

# Todd A Zimmerman

Associate Professor, University of Wisconsin-Stout  
Chemistry and Physics Department  
College of Science, Technology, Engineering, Mathematics and  
Management

Office: 334C Jarvis Hall-Science Wing

Phone: 715-232-1158

Email: [zimmermant@uwstout.edu](mailto:zimmermant@uwstout.edu)

**Research Interests:** Research Experience for Faculty/Students Pairs at Undergraduate Institutions, University of Nebraska – Lincoln Materials Research Science and Engineering Center, Summer 2009.  
Research Experience for Faculty/Students Pairs at Undergraduate Institutions, University of Nebraska – Lincoln Materials Research Science and Engineering Center, Summer 2008.

## Education

- **Ph D Physics**  
University of Wisconsin- Madison  
Madison, WI, 2003
- **BA Physics**  
Lawrence University  
Appleton, WI, 1992

## Work Experience

### Academic - Post-Secondary

- **University of Wisconsin-Stout**, Chemistry and Physics Department  
Associate Professor  
July 2016 -
- **University of Wisconsin- Stout**, Chemistry and Physics Department  
Assistant Professor  
July 2010 - June 2016
- **Gustavus Adolphus College**, Physics  
Visiting Assistant Professor  
2008 - 2010
- **Madison Area Technical College**, Physics  
Faculty Member  
2003 - 2008
- **UW-Madison Liberal Studies and the Arts**  
Instructor  
2002 - 2003
- **TRIO Program**  
Tutor  
2001 - 2002
- **University of Wisconsin- Madison**, Physics Department  
Teaching Assistant  
1997 - 1997
- **University of Minnesota**  
Teaching Assistant  
1995 - 1997

## Intellectual Contributions

### Journal Article

- Berg, R., Brand, A., Grant, J. E., Kirk, J. S., & Zimmerman, T. A. Leveraging Recording Mini-Lectures to Increase Student . *Online Classtoom* , 14(2), Magna Publishing .
- Zimmerman, T. A., Schmidt, L. J., Becker, T. H., Peterson, J., Nyland, R., & Surdick, R. Narrowing the Gap between Students and Instructors: A Study of Expectstiond. *Transformative Dialogues: Teaching & Learning Journal*, 7(1).
- Zimmerman, T. A. Learning Objectives Based Assessment- A SBG Grading Paradigm. *The Global Physics Department*.
- Patterson, M., Cochran, A., Ferina, J., Rui, X., Zimmerman, T. A., Sun, Z., Kramer, M. J., Sellmyer, D. J., & Shield, J. E. Early stages of direct L10 FePt nanocluster formation: The effects of plasma characteristics. *J. Vac. Sci. Technol.* , 28(2).
- Zimmerman, T. A. Demonstrations to Accompany Sciences. , John Wiley & Sons Inc..
- Zimmerman, T. A. Building Understanding. , John Wiley & Sons Inc.
- Schappe, R. S., Keeler, M. L., Zimmerman, T. A., Larsen, M., Feng, P., Nesnidal, R. C., Boffard, J. B., Walker, T. G., Anderson, L. W., & Lin, C. C. Methods of Measuring Electron-Atom Collision Cross Sections with an Atom Trap. *Avd. At. Mol. Opt. Phys.*, 48, 357-390.

### Abstract

- Kuchta, M. A., & Zimmerman, T. A. Three dimensional measurement and analysis of a mobile-bed stream model with the Microsoft KINECT sensor. *Geological Society of America Abstracts with Programs*, 45(7), 146.

### System Questions

- Zimmerman, T. A. (System Questions). , John Wiley & Sons Inc..

## Presentations

### Panelist

- Zimmerman, T. A. (August 25, 2016). Classroom Scholarship of Teaching and Learning. University of Wisconsin - Stout New Instructor Workshop, Menomonie, WI, United States.
- Zimmerman, T. A. (May 16, 2013). Hands-on applications of Angelo's teaching strategy. NTLC MayDay, Menomonie, WI.

### Workshop

- Zimmerman, T. A. (August 3, 2016). Using SageMathCloud in Undergraduate Physics. 2016 PICUP Summer Workshop, River Falls, United States.

### Oral Presentation

- Zimmerman, T. A., & Schmidt, L. J. (November 6, 2015). Career-Long Successful SoTLing. Teaching Champions Dialogue,
- Zimmerman, T. A., & Berg, R. (August 13, 2015). [How to Design and Deliver Recorded Mini-Lectures](#). Distance Teaching and Learning Conference, Madison, WI, United States.

### Short Talk at a Workshop

#### Poster

- Zimmerman, T. A. (July 29, 2014). Learning Objectives Based Assessment in a University Physics Course. American Association of Physics Teachers Summer Meeting, Minneapolis, MN.
- Zimmerman, T. A., & Hanna, G. (April, 2014). Student Course Performance with Objectives Based Assessing. OPID Summer Conference, Green Lake, WI.

- Kuchta, M. A., Nadziejka, B., & Zimmerman, T. A. (October, 2012). Box Kinect and Em2 stream table: Tools for analysis of Quaternary fluvial geomorphology. LU-R1 Research Project Poster Presentations,
- Ferina, J., Cochran, A., Patterson, M., Shield, J., Zimmerman, T. A., Sun, Z., Litwinovicz, V., & Rasmussen, P. (2008). In Situ L10 Ordering of FePt Clusters: Target Current and Electron Density. MRSEC Summer Research ,
- Larsen, M., Zimmerman, T. A., Boffard, J. B., Anderson, L. W., & Lin, C. C. (2002). use of an Atom trap for Measuring Electron-Impact Excitation Cross Sections Out of the Excited States of Rubidium. DAMOP01 Meeting of the American Physical Society, Williamsburg, VA.
- Zimmerman, T. A., Larsen, M., Boffard, J. B., Anderson, L. W., & Lin, C. C. (May, 2001). Measurement of Electron-impact Excitation Cross Sections Using Trapped RB Atoms. DAMOP01 Meeting of the American Physical Society, London, Canada.
- Keeler, M. L., Boffard, J. B., Zimmerman, T. A., Walker, T., Anderson, L. W., & Lin, C. C. (1999). Use of Trapped Rb Atoms as a Target for Measurements of Electron-Impact Cross Sections. Meeting of the American Physical Society, Atlanta, GA.

### Uncategorized

- Zimmerman, T. A., & Liss, M. (May, 2014). Analysis of Glass via SEM Methods. STEM Expo, Menomonie, WI.
- Sargeant, M., & Zimmerman, T. A. (May, 2014). Analysis of Human Hair. STEM Expo, Menomonie, WI.
- Zafft, & Zimmerman, T. A. (May, 2014). Analysis of Rock Climbing Equipment . STEM Expo, Menomonie, WI.
- Zimmerman, T. A., & Mackert, A. (May, 2014). Binary Space Partitioning Collision . STEM Expo, Menomonie, WI.
- Schindhelm, D., Boots, E., Glodowski, & Zimmerman, T. A. (May, 2014). Bullet Collision Detection in Games. STEM Expo, Menomonie, WI.
- Zimmerman, T. A., Bliss, M., Carlson, M., & Schimmel, C. (May, 2014). Collision Detection in 3 Dimensions Using Octrees. STEM Expo, Menomonie, WI.
- Binder, C., Oldenburg, K., Felton, R., & Zimmerman, T. A. (May, 2014). Comparing Orders of Runge-Kutta . STEM Expo, Menomonie, WI.
- Zimmerman, T. A., & Lampley, C. (May, 2014). Degradation of coins viewed under Scanning Electron Microscopes. STEM Expo, Menomonie, WI.
- Zimmerman, T. A., Nelson, J., Canada, R., & Polsean, E. (May, 2014). Detection of High Speed Collisions in Computer Simulations. STEM Expo, Menomonie, WI.
- Voeller, S., & Zimmerman, T. A. (May, 2014). Elemental Analysis of Silicone Bracelets Using Energy Dispersive X-Ray Spectroscopy. STEM Expo, Menomonie, WI.
- Felch, B., Tepp, D., Elliott, W., & Zimmerman, T. A. (May, 2014). Euler-Richardson Vs. Other Integration Methods. STEM Expo, Menomonie, WI.
- Zimmerman, T. A., & Zyla, L. (May, 2014). Impulse vs. Penalty Collision Resolution. STEM Expo, Menomonie, WI.
- Flaten, Z., & Zimmerman, T. A. (May, 2014). Qualitative Analysis of Biological Fixation Techniques. STEM Expo, Menomonie, WI.
- Flaherty, M., Loberger, M., Ryan, D., & Zimmerman, T. A. (May, 2014). Spatial Partitioning for Collision Detection. STEM Expo, Menomonie, WI.
- Zimmerman, T. A., Holcombe, A., Pendleton, J., & Redmann, M. (May, 2014). Spatial Partitioning with Octrees. STEM Expo, Menomonie, WI.
- Hillstead, J., & Zimmerman, T. A. (May, 2014). Stability of Silver Nanoparticles in a Colloidal Suspension over Given Time. STEM Expo, Menomonie, WI.
- Zimmerman, T. A., Berg, R., & Kirk, J. (January, 2014). Leveraging Recorded Mini-Lectures to Increase Student Learning. January Professional Development Week, Menomonie, WI.
- Zimmerman, T. A. (August, 2013). Why I SoTL. UW-Stout New Facility Workshop,

- Shafer, K., Karunanithy, C., & Zimmerman, T. A. (July, 2013). Comparative study on heating and cooling behaviors of sauce pans using thermal imaging. ASABE Annual International Meeting, Kansas City, MO.
- Zimmerman, T. A. (May 16, 2013). Adventures of a Scientist in SoTLand- UW-Stout's Own Version of SoTL. NTLC MayDay, Menomonie, WI.
- Zimmerman, T. A. (May 16, 2013). Communities of Practice- Unconventional applications: Learning Objectives Based Assessment panel facilitator. NTLC MayDay, Menomonie, WI.
- Zimmerman, T. A. (April, 2013). Student Use of Feedback in Learning Objectives Based Assessment . OPID Spring Conference , Madison, WI.
- Zimmerman, T. A. (January, 2013). Learning Objectives Based Assessment and Student Study Habits. American Association of Physics Teachers Winter Meeting , New Orleans, LA.
- Zimmerman, T. A. (2012). Clarifying Expectations: Enhancing Learner Engagement. UW System Women & Science Program Spring Conference, Wisconsin Dells, WI.
- Kuchta, M. A., & Zimmerman, T. A. (2012). Scaling the Fourth Dimension: Improving student knowledge development using high speed and time lapse video. UW-System Women & Science Program, Menomonie, WI.
- Zimmerman, T. A. (October, 2012). Learning Objectives Based Assessment. The Next Grading Paradigm, Wisconsin Area Physics Teachers Association Fall Meeting, Platteville, WI.
- Zimmerman, T. A. (September, 2012). Learning Objectives Based Assessment: Focusing Students on Content Mastery . Women & Science Opening Workshop for New STEM Educators,
- Zimmerman, T. A. (August, 2012). Clarifying Expectations: Enhancing Learner Engagement. New Faculty Workshop, Menomonie, WI.
- Peterson, J., Surdick, R., Schmidt, L. J., & Zimmerman, T. A. (May, 2012). Student Expectations & Motivations: What We Learn the 2nd Year. Nakatani Teaching and Learning Center Mayday Event,
- Zimmerman, T. A. (May, 2012). Calibrated Peer Review: Engaging Students in the Peer Review Process. UW System Women & Science Program Spring Conference, Wisconsin Dells, WI.
- Zimmerman, T. A., & Severson, L. (April, 2012). Computer Modeling of Magnetic Particles . Research Day,
- Zimmerman, T. A. (February 24, 2012). Calibrated Peer Review. Northwest Regional Showcase: Tools for Teaching, Eau Claire, WI.
- Zimmerman, T. A. (May, 2011). Calibrated Peer Review: Improving Student Writing While Minimizing Teacher Workload. MayDay,
- Zimmerman, T. A. (May, 2011). Intro to Calibrating Peer Review. Nakatani Teaching and Learning Center Mayday Event,
- Zimmerman, T. A. (January 19, 2011). Calibrated Peer Review: More Writing Assignments without More Work, NTLC Jan.. Professional Development Workshop Sessions,
- Zimmerman, T. A., Patterson, M., & Young, P. (October 27, 2007). Implementing Faculty-Flexible Lecture-Lab Instruction in Physics. Wisconsin Association of Physics Teachers, Milwaukee, WI.

## Applied Research

### Uncategorized

- **SageMath, Inc (Seattle, WA)**  
(June 2016 - Present)
- **(University of Nebraska-Lincoln)**  
(June 2009 - July 2009)
- **(University of Nebraska-Lincoln)**  
(June 2008 - August 2008)
- **(University of Wisconsin Madison, Madison, WI)**  
(May 2007 - January 2008)
- **(University of Wisconsin Madison, Madison, WI)**  
(August 1997 - August 2003)

- **(University of Minnesota, Minneapolis, MN)**  
(August 1995 - August 1997)
- **(Lawrence Universi, Appleton, WI)**  
(August 1991 - May 1992)
- **(State University of New York-Stony Brook, Stony Brook, NY)**  
(June 1991 - August 1991)
- **(University of Minnesota, Minneapolis, MN)**  
(June 1990 - August 1990)

## Grants, Contracts, and Sponsored Research

### Grant

- Zimmerman, T. A. UW-Stout Development Grant to attend Teaching Professor Conference in SP14. (Not Funded).
- Zimmerman, T. A. Clarifying Expectations to Improve the Learner-Instructor Working Relationship: A Conduit for Enhancing Learner Engagement, Slef-Efficacy, and Metacognition. Sponsored by OPID, \$31969 (Funded).
- Zimmerman, T. A. Leveraging Technology to Meet Classroom Challenges. Sponsored by UW-Systems Curriculum Redesign Grant Program, \$5939 (Funded).
- Zimmerman, T. A., & Basyrov, A. K. WeBWork Adoption in Physics Course. Sponsored by DUE-TUES Type 1 Project, \$198761.
- Klefstad, J., Broeren, C., Bendel, C., Ghenciu, P. I., Little, A. M., & Zimmerman, T. A. Implementation, evaluation, and assessment of the Common Core Standards utilizing a professional learning community (PLC) framework in small, rural school districts. Sponsored by Wisconsin ESEA Improving Teacher Quality Program, \$374521 (Not Funded).
- Zimmerman, T. A. Blue Computational Facilities: Modeling Magnetic Properties of Nanomagnetic Materials. Sponsored by University of Wisconsin-Stout Faculty Research Initiative Grant (Not Funded).
- Zimmerman, T. A. Flexible Physics Instruction in an Integrated Lecture/Lab Environment. Sponsored by Co-PI on NSF Course Curriculum and Laboratory Improvement Grant, \$200000 (Funded).

### Contract

- Zimmerman, T. A., & Mccullough, L. E. Attendance and Presentation at the National Meeting of the American Association of Physics Teachers. Sponsored by UW-Stout Professional Development Grant (Not Funded).

## Reviewer / Editor

### Reviewer, Conference

- **Wisconsin Space Conference Journal** (2014 - 2015)

### Reviewer, Journal

- **Journal of Student Research** (2012)

## Awards, Fellowships, Honors, and Scholarships

### Fellowship

- Wisconsin Teaching Fellow, University of Wisconsin Office of Professional and Instructional Development (2013)

## Professional Memberships

- American Association of Physics Teachers

- American Physical Society (APS)
- Wisconsin Association of Physics Teachers

## Service

### Department / School

- **Committee Chair**, Department of Chemistry and Physics Personnel Department (August 2016 - Present)
- **Advisory Board**, Applied Science Program (2014 - Present)
- **Advisory Board**, Applied Mathematics and Computer Science Program (2013 - Present)
- **Committee Member**, Physics Faculty Hiring Committee (2013 - Present)
- **Committee Member**, UW-Stout Physics AP Exam Ad-Hoc Committee (2012 - Present)
- **Faculty Mentor** (2011 - Present)
- **Committee Member**, Physics Curriculum Committee (2010 - Present)
- **Committee Member**, University Physics Textbook Selection Ad-Hoc Committee (2010 - Present)
- **Committee Member**, Geometric Algebra Faculty Reading Group (2015)
- **Stout Curriculum Revisions**, University Physics I (2014)
- **Committee Member**, Lab Manager Hiring Committee (2012)
- **Committee Member**, MATC Departmental Budget Committee (2006 - 2008)
- **Committee Member**, MATC Departmental Curriculum Committee (2006 - 2008)
- **Member**, MATC Center on New and Converging Technologies (2005 - 2008)
- **Committee Member**, MATC Departmental Assessment Committee (2005 - 2008)

### College

- Applied Optics and Photonics (PHYS 335) (2015 - Present)
- **Developer**, Classical Mechanics (PHYS 381) (2015 - Present)
- **Developer**, Electricity and Magnetism (PHYS 382) (2015 - Present)
- **Developer**, Modern Physics (PHYS 283) (2015 - Present)
- **Developer**, Quantum Mechanics (PHYS 383) (2015 - Present)
- University Physics I (PHYS-281) (2015 - Present)
- **Committee Member**, Student Technology Fee Committee (2012 - 2014)
- Counseling and Guidance course (June 2006)
- Educational Psychology Course (June 2006)
- Teaching in Higher Education, Graduate 8100, university of Minnesota (1997)
- Techniques of Instruction, Curriculum and Instruction 5156, University of Minnesota (1996)

### University

#### UW Stout

- **Advisory Board Member**, Nakatani Teaching and Learning Center (2012 - Present)
- **Committee Member**, Nanoscience and Materials Concentration Committee (2010 - Present)
- **Committee Member**, Personnel Policies Committee (August 2015 - July 2019)
- **Committee Member**, Faculty and Academic Staff Professional Development Grants Review Committee (August 24, 2016 - May 31, 2018)
- **Committee Chair**, All University Associate Professor Promotion Committee (2016 - 2017)
- **Committee Member**, Positive Action, Ethics and Competition Review Committee (2016 - 2017)
- **Committee Vice Chair**, Personnel Policies Committee (September 2016 - May 2017)
- **Chairperson**, All College Associate Professor Promotion Committee (September 2016 - January 2017)

- **Committee Member**, Emerging Instructional Technologies Committee (2012 - 2016)
- **Representative**, Wisconsin Space Grant Consortium Representative (2011 - September 30, 2016)
- **Developer**, Online Teaching (January 22, 2015)
- **Committee Member**, January Professional Development Week Committee (2012 - 2014)
- **Note taker**, Engagement Session (2013)
- **Participant**, (2012 - 2013)

### Professional

- **Committee Member**, Prior Learning Assessment Committee (2011 - 2014)
- **Member**, NTLC Assessment Sharing Community (2013)
- **Member**, Wisconsin Teaching Fellows & Scholars Summer Institute (July 2013)
- **Member**, OPID Faculty College (May 2012 - May 2013)
- NTLC Sharing Community on Calibrated Peer Review (2011)
- **Member**, Council for Undergraduate Research (1992)

### Community

- **Member**, LOBA Community of Practice (2012 - 2013)
- Learning Objectives Based Assessment Sharing Community (2011)