

BARBARA L. WALDEN

Department of Physics
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EDUCATION:

- Ph.D. in Physics** April 1991
The Pennsylvania State University, State College PA
Dissertation title: "*Low-Frequency Raman Scattering in Silica and Silicophosphate Aerogels*"
- Bachelor of Arts in Physics/Astronomy** May 1981
Colgate University, Hamilton NY
Senior project: "*A Photometric Investigation of T-Tauri Stars in Auriga*"

PROFESSIONAL POSITIONS:

- Associate Professor** June 1997 - present
Department of Physics
Trinity College, Hartford CT
- Assistant Professor** Sept 1991- June 1997
Department of Physics
Trinity College, Hartford CT

GRANTS RECEIVED:

- National Science Foundation, Research Grant Award: #0805172 Sept. 2008 – 2013
"Grain Boundary Induced Stresses in Nanocrystalline Ceramic Coatings and Thin Films"
Amount granted: \$728,000
Principle Investigator: B.W. Sheldon (Brown University)
Co-Principle Investigators: B.L. Walden (Trinity College), J. Rankin (Brown Univ.)
- National Science Foundation, Research Grant Award: #0305418 June 2003 - May 2008
"Controlling Stress Evolution in Ceramic Thin Films and Coatings: Investigations of Mechanical and Chemical Responses"
Amount granted: \$566,000
Principle Investigator: B.W. Sheldon (Brown University)
Co-Principle Investigators: B.L. Walden (Trinity College), J. Rankin (Brown Univ.)
- National Science Foundation, Research Grant Award: #0075207 June 2000 - May 2004
"Control of Intrinsic Stresses in Ceramic Thin Films and Coatings Produced by Chemical Vapor Deposition"
Amount granted: \$431,877
Principle Investigator: B.W. Sheldon (Brown University)
Co-Principle Investigators: B. L. Walden (Trinity College), J. Rankin (Brown Univ.)
- National Science Foundation, Research Grant Award #9619520: April 1997 - March 2000
"Intrinsic Stress and Grain Alignment in Diamond Films"
Amount granted: \$346,206
Principle Investigator: B.W. Sheldon (Brown University)

Co-Principle Investigators: B.L. Walden (Trinity College), J. Rankin (Brown Univ.)

\$130,000 (estimated value) of spectroscopic equipment on semipermanent loan from United Technologies Research Center	Fall 1994
\$15,000 equipment grant, United Technologies Research Center	June 1992
\$330 from Academic Computer Advisory Committee Summer Grant Program for purchase of astronomy simulation software	Summer 1992
\$20,000 summer research and employment grant, United Technologies Research Ctr.	Summer 1991

SELECTED SERVICE TO TRINITY COLLEGE

Chair of Physics Department	Fall 2002 – 2008; Fall 2011 - 2016
Trinity Laser Safety Officer	2010 - present

PROFESSIONAL AFFILIATIONS

American Physical Society	1982 - present
Materials Research Society	1982 - present
American Association of Physics Teachers	1996 - present

SELECTED PUBLICATIONS:

H. Li, B.W. Sheldon, A. Kothari, Z. Ban, and B.L. Walden, “*Stress Evolution in Nanocrystalline Diamond Films Produced by Chemical Vapor Deposition*,” J. App. Phys., **100**, 094309 (2006)

A. Rajamani, B.W. Sheldon, S. Nijhawan, A. Schwartzman, J. Rankin, B.L Walden, and L. Riester, “*Chemistry-induced intrinsic stress variations during the chemical vapor deposition of polycrystalline diamond*,” J. App. Phys., **96**, 3531-3539 (2004).

B.W. Sheldon, S. Nijhawan, J. Rankin, J., B. Walden, “*Methane effects on grain boundary formation and intrinsic stress in CVD diamond*,” Diamond-Materials: Proc 6th Int’l Symp. Electrochem. Soc., **99-32**, 175-84 (2000).

S. Nijhawan, S.M. Jankovsky, B.W. Sheldon, and B.L. Walden, “*Reduction of Intrinsic Stresses During the Chemical Vapor Deposition of Diamond*,” J. Mater. Research **14**, 1046-1054 (1999).

S. Nijhawan, J. Rankin, B.L. Walden-BL, B..W. Sheldon, “*Grain impingement and intrinsic stresses in CVD diamond*,” Thin-Films - Stresses and Mechanical Properties VII, (Materials Research Society, Boston, 1998), 415-20.

W.C. Roman, D.A. Tucker, B.L. Walden, W.H. Sutton, F.A. Otter, and M.T. McClure, “*Microwave Plasma Processing of Diamond Coatings for Aerospace Applications: Deposition, Characterization, Performance Evaluation*,” J. Amer. Ceram. Soc., **80** (1997).

SELECTED PRESENTATIONS:

J.F. Moran, B.L. Walden, “*Skepticism and Belief*,” Mathematics Association of America PREP meeting, Sleeping Lady, WA, August 2004

J.F. Moran, B.L. Walden, “*Thinking Critically about Issues in Science: Using Statistics to Reinforce Skepticism*,” Joint Mathematical Meeting, New Orleans, Jan. 2001

B.L. Walden, “*Science, Anti-Science, and the Scientific Method*,” presented at the interdisciplinary conference “Truth and Method: Challenging the Norms” sponsored by Trinity College, February 19, 2001

B.L. Walden, “*Physics, Linguistics and the Science of Sound*,” Laboratories and Literacy: Mathematics and Science in the Humanities, Feb. 25-26, 1999, Trinity College

B.L. Walden, S. Kittelberger, J. Straumanis, D. Hyland, D. Euraque, "*The Future in the Laboratories*," panel discussion, *Laboratories and Literacy: Mathematics and Science in the Humanities*, Feb. 25-26, 1999, Trinity College