**Curriculum Vitae**

David E. Nitz
Professor of Physics
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## *EDUCATION*

B.A. (Physics), St. Olaf College, 1973
M.A. (Physics), Rice University, 1976
Ph.D. (Physics), Rice University, 1978.
Dissertation: "Experimental Study of Resonant Electron Transfer in Helium-Helium Ion and Proton-Hydrogen Collisions at Low Relative Velocities"

## *EMPLOYMENT*

St. Olaf College:
Physics Department Chair, 1988-93, 2000-04
Professor of Physics, 1993-
Associate Professor of Physics, 1985-93
Assistant Professor of Physics, 1980-85
Instructor in Physics, 1979-80

Visiting Appointments:
Honorary Fellow, Department of Physics, University of Wisconsin-Madison, 1993-94
Visiting Associate Professor of Space Physics and Astronomy, Rice University, 1984-85
Summer Research Associate, Harvard University, 1980
Research Associate, Joint Institute for Laboratory Astrophysics (University of Colorado and National Bureau of Standards), 1978-79

## *PROFESSIONAL MEMBERSHIPS*

American Physical Society
APS Division of Atomic, Molecular, and Optical Physics
American Association of Physics Teachers
Council on Undergraduate Research

## *PROFESSIONAL INTERESTS*

Atomic and Molecular Physics (Visible, IR, and RF spectroscopy)
Development of computer software for as a resource for teaching physics

***RESEARCH PUBLICATIONS*** (Undergraduate collaborators are underlined)

"Nuclear Electric Quadrupole Moments of Rb from the Hyperfine Spectrum of RbF," Journal of Chemical Physics **125**, 1 (2006), J. Cederberg, E. Frodermann, H. Tollerud, K. Huber, M. Bongard, J. Randolph, and D. Nitz.

"An Anomaly in the Isotopomer Shift of the Hyperfine Spectrum of LiI," Journal of Chemical Physics **123**, 134321 (2005), J. Cederberg, J. Nichol, E. Frodermann, H. Tollerud, G. Hilk, J. Buysman, W. Kleiber, M. Bongard, J. Ward, K. Huber, T. Khanna, J. Randolph, and D. Nitz.

**"**Atomic Transition Probabilities in Co I", Astrophysical Journal Supplement Series **122**, 557 (1999), D. E. Nitz, A. E. Kunau, K. L. Wilson, and L. R. Lentz**.**

**"**Atomic Transition Probabilities in Ti I", Astrophysical Journal Supplement Series **117**, 313 (1998), D. E. Nitz, M. E. Wickliffe, and J. E. Lawler**.**

"Radiative Lifetimes in Co I," Journal of the Optical Society of America B, **12**, 377 (1995), D. E. Nitz, S. D. Bergeson, and J. E. Lawler.

"Repulsive Wall of the $He_2$ Interaction as Inferred from Differential Cross Sections," Physical Review A **47**, 3861 (1993), David E. Nitz, Dean Sieglaff, Mark Lagus, Eric Abraham, Peter Wold, and Kirk Swanson.

"The Hyperfine Spectrum of KF," Journal of Molecular Structure **190**, 143 (1988), G. Pacquette, A. Kotz, J. Cederberg, D. Nitz, A. Kolan, D. Olson, K. Gunderson, S. Lindaas, and S. Wick.

"Absolute Differential Cross Sections for Small-Angle Elastic Scattering in Helium-Rare Gas Collisions at keV Energies," Physical Review A **36**, 3077 (1987), R. S. Gao, L. K. Johnson, D. E. Nitz, K. A. Smith, and R. F. Stebbings.

"Absolute Differential Cross Sections for Very-Small-Angle Elastic Scattering in Helium-Helium Collisions at keV Energies," Physical Review A, **35**, 4541 (1987), D. E. Nitz, R. S. Gao, L. K. Johnson, K. A. Smith, and R. F. Stebbings.

"The Hyperfine Spectrum of Sodium Bromide," Journal of Molecular Spectroscopy **122**, 171 (1987), James Cederberg, David Nitz, Amy Kolan, Tamara Rasmusson, Kurt Hoffman, and Stephen Tufte.

"Centrifugal Distortion Effects in the Hyperfine Spectrum of KCl," Journal of Molecular Spectroscopy, **108**, 6 (1984), David Nitz, James Cederberg, Arthur Kotz, Keith Hetzler, Thor Aakre, and Timothy Walhout.

"Charge Transfer in Proton-Hydrogen and Proton-Deuterium Collisions Within the Energy Range 0.1 - 50 eV," Physical Review A **25**, 2976, (1982), J. H. Newman, J. D. Cogan, D. L. Ziegler, D. E. Nitz, R. D. Rundel, K. A. Smith, and R. F. Stebbings.

"Bandwidth-Induced Reversal of Asymmetry in Optical-Double-Resonance Amplitudes," Physical Review A **24**, 288 (1981), D. E. Nitz, A. V. Smith, M. D. Levenson, and S. J. Smith.

"Absolute Photoionization Cross Section Measurements of the Excited 4D and 5S States of Sodium," Physical Review A **22**, 577 (1980), A. V. Smith, J. E. M. Goldsmith, D. E. Nitz, and S. J. Smith.

"Narrowband Pulsed Dye Laser System for Precision Nonlinear Spectroscopy," IEEE Journal of Quantum Electronics **QE-16**, 113 (1980), G. L. Eesley, M. D. Levenson, D. E. Nitz, and A. V. Smith.

"Photodissociation of Sodium Dimer Ions in Sodium Multiphoton Absorption," Journal of Physics B **12**, L103 (1979), D. E. Nitz, P. B. Hogan, L. D. Schearer, and S. J. Smith.
"Resonant Charge Transfer in Helium Ion-Helium Collisions," Physical Review A **19**, 33 (1979), R. D. Rundel, D. E. Nitz, R. F. Stebbings, K. A. Smith, and M. W. Geis.

"Rapid Determination of the Overlap Integral in a Merging Beams System," Review of Scientific Instruments **14**, 306 (1976), D. E. Nitz, M. W. Geis, K. A. Smith, and R. D. Rundel.

***CONFERENCE PRESENTATIONS***

American Physical Society Division of Atomic, Molecular, and Optical Physics:

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|---|---|
| 2003- Boulder, Colorado | 1993- Reno, Nevada |
| 2001- London, Ontario | 1992- Chicago, Illinois |
| 1998- Sante Fe, New Mexico | 1986- Eugene, Oregon |
| 1996- Ann Arbor, Michigan | 1979- Houston, Texas |
| 1995- Toronto, Ontario | 1976- Lincoln, Nebraska |

30th International Conf. on the Physics of Electron and Atomic Collisions, New York, July,1989.
38th Symposium on Molecular Spectroscopy, Columbus, Ohio, June, 1983.
Workshop on Photoionization of Excited Atoms, Boulder, Colorado, March, 1981.
Eleventh International Quantum Electronics Conference, Boston, Mass. June, 1980.
33rd Symposium on Molecular Spectroscopy, Columbus, Ohio, June, 1978.

***RESEARCH GRANTS***

Research Corporation Cottrell College Science Grant ($35,000) for determination of transition probabilities of spectral lines in atomic cobalt, 1994-96

National Science Foundation RUI grant ($59,600) for the study of helium-rare gas interatomic potentials as inferred from differential cross section data, 1991-93

Research Corporation Cottrell College Science Grants ($21,300) for a computational study of small-angle scattering in collisions of fast atoms and molecules, 1987-88, 90

National Science Foundation RUI grant ($50,000) for support of molecular beam research (Co-Principal Investigator with James Cederberg and Amy Kolan), 1985-86

Research Corporation Cottrell College Science Grants totaling $51,300 for support of molecular beam spectroscopy in collaboration with James Cederberg, 1981-86

***SELECTED COLLEGE - WIDE ACTIVITIES***

Presidential Search Committee, 2005-06
Science Facilities Design Team, 2002 –
Goldwater Scholarship Program, Acting Institutional Representative, 2003-2004
Honors Day Science Symposium Steering Committee, 2000-02
Science Facilities Planning Task Force, 1998-2000
Faculty Advisor to Study-Abroad Programs in Great Britain, 1988-1999
Distinguished Alumni Award Nomination Committee, 1987-89, 2000-01