

## **Darin T. Zimmerman, Ph.D.**

Associate Professor of Physics  
Physics Department Coordinator  
The Pennsylvania State University, Altoona College

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### **EDUCATION**

- 1997 Ph.D., Physics  
Texas A&M University  
Dissertation: *Vibrational Spectroscopy of Adsorbed Molecules Using Self-Assembling Tunnel Junctions.*
- 1990 B.S., Physics  
University of California, Irvine

### **POSITIONS HELD**

- 2003 – present Associate Professor of Physics, Penn State Altoona
- 1999 – present Adjunct Assistant Professor, Saint Francis University
- 1998 - present Adjunct Math & Science Teacher, Great Commission Schools, Altoona, PA
- 1997 – 2003 Assistant Professor of Physics, Penn State Altoona
- 1992 - 1997 Graduate Research Assistant (Low Temperature Lab), Texas A&M University
- 1990 -1997 Graduate Teaching Assistant (Physics), Texas A&M University
- 1994 – 1999 Physics Teacher - “Physics for Young Scientists” - a hands-on Physics Laboratory for 5th - 7th graders at Texas A&M University.
- 1988 – 1990 Lab Assistant (Irvine-Michigan-Brookhaven Proton Decay Project), University of California, Irvine

## AWARDS AND RECOGNITION

- 1999 Robert A. Welch Postdoctoral Research Fellowship, Department of Physics, Texas A&M University, (summer).
- 1997 Summer Faculty Research Fellowship, American Chemical Society / Petroleum Research Fund, Collaborator: Paul S. Weiss, Department of Chemistry, Penn State University.
- 1996 Selected as The Outstanding Physics Teaching Assistant at Texas A&M University and was elected to membership in the American Association of Physics Teachers.
- 1996 Outstanding Presentation Award from the Texas Section of the American Physical Society for a talk presented at the University of Texas at Arlington, October 11, 1996.
- 1994 McDonald's Award for Excellence in Teaching by Graduate Students, Texas A&M University. One of two most prestigious teaching awards presented annually to less than 1% of teaching assistants.

## PUBLICATIONS

1. D. T. Zimmerman, M. B. Weimer, and G. Agnolet. "Vibrational Spectroscopy of Molecules Using Self-Assembling Tunnel Junctions." *Czech. J. Phys.* **46**, S5, 2835 (1996).
2. D. T. Zimmerman, M. B. Weimer, and G. Agnolet. "An Adjustable Oxide-free Tunnel Junction for Vibrational Spectroscopy of Molecules." *Appl. Phys. Lett.* **75**, 2500 (1999).
3. D. T. Zimmerman and G. Agnolet. "A Point Contact Device For Use as An In-situ Chemical Sensor." *Chemical Sensors IV: Proc. Electrochem. Soc.* **99-23**, 390 (1999).
4. G. Agnolet, S. R. Savitski, and D. T. Zimmerman "Zero Bias Features in Self-Assembling Tunnel Junctions." *Physica B* **284**, 1840 (2000).
5. G. Agnolet and D. T. Zimmerman. "Intensity Studies of Inelastic Electron Tunneling Spectra." *Physica B* **284**, 1842 (2000).
6. D. T. Zimmerman and G. Agnolet, "Inelastic Electron Tunneling Measurements Using Adjustable Oxide-Free Tunnel Junctions," *Rev. Sci. Instrum.* **72**, 1781 (2001).
7. J. Ma, J.F. Diehl, E.J. Johnson, K.R. Martin, N.M. Miskovsky, C.T. Smith, G.J. Weisel, B.L. Weiss, and D.T. Zimmerman, "Systematic Study of Microwave Absorption, Heating, and Microstructure Evolution of Porous Copper Powder Metal Compacts," *J. Appl. Phys.* **101**, 074906 (2007).
8. R.C. Bell, E.D. Miller, J.O. Karli, A.N. Vavreck, and D.T. Zimmerman, "Influence of Particle Shape on the Properties of Magnetorheological Fluids," *International Journal of Modern Physics, B* **21**, 5018 (2007).

9. R.C. Bell, E.D. Miller, J.O. Karli, A.N. Vavreck, D.T. Zimmerman, "Influence of Particle Shape on the Properties of Magnetorheological Fluids," in *Electrorheological Fluids and Magnetorheological Suspensions: Proceedings of the 10th International Conference on ERMR 2006*, F. Gordaninejad, O. Graeva, A. Fuchs, and D. York, eds., World Scientific Publishing Co., Inc., New York, 2007.
10. R.C. Bell, J.O. Karli, A.N. Vavreck, D.T. Zimmerman, G.T. Ngatu, and N.M. Wereley, "Magnetorheology of submicron diameter iron microwires dispersed in silicone oil," *Smart Mater. Struct.* **17**, 015028 (2008).
11. D.T. Zimmerman, *Core Concepts in College Physics*, an algebra-based physics textbook. Contract with McGraw-Hill Higher Education to develop and publish (target publication date of 01/01/2011). First draft is complete (30 chapters). Submitted for external review; second draft in progress.
12. K.R. Martin, J. Ma, E.J. Johnson, N.M. Miskovsky, C.T. Smith, G.J. Weisel, and D.T. Zimmerman, "Microwave Properties of Powder Metal-Insulator Compacts up to and Beyond Percolation." In preparation for submission to *Journal of Applied Physics*.
13. C. M. Lynch, E.J. Johnson, J. Ma, K.R. Martin, N.M. Miskovsky, G.J. Weisel, and D.T. Zimmerman, "Complex Permittivity and Permeability of Powder Metal Compacts by Cavity Perturbation Techniques." In preparation for submission to *Review of Scientific Instruments*.
14. C.T. Smith, D.H. Bailey, K.R. Martin, N.M. Miskovsky, E.J. Johnson, G.J. Weisel, and D.T. Zimmerman, "Numerical Simulations of Microwave Properties and Percolation in Metal Insulator Mixtures." In preparation for submission to *Computational Materials*.

### **FUNDED RESEARCH GRANTS (Totaling \$779,382)**

1. "Vacuum Chamber Cell and SATJ for Undergraduate Research Laboratory," **\$1,500**, Altoona College Research Development Fund (RDG), October 1997 .
2. "Data Acquisition Unit for Undergraduate Research Laboratory," **\$1,392**, Altoona College Research Development Fund (RDG), July 1998.
3. "Gas Handling System for Undergraduate Research Laboratory," **\$2,950**, Altoona College Dean's Fund, February 1998.
4. "RUI: Studies of Single Molecule Vibrational Spectra and Zero Bias Features Using Adjustable Point-Contact Tunnel Junctions," National Science Foundation-Research at Undergraduate Institutions, Division of Materials Research / Condensed Matter Physics (NSF-DMR 0072148), **\$196,813** (includes \$27,000 matching funds from Penn State University). Darin T. Zimmerman, PI. Effective 05/2000-2003.
5. "Tip Mount for Novel Scanning Probe Microscope," Division of Mathematics and Natural Science, Penn State Altoona College Student Research Program (summer 2000), **\$1,500**. Darin T. Zimmerman, PI.
6. "Nanotube-based Fluids," Altoona College Dean's Development Fund, October 2000, **\$1,750**. Darin T. Zimmerman, Principal Investigator.

7. "An Undergraduate Laboratory for Examining the Separate Roles of E- and H- Fields in the Microwave Sintering of Powdered Metals and Semi-Metals," Division of Mathematics and Natural Science, Penn State Altoona College Student Research Program (summer 2001), **\$1,500**. Darin T. Zimmerman, PI.
8. "An Undergraduate Laboratory for Examining the Separate Roles of E- and H- Fields in the Microwave Sintering of Powdered Metals and Semi-Metals." Altoona College Research Development Grant (RDG), July 2001, **\$2,150** (includes \$500 student stipend). Darin T. Zimmerman, PI.
9. "Rapid Heating of Powdered Metals in Microwave Electric and Magnetic Fields," Division of Mathematics and Natural Science, Penn State Altoona College Student Research Program, summer 2002, **\$1,500**. Darin T. Zimmerman, PI.
10. "Modifications of a Single-mode Microwave Cavity for Heating Rate Studies of Powdered Metals," Altoona College Research Development Grant, July 2002, **\$2,150**. Darin T. Zimmerman, PI.
11. "Iron-Fiber Based Magnetorheological Fluids Realized by Matrix Drawing and Cryogenic Chopping," Altoona College Dean's Development Fund, November 2002, **\$2,700**. Darin T. Zimmerman, PI.
12. "RUI: Studies of the Heating and Sintering of Powdered Metals in Separate Electric and Magnetic Fields Using a Single Mode Microwave Cavity," National Science Foundation – Research at Undergraduate Institutions, Division of Materials Research / Metals (NSF-DMR 0406584), **\$373,700** (includes \$73,750 from Penn State University). Darin T. Zimmerman (PI), Nicholas M. Miskovsky (Co-PI), Brock L. Weiss (Co-PI), Gary J. Weisel (Co-PI), Effective 06/2004 – 05/2008.
13. "Numerical Modeling and Computer Simulations of Microwire Magnetorheological Fluids," Altoona College Research Development Grant, July 2007, **\$6,918**. D.T. Zimmerman, PI, R.C. Bell, J. Ma, A.N. Vavreck, Co-PIs.
14. "RUI: Systematic Study of the Rheology and Sedimentation of Microwire-Based Magnetorheological Fluids," Division of CBET / Fluid Dynamics and Hydraulics (NSF-CBET 0755696), **\$179,859**. Richard C. Bell (PI), Andrew N. Vavreck (Co-PI), Darin T. Zimmerman (Co-PI). Effective 07/2008 – 06/2011
15. "Microwave Properties of Metal-insulator Mixtures," Penn State Altoona Student Research Program, summer 2008, **\$1,500**. Darin T. Zimmerman, PI.
16. "Using Percolation of Metal-insulator Mixtures As a Sensitive Chemical Sensor," Penn State Altoona Student Research Program, summer 2008, **\$750**. Darin T. Zimmerman, PI.
17. "Using Percolation of Metal-insulator Mixtures as a Sensitive Chemical Sensor," President's Fund for Research, Penn State University, **\$750**. Darin T. Zimmerman, PI.

## RESEARCH ASSISTANTS

### Postdoctoral

JunKun Ma, Ph.D. (2005 – 2007)

### Graduate

Kelly R. Feather, M. S. Materials (2006 – present)

### Undergraduate

Kyle T. Cravener, B.S. Mechanical Engineering (2008 – present)

Jeremy D. Cardellino, B.S. Physics (2007 – present)

Kelly R. (Martin) Feather, B.S. Science (2005 – 2006)

Charles T. Smith III, B. S. Physics (2005 – 2007)

Derek H. Bailey, B.S. Mechanical Engineering (2006 – 2007)

John F. Diehl, B. S. Physics (2005 – 2007)

Christopher M. Lynch, B. S. Mathematics/Physics (2005 – 2006)

Devin F. Spratt, B. S. Mechanical Engineering (2005 – 2006)

Brad A. Petrilla, B. S. Aerospace Engineering (2004 – 2005)

John R. Rea, B. S. Electrical Engineering (2004 – 2005)

Darin S. Merrill, B. S. Electrical Engineering (2003 – 2004)

James R. Brenner, B. S. Mechanical Engineering (2003 – 2004)

Darrell L. Sharp, B. S. Electromechanical Engineering Technology (2000 – 2003)

Jamie D. McCulloch, B. S. Computer Engineering (2001 – 2002)

Steven Liao, B. S. Electrical Engineering (2001 – 2002)

Justin M. Huffman, B. S. Science (2001 – 2002)

Nathaniel A. Anderson, B. S. Computer Information Technology (2001 – 2002)

Brandon L. Kline, B. S. Mechanical Engineering (2001 – 2002)

Ross A. Rager, B. S. Mechanical Engineering (2001 – 2002)

Scott. D. Rodgers, B. S. Aerospace Engineering (2000 – 2001)

## COLLABORATORS

### Microwave Properties of Materials / Sintering

Nicholas Miskovsky (Penn State Altoona, Physics)

Gary Weisel (Penn State Altoona, Physics)

JunKun Ma (Eastern Louisiana University, Engineering)

### Tunneling Spectroscopy

Glenn Agnolet (Department of Physics, Texas A&M University)

### Magnetorheological Fluids

Richard Bell (Penn State Altoona, Chemistry)

Andrew Vavreck (Penn State Altoona, Engineering)

## **TEACHING EXPERIENCE (postgraduate)**

- 1997- PHYS 419 (advanced mechanics), PHYS 237 (modern physics), PHYS 211, 212, 213, 214 (calculus-based introductory physics sequence: mechanics, electromagnetism, and modern physics with calculus), PHYS 250 & 251 (algebra-based mechanics and electromagnetism), and PHYS 1 (conceptual physics) at Penn State Altoona College.
- 1998- High school-level Physics, Chemistry, Biology, Geometry, Algebra II, and Algebra III (pre-calculus) at Great Commission Schools, Altoona, PA.
- 2000- Physical Science 101 at Saint Francis University, Loretto, PA. This course is for non-science majors who are usually completing degrees in business or education. Most are non-traditional, adult students.

## **PAPERS PRESENTED (first author presenting)**

1. Darin T. Zimmerman and Glenn Agnolet, "Inelastic Electron Tunneling Spectroscopy Using Self-Assembling Tunnel Junctions," Texas Section Meeting of the American Physical Society, Lubbock, Texas, October 1995.
2. Darin T. Zimmerman and Glenn Agnolet, "Vibrational Spectroscopy of Adsorbed Molecules Using Self-Assembling Tunnel Junctions," 1996 March Meeting of the American Physical Society, St. Louis, Missouri.
3. Glenn Agnolet, Darin T. Zimmerman, Michael B. Weimer, "Vibrational Spectroscopy of Adsorbed Molecules Using Self-Assembling Tunnel Junctions," XXI International Conference on Low Temperature Physics, Prague, Czech Republic, August 1996.
4. D. T. Zimmerman, M. B. Weimer, and G. Agnolet, "The Self-Assembling Tunnel Junction: An Adjustable Microscopic Junction for Vibrational Spectroscopy," Texas Section Meeting of the American Physical Society, Arlington, Texas, October 1996.
5. D. T. Zimmerman, M. B. Weimer, and G. Agnolet, "The Self-Assembling Tunnel Junction: An Adjustable Microscopic Junction for Vibrational Spectroscopy," 1997 March Meeting of the American Physical Society, Kansas City, Missouri.
6. D. T. Zimmerman, "Point-Contact Tunnel Junctions," Invited Talk, Weiss Group, Department of Chemistry, Penn State University, February 24, 1988.
7. D. T. Zimmerman, M. B. Weimer, and G. Agnolet, "Vibrational Spectroscopy of Acetylene Using Point-Contact Tunnel Junctions," 1998 March Meeting of the American Physical Society, Los Angeles, California.

8. D. T. Zimmerman, M. B. Weimer, and G. Agnolet, "A Point-Contact Tunnel Junction for Use as a Sensitive Chemical Detector and Force Transducer," 1999 March Meeting of the American Physical Society, Atlanta, Georgia.
9. G. Agnolet, D. T. Zimmerman, S. R. Savitski, and M. B. Weimer, "Zero Bias Features In Self-Assembling Tunnel Junctions," XXII International Conference on Low Temperature Physics, Helsinki, Finland, August 1999.
10. G. Agnolet, D. T. Zimmerman, S. R. Savitski, and M. B. Weimer, "A New Geometry for Inelastic Electron Tunneling Spectroscopy," XXII International Conference on Low Temperature Physics, Helsinki, Finland, August 1999.
11. D. T. Zimmerman and G. Agnolet, "A Point Contact Device for Use as An In-situ Chemical Sensor," Joint International Meeting of The Electrochemical Society and The Electrochemical Society of Japan, Honolulu HI, October 17-22 1999.
12. D. T. Zimmerman and G. Agnolet, "Intensity Studies of Inelastic Electron Tunneling Spectra," 2000 March Meeting of the American Physical Society, Minneapolis, MN.
13. G. Agnolet, S. R. Savitski, M. B. Weimer, and D. T. Zimmerman, "Zero Bias Features in Self-Assembling Tunnel Junctions," March Meeting of the American Physical Society, Minneapolis, MN, March 2000.
14. D. T. Zimmerman and G. Agnolet, "An Adjustable Oxide-free Tunnel Junction for Vibrational Spectroscopy of Molecules," Poster presentation at "Nanoscience: Underlying Physical Concepts and Phenomena," The Arthur M. Sackler Colloquia of the National Academy of Sciences, Washington, D. C., May 18-20, 2001.
15. D. L. Sharp, D. T. Zimmerman, and G. Agnolet, "Lorentz Force Feedback Scanning Tunneling Microscope," March Meeting of the American Physical Society, Indianapolis, IN, March 2002.
16. D.T. Zimmerman, D. L. Sharp, and G. Agnolet, "Lorentz Force Tunneling Spectrometer for Studying Molecules on Single Crystal Surfaces," March Meeting of the American Physical Society, San Antonio, TX, March 2003.
17. D.T. Zimmerman, "Lorentz Force Tunneling Spectrometer for Studying Molecules on Single Crystal Surfaces," Invited Talk, Penn State University, Department of Physics, October 10, 2003.
18. D.T. Zimmerman, "Making the Most of Metals in Your Microwave: Studies of the Heating and Sintering of Powdered Metals in Separate Electric and Magnetic Fields Using a Single Mode Microwave Cavity," Invited speaker, Penn State Altoona Colloquium, March 13, 2006.
19. C.M. Lynch, E. Johnson, J. Ma, N.M. Miskovsky, G. J. Weisel, B. L. Weiss, and D.T. Zimmerman, "Complex Permittivity of Powder Metal Compacts by Cavity Perturbation Technique." March Meeting of the American Physical Society, Baltimore, MD, March 2006.

20. K.R. Martin, E. Johnson, J. Ma, N.M. Miskovsky, G. J. Weisel, B. L. Weiss, and D.T. Zimmerman, "Microwave Heating and Pre-sintering of Copper Powder Metal Compacts in Separated Electric and Magnetic Fields," March Meeting of the American Physical Society, Baltimore, MD, March 2006.
21. C.M. Lynch, E. Johnson, J. Ma, N.M. Miskovsky, G. J. Weisel, B. L. Weiss, and D.T. Zimmerman, "Complex Permittivity of Powder Metal Compacts by Cavity Perturbation Technique." Pennsylvania State University Undergraduate Research Exhibition, April 5, 2006.
22. K.R. Martin, E. Johnson, J. Ma, N.M. Miskovsky, G. J. Weisel, B. L. Weiss, and D.T. Zimmerman, "Microwave Heating and Pre-sintering of Copper Powder Metal Compacts in Separated Electric and Magnetic Fields," Pennsylvania State University Undergraduate Research Exhibition, April 5, 2006.
23. D.T. Zimmerman, "Making the Most of Metals in Your Microwave: Studies of the Heating and Sintering of Powdered Metals in Separate Electric and Magnetic Fields Using a Single Mode Microwave Cavity," Central Pennsylvania Section of the American Association of Physics Teachers, Pennsylvania College of Technology, April 8, 2006.
24. C.M. Lynch, E. Johnson, J. Ma, N.M. Miskovsky, G. J. Weisel, B. L. Weiss, and D.T. Zimmerman, "Complex Permittivity of Powder Metal Compacts by Cavity Perturbation Technique." Penn State Altoona Undergraduate Research Fair, April 11, 2006.
25. K.R. Martin, E. Johnson, J. Ma, N.M. Miskovsky, G. J. Weisel, B. L. Weiss, and D.T. Zimmerman, "Microwave Heating and Pre-sintering of Copper Powder Metal Compacts in Separated Electric and Magnetic Fields," Penn State Altoona Undergraduate Research Fair, April 11, 2006.
26. R.C. Bell, E.D. Miller, J.O. Karli, A.N. Vavreck, and D.T. Zimmerman, "Influence of Particle Shape on the Shear Strength of Magnetorheological Fluids," ERMFR 2006: The 10<sup>th</sup> Conference on Electrorheological and Magnetorheological Fluids, June 18 – 22, Lake Tahoe, CA.
27. D.T. Zimmerman, E.J. Johnson, J. Ma, K.R. Martin, N.M. Miskovsky, C.T. Smith, G.J. Weisel, and B.L. Weiss, "Microwave Heating and Pre-sintering of Copper Powder Metal Compacts in Separated Electric and Magnetic Fields," PM2006: World Congress on Powder Metallurgy, September 24–28, Busan, South Korea.
28. J. Ma, C.T. Smith, G.J. Weisel, B.L. Weiss, N.M. Miskovsky, and D.T. Zimmerman, "Single Mode Microwave Heating of Copper Powder Metal Compacts," 2006 COMSOL Users Conference, October 22 – 24, Boston, MA.
29. D.T. Zimmerman, "Microwave Heating and Sintering of Powdered Metals," Cabot Corporation, October 18, 2007, Billerica, MA.
30. D. Zimmerman, J. Diehl, E. Johnson, K. Martin, J. Ma, N. Miskovsky, C. Smith, G. Weisel, B. Weiss, "Systematic Study of Microwave Absorption, Heating, and Microstructure Evolution of Porous Copper Powder Metal Compacts," March Meeting of the American Physical Society, New Orleans, LA, March 2008.
31. D. Zimmerman, K. Martin, J. Cardellino, E. Johnson, J. Ma, N. Miskovsky, and G. Weisel, "Percolation Studies of Metal-insulator Composites at Microwave Frequencies," March Meeting of the American Physical Society, New Orleans, LA, March 2008.

32. R. Bell, J. Karli, J. Krug, and D. Zimmerman, "Length dependence of the magnetorheological properties of cobalt microwires dispersed in silicone oil," March Meeting of the American Physical Society, New Orleans, LA, March 2008.

## **PROFESSIONAL AFFILIATIONS**

American Association of Physics Teachers  
American Physical Society  
Materials Research Society

## **SERVICE (Altoona College, 2000 - present)**

Physics Department Chair, 2002 - present

Chair, Applied Science Degree Committee, 2003 - present

Chair, Physics Faculty Search Committee, 2002 – present

Promotion and Tenure Committee, Division of Mathematics and Natural Science, 2005 – present

Faculty Affairs Committee, Division of Mathematics and Natural Science, 2004 – present

Postdoctoral Research Advisor, Dr. Jun Kun Ma, 2005 - present

Senior Thesis Advisor, Christopher M. Lynch, B. S. Mathematics, 2005 – 2006

Co-chair, subcommittee on Academic Programs, Altoona College Planning Committee, 2001 – 2004

Member, Executive Committee of the Division of Mathematics and Natural Science, 2002 - present

Member, Altoona College Faculty Senate, 2001 – 2002

Member, Schreyer Honors Diplomas Committee, 2001 - present

Member, Facilities Planning Committee, 1997-1998.

Member, New Degree Programs Committee, 1998-present.

Member, Academic Affairs Committee 2000 – 2004

Member, Student Affairs and Outreach Committee 2000 – present

## Proposal Referee

U. S. Civilian Research & Development Foundation Young Investigators Program, Arlington, VA.  
“Investigation of Structure and Electronic Properties of Clean Metal Surfaces,” A. Meyerovich, PI

National Science Foundation, “Electro-Discharge Consolidated Ultrafine-Grained Alloys: Processing and Characterization,” Fuqian Yang, PI.

## Manuscript Reviewer

1. Busza, W., S. Cartwright, and A. H. Guth, *Introductory Classical Mechanics: A Study Guide to MIT Course 8.01*. Addison Wesley Longman Publishers, Menlo Park CA (1997).
2. Doty, S. D., and S. L. Doty, *Introductory Physics I—Calculus Based: Four Basic Concepts*, Addison Wesley Longman Publishers, Menlo Park CA (1997).
3. Saslow, W. M., *Electricity, Magnetism, and Electromagnetic Waves*, Harcourt / Academic Press, Burlington, MA (2000).
4. Giambattista, Richardson, and Richardson, *College Physics*, McGraw – Hill Higher Education, Dubuque, IA (2001).

## Outreach to Community

Scholastic Scrimmage, high school coach, The Pennsylvania State University, 2007 – present.

High school faculty engineering advisor, 2006 Pittsburgh Regional Rube Goldberg Challenge

High School Coach, U. S. Department of Energy National Science Bowl, 2004 – present.

Presenter, “Physics at 321 Degrees Below Zero,” Penn State Altoona, February 24, 2001.

Senior Project Supervisor for Valerie Kaplan, student, The Grier School, Tyrone, PA, May, 2000.

Co-Organizer and Presenter, “The Wonders of Physics & Chemistry,” Foot of Ten Elementary School, Duncansville, PA 16635, May, 1999.

Co-Organizer and Presenter, “Hands-On Physics Laboratory for Elementary and Secondary School Students,” YMCA, Hollidaysburg, PA, July 1998.

Expert Source, “Blast Equal to Six Dynamite Sticks, Expert Says,” by William Kibler, *Altoona Mirror* pp. A1, A6, December 13, 1998.