

**WINTHROP W. SMITH, PI**  
**Two Page CV**

Current Position: **Professor of Physics** and Member of the Institute of Materials Science and the Connecticut Laser Facility, **University of Connecticut, Storrs, CT 06269-3046**

**EDUCATION:**

B.A. , Physics 1958 Amherst College, magna cum laude  
Ph.D., Physics 1963 Massachusetts Institute of Technology

**EXPERIENCE:**

1963-65 Postdoctoral Fellow, NAS-NRC, Joint Institute for  
Laboratory Astrophysics, NBS, Boulder, Colorado  
1965-69 Instructor to Assistant Prof., Columbia University  
1969-74 Associate Professor, University of Connecticut  
1969-75 Research Participant, Oak Ridge Nat. Laboratory  
**1975-present Professor, University of Connecticut**  
1975-76 Visiting Fellow, JILA, Univ. of Colorado  
1978-90 Research Participant, Los Alamos Nat. Laboratory, Consultant, 1985-90  
1979 Physicist (Summer), Lawrence Livermore National Laboratory  
1982-86 Consultant, Brookhaven National Laboratory  
1982-83 Visiting Scientist, Molecular Physics Laboratory, SRI, International;  
Concurrently, Visiting Scholar, Physics Dept., Stanford University (sabbatical)  
1983-84 Program Officer, Physics, Nat. Science Foundation (on leave)  
1990-92 Visiting Scientist, Max-Planck-Institute f. Quantenoptik, Garching bei  
Muenchen, Germany; and Guest Professor, Institute of Physics,  
University of Aarhus, Denmark (sabbatical)  
1997-98 Visiting Professor, MIT, Physics/RLE, AMO Physics (Pritchard  
group), (sabbatical)  
2003- Adjunct Professor of Physics - Connecticut College (concurrent position)

**PROFESSIONAL SOCIETIES:** American Physical Society (Fellow); Phi Beta Kappa; Sigma Xi, AAAS  
**HONORS OR DISTINCTIONS:**

NAS-NRC Committee on Atomic and Molecular Science, 1976-79;  
Chairman, Gordon Research Conference on Atomic Physics, 1977;  
APS Div. of Electron, Atomic and Optical Physics, Executive Committee, 1980-83;  
Chairman, New England Section, APS, 1979;  
Principal Investigator/Coordinator, 1980 Workshop on Accelerator-Based A & M  
Science;  
Review Committee for Nuclear Science, NSF, 1982.  
Secretary-Treasurer, American Physical Society, Division of Atomic, Molecular and  
Optical Physics, 1987-1990; Division of Laser Science, 1996-1999.  
A. von Humboldt Foundation (Germany) Senior U.S. Scientist Awardee, 1990-1992.  
Member, Panel for Physics, NAS/NRC Board of Assessment of Programs for NIST,  
1997-1999  
Chair, American Physical Society Division of Laser Science, 2002-2003.  
President, UConn Chapter, AAUP 2003-2004  
Correspondents board member 2004- for: Comments on Atomic, Molecular and  
Optical Physics (CAMOP), part of journal *Physica Scripta*, Royal Swedish  
Academy of Sciences, Stockholm.

FIELD OF SPECIALIZATION: Atomic, Molecular and Optical Physics

RESEARCH INTERESTS: Experimental AMO physics: ion-atom, ion-molecule and atom-atom collisions, excited state lifetimes of atoms and ions, accelerator-based spectroscopy, hyperfine structure, XUV and laser spectroscopy, laser and collisional cooling of ions, ion impact on surfaces, atom optics and atom interferometry.

**REPRESENTATIVE SELECTED PUBLICATIONS** (Total: refereed journals & invited, >80):

1. W.W. Smith, E. Babenko, R. Cote' and H.H. Michels. 2004.. On the collisional cooling of trapped atomic and molecular ions by ultracold atoms:  $\text{Ca}^+ + \text{Na}$  and  $\text{Na}_2^+(\nu^*, J^*) + \text{Na}$ , invited talk at the Conference on Coherence and Quantum Optics, VIII, University of Rochester, June 13-16, 2001, in Coherence and Quantum Optics: Proceedings of the 8<sup>th</sup> Rochester Conference, N. Bigelow, et al. editors, p. 619-620, Plenum Press (to be published, 2004).
2. Oleg P. Makarov, R. Côté, H. Michaels, and W. W. Smith. Radiative charge transfer lifetime of the excited state of  $(\text{NaCa})^+$ , Phys. Rev. A **67**, 042705 (2003).
3. P. Gee, T. Ehrenreich, Q.C. Kessel, E. Pollack and W.W. Smith. 2003. Observation of Ions Emitted from Hot Graphite, Including Excited Molecular Ions, article in Applications of Accelerators in research and Industry, edited by J.L. Duggan and I.L. Morgan, AIP Conf. Proc. CP680, 207 (2003).
4. S. Gupta, D.A. Kokorowski, R.A. Rubenstein and W.W. Smith. Longitudinal Interferometry with Atomic Beams. Invited book chapter in V. 46 of Advances in Atomic, Molecular and Optical Physics, B. Bederson and H. Walther (editors), p.243-275, Academic Press, NY, 2001. ISBN 0-12-003846-3.
5. Richard A. Rubenstein, David A. Kokorowski, Al-Amin Dhirani, Tony D. Roberts, Subhadeep Gupta, Jana Lehner, Winthrop W. Smith, Edward T. Smith, Herbert J. Bernstein, and David E. Pritchard. Measurement of the density matrix of a longitudinally modulated atomic beam. Phys. Rev. Letters **83**, 2285 (1999).
6. Richard A. Rubenstein, Al-Amin Dhirani, David A. Kokorowski, Tony D. Roberts, Edward T. Smith, Winthrop W. Smith, Herbert J. Bernstein, Jana Lehner, Subhadeep Gupta and David E. Pritchard. Search for Off-Diagonal Density Matrix Elements for Atoms in a Supersonic Beam. Phys. Rev. Letters **82**, 2018 (1999).
7. M. Kostrun, W.W. Smith and J. Javanainen. Theory of the Pi-Periodic Motion of Two Ions in a Paul Trap. Phys. Rev. A **57**, 2895-2903 (1998).
8. E. Babenko, C. Tapalian and W.W. Smith. Associative ionization in laser-excited sodium  $3p + 3d$  collisions. Chem. Physics Letters **244**, 121 (1995).
9. C.A. Schrama, E. Peik, W.W. Smith and H. Walther. Novel miniature ion traps. Optics Commun. **101**, 32 (1993).
10. W.W. Smith, C.Y. Tang, C.R. Quick, H.C. Bryant, P.G. Harris, A.H. Mohagheghi, J.B. Donahue, R.A. Reeder, H. Sharifian, J.E. Stewart, H. Toutounchi, S. Cohen, T.C. Altman and D.C. Rislove. Spectra from multiphoton electron detachment of  $\text{H}^-$ . J. Opt. Soc. B **8**, 17 (1991). See also Phys. Rev. Lett. **66**, 3124 (1991).

**C. Senior Collaborators in last 48 months** (not listed in publications): J. Gillaspy, Ara Chutjian

**D. Graduate Students/Postdoctoral Scholars (last few years):**

O. Makarov (postdoctoral research associate), Jian Lin (Ph.D. major advisor), Dong-Ik Lee (Ph.D. candidate, associate advisor), Julian Klinner (M.S. Associate Advisor), C. Tapalian (Ph.D. major advisor), E. Babenko (M.S. degree, Ph.D. candidate; major advisor), Wm. Hubbard (M.S., major advisor), Juan Lozano (Ph.D. associate advisor), Angel Nikolov (Ph.D., associate advisor), M. Mackie (research collaborator), G. Ramos (research collaborator), Ryan Sears (M.S. major advisor), E. Deveney (Ph.D. associate advisor), C. Wallace (Ph.D. associate advisor), C. Schrama (postdoctoral scholar with H. Walther), B.A. Lincoln (associate advisor), Mike Reaves (Ph.D., associate advisor), Ed Wilds (Ph.D., associate advisor), Vincente Sanches-Villicana (associate advisor), Marin Pichler (Ph.D., associate advisor), Kevin Stephenson (associate advisor), Michael Newman (associate advisor).  
Undergraduate REU Students advised: Jaime Wallace (summer 2004), Jeremy Ouelette (summer 2003), Tim Schaeffer (summer 2002), Pascal Mickelson (summer 2000), Wendy Weeks (summer 1999), Michael T. Reilly (summer 1998).