

## SUMMARY OF NIST PRECISION MEASUREMENT GRANTS

Recipient	Title of Grant	Dates
<b>James E. Faller</b> Wesleyan University	Precision measurement gravitational physics	1971-1973
<b>Daniel Kleppner</b> M.I.T.	Precision studies with the hydrogen maser	
<b>Hugh G. Robinson</b> Duke University	Precision determination of the ratio of atomic magnetic moments	
.....		
<b>E. Norval Fortson</b> University of Washington	Precision radio frequency spectroscopy with atomic ions by the ion storage exchange collision method	1972-1974
<b>William H. Parker</b> Univ. Calif., Irvine	Determination of $h/m$ using macroscopic phase coherence in superconductors	
<b>Arthur Rich</b> University of Michigan	Precision measurement of ion cyclotron resonance	
.....		
<b>Stuart B. Crampton</b> Williams College	Investigations of hydrogen atom interactions using atomic hydrogen masers	1973-1975
<b>Brij M. Khorana</b> University of Notre Dame	Quantum properties of liquid helium	
<b>Hans A. Schuessler</b> Texas A&M University	Precision measurement of the hyperfine structure of stored heavy ions	
.....		
<b>Theodor W. Hänsch</b> Stanford University	Precision laser spectroscopy of one-electron atoms	1974-1976
<b>Harold J. Metcalf</b> SUNY, Stony Brook	Time resolved excited state spectroscopy	
<b>Richard T. Robiscoe</b> Montana State University	Measurement of the Lamb shift in H, $n = 2$ , by the Ramsey method	
.....		
<b>James E. Bayfield</b> Yale University	Precision measurement of the fine structure constant and Lamb shifts using new fast excited one-electron ion production and detection techniques	1975-1977
<b>Henry A. Hill</b> University of Arizona	Precision solar measurements	
<b>William H. Wing</b> University of Arizona	Accurate measurement of vibration-rotational structure in molecular ions using a novel ion beam infrared laser resonance technique	
.....		
<b>Douglas G. Currie</b> University of Maryland	Extremely high spatial resolution measurements through turbulent atmosphere	1976-1978
<b>John M. Goodkind</b> Univ. Calif., San Diego	Precise measurements of variations in local gravity	
<b>Daniel Larson</b> Harvard University	Investigation of new magnetic effects in atoms and atomic nuclei	
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<b>William M. Fairbank, Jr.</b> and <b>George J. Collins</b> Colorado State University	Precision Doppler-free spectroscopy on helium: Lamb shift measurements and possible Rydberg constant determination on a two-electron atom	1978-1980
<b>Robert S. Van Dyck, Jr.</b> University of Washington	Mono-ion studies	
.....		
<b>C. W. Francis Everitt</b> and <b>Blas Cabrera</b> Stanford University	Studies of the London moment leading to a precise determination of $h/m_e$	1979-1981
<b>Rogers C. Ritter</b> University of Virginia	Precise mechanical rotations for fundamental measurements	
.....		
<b>William C. Sauder</b> Virginia Military Institute	Precision determination of the gas constant: first applications of the ultrasonic Michelson interferometer	1980-1982
<b>Carl E. Wieman</b> University of Michigan	Measurement of fundamental constants using three-level resonances in hydrogen	
.....		
<b>William C. Oelfke</b> Univ. of Central Florida	Quantum limited measurement of a harmonic oscillator	1981-1983
<b>William H. Wing</b> University of Arizona	Electronic trapping of neutral particles	
.....		
<b>David F. Bartlett</b> University of Colorado	Eötvös experiment—a cryogenic version	1982-1984
<b>David A. Church</b> Texas A&M University	Low energy, highly charged ion precision spectroscopy	
<b>Charles E. Johnson</b> North Carolina State Univ.	RF spectroscopy of atomic and molecular ions	
<b>Michael G. Littman</b> Princeton University	Fine-structure constant determination using precision Stark spectroscopy	
.....		
<b>Robert W. Dunford</b> Princeton University	Lamb-shift in singly ionized helium	1983-1985
<b>Daniel C. Tsui</b> Princeton University	The quantized Hall resistance as a primary resistance standard	
.....		
<b>Carlton M. Caves</b> Calif. Inst. of Technol.	Quantum-mechanical analysis of high-precision measurements on harmonic oscillators	1984-1986
<b>Walter N. Hardy</b> and <b>A. John Berlinsky</b> Univ. of British Columbia	Development of a cryogenic hydrogen maser	
.....		
<b>Timothy E. Chupp</b> Harvard University	A test of local Lorentz invariance using polarized $^{21}\text{Ne}$ nuclei	1985-1987
<b>Michael J. Levine</b> Carnegie-Mellon Univ.	Precision calculation of the anomalous magnetic moment of the electron using a specialized computational engine	
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<b>Gerald Gabrielse</b> University of Washington	Injection of protons, antiprotons, and heavy ions into a Penning trap for precision mass measurements	1986-1988
<b>Larry R. Hunter</b> Amherst College	A new method to search for an electric dipole moment of the electron	
.....		
<b>Frederick R. Raab</b> University of Washington	Atomic physics tests of gravity and the equivalence principle	1987-1989
<b>Daniel R. Stinebring</b> Princeton University	High precision timing of millisecond pulsars	
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<b>Wiley P. Kirk</b> Texas A&M University	Quantized Hall resistance and fine-structure constant investigations: a study of uncertainty contributions	1988-1990
<b>John D. Morgan III</b> University of Delaware	High precision calculation of helium atom energy levels	
.....		
<b>Edward A. Hinds and Malcolm G. Boshier</b> Yale University	Two-photon spectroscopy of H and He <sup>+</sup>	1989-1991
<b>Randall G. Hulet</b> Rice University	Measurement of the recombination rate of spin-polarized ultra-cold atoms	
.....		
<b>Steven Chu</b> Stanford University	Precision optical spectroscopy of positronium	1990-1992
<b>Edward E. Eyler</b> University of Delaware	Far ultraviolet spectroscopy with single-frequency lasers	
.....		
<b>John E. Thomas</b> Duke University	Precision atomic position measurement using optical fields	1991-1993
<b>Ngai C. Wong</b> M.I.T.	Optical frequency division using an optical parametric oscillator: applications to precision measurements	
.....		
<b>Daniel J. Heinzen</b> University of Texas, Austin	Quantum-limited cooling and detection with stored ions	1992-1994
<b>Carol E. Tanner</b> University of Notre Dame	Absolute calibration of atomic parity nonconservation measurements	
.....		
<b>Alex de Lozanne and Qian Niu</b> University of Texas, Austin	Quantum charge pump for a current standard	1993-1995
<b>Thad G. Walker</b> Univ. of Wisconsin, Madison	Beta-asymmetry experiments using trapped atoms	
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<b>Mark Kasevich</b> Stanford University	Development of an atom interferometer gyroscope for tests of general relativity	1994-1996
<b>Ronald L. Walsworth</b> Smithsonian Astrophysical Observatory	Development of a dual noble gas maser for use in a test of time reversal invariance	
.....		
<b>Kurt Gibble</b> Yale University	Laser cooled atomic clocks "without" cold collisions	1995-1997
<b>Luis A. Orozco</b> State University of New York at Stony Brook	Spectroscopy of francium: towards a precise parity non-conservation measurement in a laser trap	
.....		
<b>Siu Au Lee</b> Colorado State University	Measurement of the magnetically-induced QED birefringence of the vacuum	1996-1998
<b>Jonathan Sapirstein</b> University of Notre Dame	Calculations of higher order QED effects in helium	
.....		
<b>Jens H. Gundlach</b> University of Washington	Measurement of Newton's constant $G$ using a new method	1997-1999
<b>David C. Shiner</b> University of North Texas	Laser spectroscopy of the helium atom for a determination of the fine-structure constant	
.....		
<b>David E. Pritchard</b> M.I.T.	Accurate atomic mass measurements	1998-2000
<b>Suzanne T. Staggs</b> Princeton University	Measurement of the polarization of the cosmic microwave background	
.....		
<b>Elisabeth G. Gwinn</b> University of California, Santa Barbara	Combining the quantum Hall and AC Josephson effects for electric current metrology	1999-2001
<b>Protik K. Majumder</b> Williams College	New search for T-violating forces in atomic thallium	
.....		
<b>David P. DeMille</b> Yale University	Search for the electron electric dipole moment in the a(1) state of PbO	2000-2002
<b>Michael V. Romalis</b> Princeton University	A test of CPT symmetry using a new K- <sup>3</sup> He self-compensating magnetometer	
.....		
<b>Umar Mohideen</b> University of California, Riverside	Precision measurement of the Casimir force using an atomic force microscope	2001-2003
<b>Robert Schoelkopf</b> Yale University	Development of an electron-counting ammeter	
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<b>Margaret Murnane</b> University of Colorado, Boulder	Extending ultrafast time-domain measurements to attosecond timescales using quantum control and phase stabilization techniques	2002-2005
<b>Harvey Gould</b> Lawrence Berkeley National Laboratory	Electron electric dipole moment experiment using a cold cesium atom fountain	
.....		
<b>Dmitry Budker</b> University of California, Berkeley	Precision test of variation of fine structure constant in radio-frequency E1 transitions	2003-2006
<b>Andrei Derevianko</b> University of Nevada at Reno	Next generation high-precision calculations of parity non-conservation in atoms	
.....		
<b>Edmund G. Myers</b> Florida State University, Tallahassee	Measurement of the tritium/helium-3 mass difference using two ions in a Penning trap	2005-2008
<b>David Weiss</b> Pennsylvania State University	Search for the electron edm using Cs and Rb in 1D optical lattice traps	
.....		
<b>J. C. Seamus Davis</b> Cornell University	Precision measurement of gravitational forces at the sub-micron length scale	2006-2009
<b>Krzysztof Szalewicz</b> University of Delaware	High-precision calculations of density and dielectric virial coefficients of helium for new pressure and temperature standards	
.....		
<b>Dallin S. Durfee</b> Brigham Young University	Testing Coulomb's law with cold-ion matterwave interferometry	2007-2010
<b>Krzysztof Pachucki</b> Warsaw University	High-precision calculations of transition frequencies in three-electron atoms versus nuclear structure	
.....		
<b>John Doyle</b> Harvard University	Precision search for an electric dipole moment of the electron using ThO	2008-2011
<b>Jason E. Stalnaker</b> Oberlin College	Precision spectroscopy of cold lithium atoms based on a femtosecond frequency comb	
.....		
<b>Ulrich Jentschura</b> Missouri University of Science and Technology	Nonperturbative quantum electrodynamics, numerical methods, and fundamental constants	2009-2012
<b>Holger Müller</b> University of California, Berkeley	Large area interferometers for fundamental precision measurements	
.....		
<b>Subhadeep Gupta</b> University of Washington, Seattle	Measurement of the fine structure constant and test of QED at the sub-ppb level	2010-2013
<b>Carol Tanner</b> University of Notre Dame	A portable optical atomic clock in neutral silver	
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<b>Alex Cronin</b> University of Arizona, Tucson	Atomic polarizability measurements for atomic clocks and parity non-conservation studies	2011-2014
<b>Eric A. Hessels</b> York University, Toronto, Ontario	Precise separated-oscillatory-field microwave measurements of the atomic helium $n = 2$ triplet P fine structure and of the atomic hydrogen $2S_{1/2}$ - $2P_{1/2}$ Lamb shift	
.....		
<b>Georg Raithel</b> University of Michigan, Ann Arbor	Measurement of the Rydberg constant in a magic-wavelength optical lattice	2012-2015
<b>Thomas Stace</b> University of Queensland, Brisbane, Queensland	Thermometry at the double shot-noise limit	
.....		
<b>Richard Hill</b> University of Chicago, Chicago	Effective field theory analysis of proton structure in hydrogenic bound states	2013-2016
<b>Tanya Zelevinsky</b> Columbia University, New York	A test of QED and the gravitational inverse-square law at the sub-nanometer scale using ultracold $Sr_2$ molecules	
.....		
<b>Eric Hudson</b> University of California, Los Angeles	Precision measurement of the optical transition in the $^{229}Th$ nucleus	2014-2017
<b>William Snow</b> Indiana University, Bloomington, IN	Absolute Neutron Measurements for the NIST Penning Trap Neutron Lifetime	
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