadian Association of Physicists, Ottawa, Ontario, Canada, 6/18/1996
- “Theory of Bose-Einstein condensation,” European Research Conference on Quantum Optics, Castelvechio Pascoli, Italy, 9/26/1996
- “Structure and spectra of atomic Bose-Einstein condensates,” Physics Department Colloquium, Toledo University, Toledo, OH, 11/14/1996
- “Structure and spectra of atomic Bose-Einstein condensates,” Physics Colloquium, Tulane University, New Orleans, LA, 11/25/1996
- “Structure and spectra of atomic Bose-Einstein condensates,” Joint Atomic Physics Colloquium, Harvard University, Cambridge, MA, 12/4/1996
- “Finite-temperature and time-dependent phenomena in dilute Bose-Einstein condensates,” Atom Laser Workshop, University of Arizona, Tucson, AZ, 1/23/1997
- “Structure and spectra of atomic Bose-Einstein condensates,” Center for Research and Education in Optics and Lasers, University of Central Florida, Orlando, FL, 2/12/1997

- “Structure and spectra of atomic Bose-Einstein condensates,” Rochester Theory Center for Optical Science and Engineering, University of Rochester, Rochester, NY, 2/25/1997
- “Closed-form solutions of the Schrödinger equation for a class of smoothed Coulomb potentials,” Rochester Theory Center for Optical Science and Engineering, University of Rochester, Rochester, NY, 2/26/1997
- “Atomic, molecular, and optical physics from an American perspective,” Review Day for Atomic, Molecular, and Optical Physics, Engineering and Physical Sciences Research Council, London, England, 3/11/1997
- “Structure and spectra of atomic Bose-Einstein condensates,” Queen's University of Belfast, Belfast, Northern Ireland, 5/6/1997
- “Structure and spectra of atomic Bose-Einstein condensates,” Dublin City University, Dublin, Ireland, 5/9/1997
- “Structure and spectra of atomic Bose-Einstein condensates,” University of Manchester, Manchester, England, 5/12/1997
- “Structure and spectra of atomic Bose-Einstein condensates,” University of Birmingham, Birmingham, England, 5/15/1997
- “Structure and spectra of atomic Bose-Einstein condensates,” Royal Holloway, University of London, Egham, England, 5/16/1997
- “Structure and spectra of atomic Bose-Einstein condensates,” Quantum Electronics and Laser Science Conference (QELS '97), Baltimore, MD, 5/20/1997
- “The NIST Digital Mathematical Library,” NIST Center for Theoretical and Computational Materials Science Seminar, Gaithersburg, MD, 6/10/1997
- “Structure and spectra of atomic Bose-Einstein condensates,” Quantum Optics IV, Jaszowiec, Poland, 6/19/1997
- “Structure and Spectra of Trapped-Atom Bose-Einstein Condensates,” Statistical Physics Seminar, University of Maryland, College Park, MD, 9/16/1997
- “Collective Excitations and Coherence of Bose-Einstein Condensates,” University of Maryland Optical Interactions Seminar, College Park, MD, 10/ 2/1997
- “Collective Excitations and Coherence of Bose-Einstein Condensates,” Western Washington University Physics Department Colloquium, Bellingham, WA, 10/22/1997
- “Collective Excitations and Coherence of Bose-Einstein Condensates,” Pennsylvania State University Physics Department Condensed, Atomic and Molecular Physics (CAMP) Seminar, State College, PA, 11/10/1997
- “Structure and Spectra of Bose-Einstein Condensates,” Atomic Physics Seminar, University of Southern California, Los Angeles, CA, 3/19/1998
- “Bose-Einstein Condensation, the Atom Laser, and Nanokelvin Thermometry,” Distinguished LMS Lectureship, Laboratory for Molecular Sciences, California Institute of Technology, Pasadena, CA, 3/20/1998
- “Modern BEC from the AMO Perspective,” Gordon Conference on Multiphoton Processes, Tilton, NH, 6/18/1998
- “Coherence Properties of Atom Lasers at Finite Temperature,” 7th International Workshop on Laser Physics, Berlin, Germany, 7/7/1998
- “Structure and Spectra of Bose-Einstein Condensates,” Supercomputing, Collision Processes and Applications, Queen's University of Belfast, Northern Ireland, 9/14/1998
- “Structure and Spectra of Bose-Einstein Condensates,” Department of Physics and Astronomy Colloquium, University of Nebraska, Lincoln, NE, 10/22/1998

- “Structure and Spectra of Bose-Einstein Condensates,” Atomic Physics Seminar, University of Virginia, Charlottesville, VA, 11/23/1998
- “Generating Solitons and Vortices in BECs by Trap Rotation and Optical Imprinting,” Workshop on Bose-Einstein Condensation and Degenerate Fermi Gases, Boulder, CO, 2/12/1999
- “The Designer Supergas,” Physics Department Colloquium, State University at Stony Brook, Stony Brook, NY, 3/16/1999
- “The Designer Supergas,” Laser Spectroscopy Seminar, Imperial College, London, England, 5/7/1999
- “The Designer Supergas,” Atomic and Laser Seminar, Clarendon Laboratory, Oxford University, Oxford, England, 5/10/1999
- “The Designer Supergas,” John Anderson Research Colloquium, University of Strathclyde, Glasgow, Scotland, 5/24/1999
- “The Designer Supergas,” Physics Colloquium, University of Bristol, Bristol, England, 6/14/1999
- “Vortices and solitons in trapped Bose gases,” Tenth International Conference on Recent Progress in Many-Body Theories, Seattle, Washington, 9/14/1999
- “Multiboson processes: coherent matter-wave analogues of multiphoton physics,” Eighth International Conference on Multiphoton Processes, Monterey, California, 10/6/1999
- “Bose-Einstein condensation and the atom laser,” Society of Physics Students, Morgan State University, Baltimore, MD, 11/3/1999
- “Physics of degenerate quantum gases,” Foundations and Frontiers of Physics, University of Maryland, College Park, MD, 11/15/1999
- “New challenges in deep ultraviolet metrology,” 2000 Measurement Science Conference, Anaheim, California, 1/21/2000
- “Dynamics of vortex formation in rotating Bose-Einstein condensates,” Workshop on Rotating Bose-Einstein Condensates, European Centre for Theoretical Studies in Nuclear Physics, Trento, Italy, 6/11/2000
- “Theory and experiment in Bose-Einstein condensation,” Symposium on Quantum Control of Atoms and Fields, University of Rochester, Rochester, NY, 10/20/2000
- “Soliton and vortex excitations of Bose-Einstein condensates,” March Meeting of the American Physical Society, Seattle, WA, 3/12/2001
- “Superfluid and laser analogies in quantum gases,” 2001 Quantum Electronics and Laser Science Conference, Baltimore, MD, 5/10/2001
- “Soliton and vortex excitations of Bose-Einstein condensates,” Quantum Optics V, Koscielisko, Poland, 6/25/2001
- “Collective and single-particle excitations of Bose-Einstein condensates,” MIT/Harvard Center for Ultracold Atoms, Cambridge, MA, 11/20/2001
- “Generation and application of coherent matter waves,” NIST/UMCP AMO Day, College Park, MD, 2/12/2002
- “Superfluid and laser analogies in cold quantum gases,” Physics Colloquium, Temple University, Philadelphia, PA, 3/25/2002
- “Solitons and vortices in Bose-Einstein condensates,” Physics Colloquium, Georgia Institute of Technology, Atlanta, GA, 4/3/2002
- “Over the rainbow,” Department of Physics and University Honors Program Distinguished Lecture Series, Georgia Southern University, Statesboro, GA, 4/5/2002
- “Solitons and vortices in Bose-Einstein condensates,” Quantum Coherence and Information Seminar, University of Maryland at College Park, 4/25/2002

- “Over the rainbow: 200 years of infrared and ultraviolet radiation,” 8th International Conference on New Developments and Applications in Optical Radiometry (NEWRAD 2002), Gaithersburg, MD, 5/20/2002
- “Superfluid and Laser Analogies in Degenerate Quantum Gases,” Resonances and Reflections: Profiles of Ugo Fano's Physics and Its Influences, Harvard-Smithsonian Institute for Theoretical Atomic and Molecular Physics, Cambridge, MA, 6/25/2002
- “Superfluid and laser analogies in cold quantum gases,” Physics Colloquium, University of Delaware, Newark, DE, 10/30/2002
- “Superfluid and laser analogies in cold quantum gases,” National Capital Section of the Optical Society of America, Wheaton, MD, 1/21/2003
- “Introduction to Bose-Einstein condensation,” Tutorial Program on New Directions in Dilute Gas Bose-Einstein Condensation, March Meeting of the American Physical Society, Austin, TX, 3/2/2003
- “Open issues in neutral atoms confined in optical lattices,” Workshop on Theory in Quantum Computing (ThInQC), Harpers Ferry, WV, 6/10/03
- “Laser-like matter waves,” Huntsville Electro-Optical Society, Huntsville, AL 6/19/2003
- “Exciting science and engineering jobs in public service,” Presidential Classroom: The Science, Technology and Public Policy Program, Washington, DC, 6/24/03
- “Optimal control of Bose-Einstein condensates and degenerate Fermi gases in harmonic traps,” Symposium on Quantum Challenges, Warsaw, Poland, 9/4/03
- “Coherent control of Bose-Einstein condensates,” Atomic and Laser Physics Seminar, Clarendon Laboratory, Oxford University, Oxford, England, 10/3/03
- “Laser-like Matter Waves,” Electronic and Computer Engineering Seminar, Johns Hopkins University, Baltimore, MD, 12/4/2003
- “Superfluid and laser analogies with coherent matter waves,” Laboratory for Computer Design of Materials Seminar, George Mason University, Fairfax, VA 2/23/2004
- “Generation and application of coherent matter waves,” Division Directors’ Brown Bag Lunch, Office of Naval Research, Arlington, VA, 4/20/2004
- “Quantum information and quantum computing,” XV Undergraduate Research Symposium, Universidad Metropolitana, San Juan, Puerto Rico, 10/1/2004
- “Superfluid and laser analogies with coherent matter waves,” Informal Statistical Physics Seminar, University of Maryland, College Park, MD 11/23/2004
- “Method and madness in quantum gases,” International Seminar on Atomic Processes, Shonan Village, Japan, 1/20/2005
- “Method and madness in quantum gases,” University of Electro-Communications, Tokyo, Japan, 1/25/2005
- “Method and madness in quantum gases,” Tokyo University of Science, Tokyo, Japan, 1/26/2005
- “Method and madness in quantum gases,” National University of Singapore, Singapore, 2/2/2005
- “Practical atomic spectroscopy,” Physics 4243 - Atomic and Molecular Physics II, National University of Singapore, Singapore, 2/4/2005
- “Generation and application of coherent matter waves,” Annual Meeting of the American Association for the Advancement of Science, Washington, DC, 2/20/2005
- “Ugo Fano, Enrico Fermi, and Spectral Line Shapes,” AMO Physics Seminar, Kansas State University, Manhattan, KS, 5/2/2005
- “Method and madness in quantum gases,” Physics Colloquium, Kansas State University, Manhattan, KS, 5/2/2005

- “Telling time with atoms on land, sea, and in the air,” Physics Colloquium, Georgia Southern University, 3/9/2006
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- “Prospects for commercial quantum technologies and their impact on society,” Workshop on Industry in the Quantum Age, The Royal Society, London, England, 4/24/ 2006 (presentation given by videoconference)
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