

DR. NATHANIEL R. GREENE

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EDUCATION

Ph.D. in Physics, Boston University, January 1997

M.A. in Physics, Boston University, September 1992

B.S. in Physics, Antioch College, Yellow Springs, Ohio, June 1986

TEACHING EXPERIENCE

Assistant/Associate/Full Professor of Physics, Bloomsburg University: Courses taught include General Physics, Science of Sound, Electronics, Physical Science, Statics, Dynamics, Thermodynamics, and Quantum Mechanics. 1996 – Present (Tenured and promoted to Associate Professor, August 2001; promoted to Professor, August 2009.)

Recitation Instructor, Boston University: 1990-93

Physics Teacher, U.S. Peace Corps, Cameroon, West Africa: 1987-89

ALTERNATIVE ENERGY EXPERIENCE

Bloomsburg University Solar Kiosk: Designed and installed interactive energy education kiosk with custom two-axis solar tracker. 2012-2014

Community-Scale Wind Energy: Provided technical support for turnkey installer of 100-kW wind turbines during sabbatical with Aegis Wind, Waitsfield, VT. 2013

Bloomsburg University Solar Array: Planned and implemented 3-kW solar array. 2011-2012

Biofuel Heat for Bloomsburg Recycling Center, Bloomsburg, PA: Planned and installed multi-fuel heating system at recycling facility on Patterson Drive. Buildings heated with waste vegetable oil and waste motor oil. 2010

Replacement of Coal Stoker with Biomass Boiler, Bloomsburg University: Conceived plan, conducted feasibility study, and wrote successful grant to install a large-capacity wood-chip boiler at the BU Heating Plant. 2008-2010

Campus Biodiesel Production, Bloomsburg University: Initiated biodiesel facility on upper campus, with waste vegetable oil converted to motor fuel for campus shuttle bus. 2007-2009

OTHER TECHNICAL EXPERIENCE

MIG/TIG Welding: Basic 30-hour course completed at Columbia-Montour AVTS. 2011

Research Assistant in experimental cosmic ray physics, Boston University. Tasks included data analysis (PAW), computer programming (FORTRAN, C, parallel computing), CAMAC data acquisition, image analysis, mechanical design (AutoCAD), precision machining (Bridgeport mill), and grant writing. 1992-96

Research Assistant in experimental solid state physics, Boston University. Experience with ultra-high vacuum systems and machining. Spring-Summer 1992

Research Intern, Xerox Corporation, Rochester, NY. Exploratory research on high-voltage ion sources. Invented "Planar Scrotron Device." Spring 1985, Spring 1986

Technician, I.B.M. Corporation, Yorktown Heights, NY. Computer-aided mechanical design and electronics assembly. Winter 1984

Automotive Mechanic, A.B.J. Foreign Auto, Somerville, MA. 1981-91 (part-time)

PUBLICATIONS

N. R. Greene & J. C. Brunskill, "Design of a Solar Tracking Interactive Kiosk," accepted for publication in *Physics Education* v. 52, 143 (2017)

N. R. Greene, T. Gill, & S. Eyerly, "Finding the Effective Mass and Spring Constant of a Force Probe from Simple Harmonic Motion," *The Physics Teacher*, v. 54, 138 (2016).

G. F. Link & N. R. Greene, "Sonic Range Finder Based on Gunshot Acoustics," *Keystone Journal of Undergraduate Research*, v. 1 (1), 19 (2011).

N. R. Greene & B. J. Filko, "Animal-Eyeball vs. Road-Sign Retroreflectors," *Ophthalmic and Physiological Optics*, v. 30, 76 (2010).

N. R. Greene, "Energy Flow for a Variable-Gap Capacitor," *The Physics Teacher*, v. 43, 340 (2005).

C. G. Noll, N. R. Greene, S. T. Ashman, & M. A. Catino, "The Role of Capacitance in Corona-Electrode Arrangements," in Electrostatics 2003, H. Morgan, Ed., Institute of Physics Publishing, Bristol, England, 2004 (ISBN 0750309490).

N. R. Greene, "Shedding Light on the Candela," *The Physics Teacher*, v. 41, 409 (2003).

C. G. Noll, S. M. Pursel, & N. R. Greene, "Construction of a 35-cm-Diameter Insulating Fluidized Bed," *Proceedings of the ESA-IEEE Joint Meeting on Electrostatics 2003*.

N. R. Greene, "Lightbulbs with a Memory," *The Physics Teacher*, v. 40, 275 (2002).

N. R. Greene & M. R. Dworsak, "Bernoulli at the Gas Pump," *The Physics Teacher*, v. 39, 346 (2001).

C. G. Noll, S. T. Ashman, M. A. Catino, & N. R. Greene, "Influence of Grounded Shields on Corona Charging Applicators," *Proceedings of the Electrostatics Society of America Annual Meeting 2001*.

S. P. Ahlen, N. R. Greene, D. Loomba, et al., "Measurement of the Isotopic Composition of Cosmic-Ray Helium, Lithium, Beryllium, and Boron up to 1700 MeV per Atomic Mass Unit," *Astrophysical Journal*, v. 534, 757 (2000).

N. R. Greene & R. J. Dunn, "A Conical Spring – Which End Up?," *The Physics Teacher*, v. 38, 228 (2000).

N. R. Greene, "Tossing a Garden Hose." *The Physics Teacher*, v. 37, 46 (1999) plus follow-up letter to the editor in *The Physics Teacher*, v. 37, 195 (1999).

N. R. Greene, "A Low-Friction Rotator from the Junkyard," *The Physics Teacher*, v. 35, 431 (1997).

D. Loomba, S. P. Ahlen, N. Greene, et al., "The Cosmic Ray Isotopic Composition of Li, Be, and B from the SMILI2 Experiment," *Bulletin of the American Physical Society*, v. 41, n. 2, 989 (1996).

J. P. Wefel, et al., "Measurements of Cosmic Ray Helium During the 1991 Solar Maximum," *Proceedings of 24th International Cosmic Ray Conference*, v. 2, 630 (1995).

J. P. Wefel, et al., "The Atmospheric Background of Protons and Deuterons Measured at 5 g/cm³," *Proceedings of 24th International Cosmic Ray Conference*, v. 2, 634 (1995).

GRANTS

"Grey Barn Farm Acoustic Study Grant," Massachusetts Clean Energy Center, \$11,600. Submitted by Aegis Wind on behalf of property owner. February 2013

"Campus-wide energy monitoring and efficiency initiative," Bloomsburg University internal grant, \$25,000. April 2012

“Bloomsburg University Campus Energy Monitoring Kiosk,” Constellation Energy E2 Energy to Educate Grant, \$39,900 (Jeff Brunskill coauthor). November 2011

“Bloomsburg University Photovoltaic Solar Array and Educational Demonstration Site,” two internal Bloomsburg University awards totaling \$15,000 (Jeff Brunskill coauthor). April 2011

“Biofuel Partnership with Bloomsburg Recycling Center,” Bloomsburg University Foundation, \$9,282. February 2010

“Bloomsburg University Wood-Chip Boiler Replacement of Coal Stoker,” Pennsylvania Department of Environmental Protection Energy Harvest Grant, \$500,000. August 2009

“BU Biofuels Initiative” (biodiesel project), five internal Bloomsburg University awards totaling \$16,190 (Mark Tapsak coauthor). 2007-2009

AWARDS

Bloomsburg University College of Science and Technology Distinguished Faculty Teaching Award. 2017

Bloomsburg University Outstanding Teaching Award. 2012

Professional Recyclers of Pennsylvania Waste Watcher Award. 2011

UNITED STATES PATENT

Patent # 5,153,435: "Planar Scorotron Device" (ion source for photocopiers). 1992