# 2007 PMFC Election Candidates

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**Chair Elect** (go)

- David Demille (Yale)
- John M. Doyle (Harvard)

**Secretary Treasurer** (go)

- David Kawall (U Mass Amherst)
- Paul Vetter (LBL)

**Vice Chair** (go)

- John Gillaspy (NIST)
- John Price (CU Boulder)

**Executive Committee** (go)

- Susan Gardner (UKY)
- Thomas Killian (Rice)
- Mike Romalis (Princeton)
- Marianna Safronova (U Del)

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## *Chair Elect*

David Demille

**Positions and Education:**
Professor of Physics, Yale University, 2004-present;
Associate Prof., Yale Univ., 2002-04;
Asst. Prof., Yale Univ., 1998-2002;
Asst. Prof., Amherst College, 1997-8;
Postdoctoral Researcher, Lawrence Berkeley National Lab, 1994-97;
Ph.D., Univ. of California, Berkeley, 1994;
A.B., Univ. of Chicago, 1985.

**Main Research Interests:**
Violations of discrete symmetries in molecular and atomic systems, including: search for an electron electric dipole moment; measurement of parity-violating effects; theoretical calculations of symmetry violating effects in atoms and molecules; search for small time variations in fundamental constants; and search for small violations of the spin-statistics connection. Development of methods for production and trapping of ultracold polar molecules. Development of new architectures for quantum computation, based on polar molecules as qubits. Associated spectroscopic measurements in molecules and atoms.

**Other Activities/Awards:**
Francis M. Pipkin Award, APS/GPMFC, 2006;
APS Fellow (DAMOP), 2005; Packard Fellowship, 1999;
Condé Award for Teaching Excellence, 2004;
Sloan Fellowship, 2000;
Research Corporation Cottrell Scholars Award, 2000;
Res. Corp. Research Innovation Award, 1998;
Res. Corp. Cottrell College Science Award, 1997;
NIST Precision Measurement Grant

John M. Doyle

**Positions and Education:**
Harvard University Professor of Physics, 1999-present;
Harvard John L. Loeb Associate Professor of the Natural Sciences, 1997-1999;
Harvard Assistant Professor of Physics, 1993-1997;
Massachusetts Institute of Technology Postdoctoral Associate, 1991-1993;
Ph.D., MIT, 1991;
AT&T Bell Laboratories Murray Hill Research Assistant 1988;
B.S.E.E., MIT, 1985.

**Main Research Interests:**
Cold and ultracold atoms, molecules and neutrons; precision measurement of the neutron beta-decay lifetime using magnetically trapped neutrons; quantum information applications of isolated molecules; new sources of ultracold neutrons, molecules and atoms; collisional properties of ultracold molecules and exotic atoms; evaporative cooling and quantum degeneracy in new species.

**Other Activities/Awards:**
Co-Director of Harvard/MIT Center for Ultracold Atoms (2000-);
APS Fellow (2002);
APS POPA member (1999-2002);
APS Public Face of Physics Member (1999);
co-chair, panel/program committee member of several workshops including US-Japan Seminar (2003); Ultracold Polar Molecules (2003);
PANIC (2005);
Neutron Coherence and Confinement (2003);
Quantum Computing with Polar Molecules (2005)

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## *Vice Chair*

John Gillaspy

**Positions and Education:**
NIST, Atomic Physics Division, 1988-present;
Harvard University, Physics Department, Ph.D., 1988;
Stanford University, Physics Department, B.S., 1982;
Hewlett-Packard Research Labs, 1981;
Stanford Linear Accelerator Center, 1980.

**Main Research Interests:**
Precision laser spectroscopy of atoms and ions; trapped highly charged ions; tests of QED in few-electron atoms and ions; interdisciplinary research combining atomic physics with fields such as microlithography, nanotechnology, x-ray astronomy, and biomedicine; tests of fundamental symmetries and the symmetrization postulate of quantum mechanics; cold atom collisions and Bose-Einstein condensation.

**Other Activities/Awards:**
Fellow of the APS (DAMOP) 2004;
Distinguished Visiting Fellow, Queens University Belfast, 2001-2004;
Bronze Medal Award (U.S. Department of Commerce) 1999;
Young Scientist Award (Sigma Xi, worldwide) 1998;
Young Investigator Award (Sigma Xi, NIST Chapter) 1997;
Competence Award (NIST Director) 1994;
Interagency Task Force on High Energy Density Physics, 2003-2007;
Chair, 15th International Conference on Atomic Processes in Plasmas, 2004-2007;
Chair, International SEMATECH Fundamental Data Working Group 2002-2004;
Co-Chair, 1st International EUV Source Modeling Workshop, 2003;
Member APS (DAMOP, DLS, GPMFC, FIAP, FEd), Sigma Xi, AAAS<

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John Price

**Positions and Education:**
Professor, U. of Colorado, Boulder, 2001-present;
Assoc. Prof., U. of Colorado, Boulder 1995-2001;
Assist. Prof., U. of Colorado, Boulder 1989-1995;
Research Associate, Stanford Linear Accelerator Center, 1986-1989;
Ph. D. in Physics, Stanford 1985;
B.S. in Physics, magna cum laude, Yale, 1980

**Main Research Interests:**
table-top particle physics: searches for new forces, charge neutrality of neutral atoms, inverse square law violations; condensed matter physics: molecular crystals, molecular rotors, organic ferroelectrics, quantum transport phenomena in metals; musical acoustics

**Other Activities/Awards:**
Fellow of the APS, 2004;
U. of Colorado Faculty Fellowship, 1996;
NSF Presidential Young Investigator, 1990;
Fellow of the David and Lucile Packard Foundation, 1990;
ONR Naval Young Investigator, 1990;
Sloan Fellowship, 1991;
primary advisor for 9 Ph.D. students and 26 undergraduate researchers since 1989;
Director, CU Engineering Physics Program, 2004-present;
Director, CU Interdisciplinary Center for Electronics, 1997-present;
Organizing Committee, National Academy of Sciences Frontiers of Science, 1993-1995;
Chair, George Gamow Memorial Lecture Series, 2003-present;
Nominating Committee APS GPMFC, 2000-2002

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## *Secretary Treasurer*

David Kawall

**Positions and Education:**
Assistant Professor, University of Massachusetts at Amherst (2005-Present);
RIKEN Fellow, Brookhaven National Laboratory (2004-Present);
Associate Research Scientist, Yale University (1995-2004);
Ph.D.,Stanford (1996)

**Main Research Interests:**
Tests of fundamental symmetries (time reversal, CPT); precision measurements of atomic and molecular structure; precision measurements of fundamental constants

**Other Activities/Awards:**
Member of APS (DAMOP, DNP), RIKEN Fellow (2004-Present)

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Paul Vetter

**Positions and Education:**
Physicist/Staff Scientist, Nuclear Science Division, Lawrence Berkeley National Laboratory (1998-Present);
Visiting Postdoctoral Fellow, Nuclear Science Division, LBNL (1995-1998);
Ph.D., University of Washington, Seattle (1995).

**Main Research Interests:**
Experimental tests of the Standard Model at low energies: nuclear beta decay, atomic parity violation. Precise, low-energy measurements of stellar nuclear fusion reaction cross sections. Precise measurements of beta decay correlations to test the Electroweak sector. High precision measurements on superallowed beta decay to test unitarity of the CKM matrix. Tests of QED and discrete symmetries in positronium. Precise spectroscopy of radioactive atoms. Intersection of atomic and nuclear experimental techniques.

**Other Activities/Awards:**
APS DAMOP Thesis Prize, 1997;
Member, APS DAMOP, APS DNP, APS TG/PMFC; LBNL
Outstanding Performance Award, February 2000.

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## *Executive Committee*

Susan Gardner

**Positions and Education:**
Associate Professor of Physics, University of Kentucky (2001-present);
Assistant Professor of Physics, University of Kentucky (1995-2001);
Research associate, Indiana University (1992-5);
Jefferson Lab (1990-2);
Universitaet Heidelberg (1988-90);
Ph.D., MIT, 1988;

M.A., Columbia University, 1983;
B.S., Caltech, 1982.

**Main Research Interests:**
Theoretical study of neutron (and other hadron) decays and properties, with a focus on CP, P, and T-violating observables, to identify departures of precision, low-energy measurements from the predictions of the Standard Model of particle physics.

**Other Activities/Awards:**
Kavli Institute of Theoretical Physics Scholar (2006-8);
AAUW Educational Foundation Fellowship in Physical Science (1990-1);
Co-Organizer, Fundamental Neutron Physics program at the Institute for Nuclear Theory, University of Washington, Seattle, Spring, 2007;
Member of the APS (DNP, DPF, GPMFC, GHP, DAMOP)

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Thomas Killian

**Positions and Education:**
Associate Professor (2006-present) and Assistant Professor (2001-2006) of Physics and Astronomy, William Marsh Rice University;
Postdoctoral Fellow, National Institute of Standards and Technology, 1999-2000;
PhD (Atomic Physics), Massachusetts Institute of Technology, 1999.

**Main Research Interests:**
Ultracold plasmas, cold collisions, quantum degenerate gases, high resolution spectroscopy, fundamental measurements, and atom-photon interactions.

**Other Activities/Awards:**
Member of APS (DAMOP, TG/PMFC);
DAMOP Executive Committee Member at Large;
David and Lucille Packard Foundation Science and Engineering Fellowship, 2002.

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Mike Romalis

**Positions and Education:**
Associate Professor, Princeton University (2006-present);
Assistant Professor, Princeton University (2002-2006);
Assistant Professor, University of Washington (1999-2001);
Postdoctoral Fellow, University of Washington (1997-1999);
Ph.D. Princeton University (1997).

**Main Research Interests:**
Tests of fundamental symmetries at low energies and development of sensitive measurement techniques: high sensitivity atomic magnetometers, atomic co-magnetometers for tests of Lorentz invariance and

inertial rotation sensing, high-density spin-polarized systems and their use for EDM searches, new techniques for detection of nuclear magnetic resonance, detection of biological magnetic fields.

**Other Activities/Awards:**
Member APS (DAMOP,TG/PMFC,DNP), served on review panels for NSF, NIST, NIH, NAS; Packard Fellow, DOE Young Investigator.

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Marianna Safronova

**Positions and Education:**
Assistant Professor, University of Delaware (2003-present);
Guest researcher, NIST, Gaithersburg (2001-2003);
Postdoctoral research associate, University of Notre Dame (2001-2003);
Ph.D. , University of Notre Dame, 2001.

**Main Research Interests:**
parity nonconservation in heavy atoms; development of high-precision methodologies for atomic calculations; high-precision relativistic calculations of energy levels, transition matrix elements, lifetimes, hyperfine constants, isotope shifts, dispersion coefficients, and polarizabilities; quantum computation with neutral atoms.