

Yevgeniya V. Zastavker

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I. Education

MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT), Cambridge, MA

1995 – 2001. Ph.D. in the field of Biological Physics. Thesis title: *Self-Assembly of Helical Ribbons from Chiral Amphiphiles*. Research supervisor: George B. Benedek (benedek@mit.edu).

YALE UNIVERSITY, New Haven, CT

1991-1995. B.S. in Physics. Thesis title: *Optical Properties of Polymer Gel Dosimeter*. Research supervisors: Marek J. Maryanski and John C. Gore.

KIEV PEDAGOGICAL COLLEGE No. 1, Kiev, Ukraine

1987-1989. Study of Pedagogy, Psychology, and Methodology of teaching of Mathematics, Russian and Ukrainian languages and literature, Science, Music, and Physical education to elementary school students. Studies terminated due to emigration to the U.S.A.

KIEV EVENING MUSICAL SCHOOL No. 9, Kiev, Ukraine

1979 – 1986. Study of fortepiano, musical theory, musical history, and choir. Acquired Red Diploma of Graduation with Honors.

II. Professional Appointments and Experience

Franklin W. Olin College Of Engineering	Associate Professor	2007 – present
Worcester Polytechnic Institute	Affiliate Associate Professor	2009 – present
Franklin W. Olin College Of Engineering	Assistant Professor	2002 – 2007
Wellesley College	Visiting Assistant Professor	2000 – 2002
Massachusetts Institute of Technology	Visiting Scientist	2001 – 2002
Massachusetts Institute of Technology	Physics Curriculum Consultant (MITES-SEED)	2001 – 2002
Massachusetts Institute of Technology	Senior Physics Consultant (PIVOT)	1999 – 2000
Massachusetts Institute of Technology	Physics Instructor (MITES)	1998 – 2001
Massachusetts Institute of Technology	Physics Instructor (MITES)	2005
Massachusetts Institute of Technology	Research Assistant	1995 – 2001
Yale University	Research Assistant	1995
University of Chicago	Research Assistant	1994
Yale University	Research Assistant	1993

III. Research Interests and Experience

(i) Science/engineering education with particular emphasis on innovative pedagogical and curricular practices (e.g., project-based learning and motivation) at the intersection with gender and diversity studies; and (ii) investigation of physico-chemical properties of biological and synthetic self-assembling membranes with significant biomedical and industrial applications.

A. Scholarly Work in Print

A.1. Refereed Publications in Print

A.1.1 Educational/Gender Studies

- Y. V. Zastavker** and V. Darer, “Beyond Reflection: Using Discourse Analysis to Understand Your Classroom Culture,” *44th ASEE/IEEE Frontiers in Education Conference*, October 2014¹
- A. Coppola**², **Y. V. Zastavker**, J. M. Goodman, R. Christianson, **A. LoVerso**, **C. Auerswald**, **D. Lee**, “Making Teachers from Students: How Learning Environments May Foster An Interest in Teaching,” *44th ASEE/IEEE Frontiers in Education Conference*, October 2014
- J. D. Stolk, **Y. V. Zastavker**, A. Dillon, and M. D. Gross, “To what extent can instructors influence student motivation in the classroom?” *44th ASEE/IEEE Frontiers in Education Conference*, October 2014
- R. Eggert**, **A. Joshi**, **S. Mehrotra**, **Y. V. Zastavker**, V. Darer, “Using Discourse Analysis to Understand “Failure Modes” of Undergraduate Engineering Teams,” *44th ASEE/IEEE Frontiers in Education Conference*, October 2014
- J. Burger**, **P. Cote**, **N. Dhanushkodi**, J. D. Stolk, and **Y. V. Zastavker**, “Transforming Challenges into Reflections: Enabling Metacognitive Development,” *44th ASEE/IEEE Frontiers in Education Conference*, October 2014
- D. Chachra, L. A. Stein, C. Lynch, **Y. V. Zastavker**, and A. Sarang-Sieminski, “We’re an Engineering School with Gender Parity - Now What?” *7th Symposium on Engineering and Liberal Education*, June 2014
- L. A. Stein, D. Chachra, C. Lynch, **Y. V. Zastavker**, and A. Sarang-Sieminski, “Rendering Visible: Gender and Student Experience at Olin College,” *32nd Annual ACM CHI Conference on Human Factors in Computing Systems*, April 2014
- Y. V. Zastavker**, V. Darer, and **A. Kessler**, “Improving Classroom Culture: Discourse Analysis,” *43rd ASEE/IEEE Frontiers in Education Conference*, October 2013
- J. I. Perera**, **B. T. Quinlivan**, and **Y. V. Zastavker**, “Faculty Perceptions on Undergraduate Engineering Education in First-Year Engineering, Physics, and Mathematics Courses,” *Proc. 2013 Annual ASEE Conference*, June 2013
- G. Pleiss**, **Madeline Perry**, and **Y. V. Zastavker**, “Student Self-Efficacy in Introductory Project-Based Learning Courses,” *42nd ASEE/IEEE Frontiers in Education Conference*, October 2012
- D. Chachra, L. Stein, A. Sarang-Sieminski, C. Lynch, and **Y. V. Zastavker**, “An Interactive Exploration of Gender and Engineering: Unpacking the Experience,” *42nd ASEE/IEEE Frontiers in Education Conference*, October 2012
- E. Towers**, **J. Simonovich**, and **Y. V. Zastavker**, “Students’ Perceptions of the Engineering Profession and Implications for Interest in the Field,” *Proc. 41st ASEE/IEEE Frontiers in Education Conference*, October 2011
- C. Canfield**, **B. Strachota**, and **Y. V. Zastavker**, “Self-Directed Learning Contention: Student and Faculty Views,” *Proc. 2011 Annual ASEE Conference*, June 2011
- Y. V. Zastavker**, D. Chachra, C. Lynch, A. L. Sarang-Sieminski, and L. A. Stein, “Gender Schemas, Privilege, Micro-messaging, and Engineering Education: Practical Lessons from Theory,” *Proc. 2011 Annual ASEE Conference*, June 2011
- C. Canfield** and **Y. V. Zastavker**, “Achievement Goal Theory: A Framework for Implementing Group Work and Open-Ended Problem Solving,” *Proc. 40th ASEE/IEEE Frontiers in Education Conference*, October 2010
- N. Tatar, D. Chachra, **Y. V. Zastavker**, and J. Stolk, “Work in Progress – Using Video and Self-Reflection to Enhance Undergraduate Teams,” *Proc. 40th ASEE/IEEE Frontiers in Education Conference*, October 2010
- C. Canfield** and **Y. V. Zastavker**, “Mathematics and Physics Faculty Conceptions of Teaching in a First-Year Integrated Project-Based Engineering Curriculum,” *Proc. 2009 Annual ASEE Conference*, June 2009

¹ All entries designated in this color reflect activities since January 1st, 2014, or those that did not appear in the previous version of the CV.

² Key to author list: **Bold** -Yevgeniya V. Zastavker; **Bold Italicized** – Y. V. Zastavker’s Research Student

- C. Canfield** and **Y. V. Zastavker**, "Faculty on Integrated Project-Based Learning," *Academic Exchange Quarterly*, 13(1): 100-107, 2009
- C. D. Laughlin**, **Y. V. Zastavker**, and M. Ong, "Is Integration Really There? Students' Perceptions of Integration in Their Project-Based Curriculum," *Proc. 37th ASEE/IEEE Frontiers in Education Conference*, October 2007
- Y. V. Zastavker**, J. D. Crisman, M. Jeunnette, and B. S. Tilley, "Kinetic Sculptures: A Centerpiece Project Integrated with Mathematics and Physics," *Int. J. Eng. Educ.*, **22**(5): 1031-1042, 2006
- Y. V. Zastavker**, M. Ong, and **L. Page**, "Women in Engineering: Exploring the Effects of Project-Based Learning in a First-Year Undergraduate Engineering Program," *Proc. 36th ASEE/IEEE Frontiers in Education Conference*, October 2006
- M. Somerville, D. Anderson, H. Berbeco, J. R. Bourne, J. Crisman, D. Dabby, H. Donis-Keller, S. S. Holt, S. Kerns, D. V. Kerns, Jr., R. Martello, R. K. Miller, M. Moody, G. Pratt, J. C. Pratt, C. Shea, S. Schiffman, S. Spence, L. A. Stein, J. D. Stolk, B. D. Storey, B. Tilley, B. Vandiver, and **Y. Zastavker**, "The Olin Curriculum: Thinking Toward the Future," *IEEE Transactions on Education*, **48**(1): 198-205, 2005
- M. Somerville, D. Chachra, J. Chambers, E. Cooney, K. Dorsey, J. B. Geddes, G. Pratt, K. Rivard, A. Schaffner, L. A. Stein, J. Stolk, S. Westwood, and **Y. Zastavker**, "Work in Progress - A Provisional Competency Assessment System," *Proc. 35th ASEE/IEEE Frontiers in Education Conference*, October 2005
- J. Stolk and S. Spence, "Olin College: It's Alive," *Proc. 33rd ASEE/IEEE Frontiers in Education Conference*, November 2003

A.1.2 Physics

- B. Smith, **Y. V. Zastavker**, G. B. Benedek, "Tension-induced straightening transition of self-assembled helical ribbons," *Phys. Rev. Lett.*, **87**(27): 278101-(1-4), 2001
- Y. V. Zastavker**, N. Asherie, A. Lomakin, J. Pande, J. M. Donovan, J. M. Schnur, G. B. Benedek, "Self-assembly of helical ribbons," *Proc. Nat. Acad. Sci.*, **96**(14): 7883-7887, 1999
- M. J. Maryanski, **Y. V. Zastavker**, J. C. Gore, "Radiation dose distributions in three dimensions from tomographic optical density scanning of polymer gels .2. Optical properties of the BANG polymer gel," *Phys. Med. Bio.*, **41** (12): 2705-2717, 1996
- S. Husmann, D. S. Jin, **Y. V. Zastavker**, T. F. Rosenbaum, X. Yao, J. M. Honig, "Dynamical signature of the Mott-Hubbard transition in Ni(S,SE)(2)," *Science*, **274** (5294): 1874-1876, 1996

A.2. Non-Refereed Publications in Print

A.2.1 Educational/Gender Studies

- C. Lynch, A. Sarang-Sieminski, M. Taylor, J. Tsai, and **Y. V. Zastavker**, "Needham column: 'Robotics' story a call to action," *Needham Times*, February 1, 2012
- Y. V. Zastavker**, *et al.*, "Women in Physics in the United States," *AIP Conf. Proc.*, **1119**(1): 189-190, 2009
- Y. V. Zastavker**, E. H. Simmons, "The Third International Conference on Women in Physics: Lessons Learned," *CSWP Gazette, The Newsletter of the Committee on the Status of Women in Physics of the American Physical Society*, **28**(1), Spring 2009
- Y. V. Zastavker**, P. Gueye, K. M. Mack, R. Ivie, E. H. Simmons, L. F. Santos, L. J. Martínez-Miranda, A. Bienenstock, J. C. Blickenstaff, K. R. Horton, A. J. MacLachlan, N. Berrah, B. K. Hartline, "Women in Physics in the United States: Reporting on Past and Looking at the Future," *CSWP Gazette, The Newsletter of the Committee on the Status of Women in Physics of the American Physical Society*, **28**(1), Spring 2009
- Y. V. Zastavker**, "Guest Editorial: Stand by Me," *CSWP Gazette, The Newsletter of the Committee on the Status of Women in Physics of the American Physical Society*, **28**(1), Spring 2009
- Y. V. Zastavker**, D. Chachra, R. Christianson, A. L. Sieminski, "Success Story: Four Women, One Victory," *The Newsletter of the Committee on the Status of Women in Physics of the American Physical Society*, **27**(2), Fall 2008

- B. L. Whitten, B. K. Hartline, T. Daniels-Race, and **Y. V. Zastavker**, “What Can We Learn from International Women in Physics? Report on the Second International Conference on Women in Physics,” *SWE Magazine of the Society of Women Engineers*, **52**(1): 62-65, Winter 2006
- K. S. Budil, K. E. Daniels, T. Daniels-Race, M. Eblen-Zayas, B. K. Hartline, R. Hazeltine, A. K. Hodari, K. R. Horton, R. Ivie, L. Kay, L. J. Martínez-Miranda, A. Michelman-Ribeiro, M. Ong, J. I. Rudati, J. Valentine, B. Whitten, E. Williams, and **Y. V. Zastavker**, “Women in Physics in the United States: A Progress Report,” *AIP Conf. Proc.*, **795**(1): 175-178, 2005
- M. Urry, S. Tobias, K. Budil, H. Georgi, K. Lang, D. Li, L. McNeil, P. Saeta, J. Sokoloski, S. Stephenson, A. Venskatesan, and **Y. V. Zastavker**, “Women in Physics: The IUPAP International Conference on Women in Physics,” *AIP Conf. Proc.*, **628**(1): 237-238, 2002

A.2.2 Physics

None at this time

B. Scholarly Work under Review or in Press

B.1. Refereed Manuscripts under Review or in Press

- Y. V. Zastavker**, J. Goodman, and R. Christianson, “Defining Moments: The Link Between Definitions and Desires,” 45th ASEE/IEEE Frontiers in Education Conference, October 2015

B.2. Non-Referred Manuscripts in Press

None at this time

C. Scholarly Work under Preparation

C.1. Refereed Manuscripts under Preparation

C.1.1 Educational/Gender Studies

- E. E. Blair**, **R. B. Miller**, M. Ong, and **Y. V. Zastavker**, “Faculty Constructions of Gender Difference in Undergraduate Science, Technology, Engineering, and Mathematics Courses,” to be submitted to *Journal of Higher Education* on May 1, 2015
- J. I. Perera**, **B. T. Quinlivan**, and **Y. V. Zastavker**, “Faculty Perceptions on Undergraduate Engineering Education in First-Year Engineering, Physics, and Mathematics Courses,” to be submitted to *Journal of Engineering Education*
- G. Pleiss**, **Madeline Perry**, and **Y. V. Zastavker**, “Student Self-Efficacy in Introductory Project-Based Learning Courses,” to be submitted to *Journal of Engineering Education*
- J. A. Simonovich**, **E. Towers**, and **Y. V. Zastavker**, “Self-Directed Learner Development Through Project-Based Learning Environment: A Comparative Study of Engineering and Physics Courses,” to be submitted to *Journal of College Science Teaching*
- J. Baca**, **L. Tseng**, **B. L. Strachota**, and **Y. V. Zastavker**, “Effects of Students’ Course Conceptions on Role Differentiation within Project- Based Group Work,” to be submitted to *Journal of Engineering Education*
- J. Tse**, **Z. Borden**, **M. Cavolowski**, G. Pratt, and **Y. V. Zastavker**, “Becoming an Engineer through an Independent Study: An Experiment in Force Plate Building,” to be submitted to *International Journal of Engineering Education*
- J. McQuaid**, M. Ong, and **Y. V. Zastavker**, “Gender and Classroom Isolation in Engineering Education,” to be submitted to *Gender and Education*
- K. Cummings**, M. Ong, and **Y. V. Zastavker**, “The Girls and the Gods: Perceptions of Gender at an Engineering College,” to be submitted to *Journal of Engineering Education*

C.1.2 Physics

- G. Pleiss, O. Zadik, and Y. V. Zastavker**, “An Analysis of the Inversion of the Tippie Top Using Equilibria Stability,” to be submitted to *Mathematical Problems in Engineering*
- Y. A. Miroshnikova, M. Elsenbeck, G. Ou, K. Kashuri, G. S. Iannacchione, Y. V. Zastavker**, “Pseudo-Phase Diagram of Microstructures in Chemically Defined Lipid Concentrates by Optical Microscopy and High-Resolution Calorimetry,” to be re-submitted to *Phys. Rev. E*, after the 1st review
- B. S. Tilley, Y. V. Zastavker, C. D. Laughlin, and A. Dorsk**, “Quasi-steady slider-bearing motion on thin liquid films,” *J. Fluid Mech.*, 2006: rejected from the “Fast Track” -- may not be re-submitted to the “Regular Track,” 2011, after 2nd review; resubmit elsewhere

C.2. Non-Referred Manuscripts under Preparation

None at this time

D. Presentations of Scholarly Work**D.1. Conference Presentations with Referred Published Manuscripts³****D.1.1 Educational/Gender Studies**

- Y. V. Zastavker*** and V. Darer*, “Beyond Reflection: Using Discourse Analysis to Understand Your Classroom Culture,” 44th ASEE/IEEE *Frontiers in Education Conference*, Madrid, Spain, October 2014
- A. Coppola,* Y. V. Zastavker, J. M. Goodman, R. Christianson, A. LoVerso,* C. Auerswald,* D. Lee,*** “Making Teachers from Students: How Learning Environments May Foster An Interest in Teaching,” 44th ASEE/IEEE *Frontiers in Education Conference*, Madrid, Spain, October 2014
- J. D. Stolk,* Y. V. Zastavker,* A. Dillon, and M. D. Gross**, “To what extent can instructors influence student motivation in the classroom?” 44th ASEE/IEEE *Frontiers in Education Conference*, Madrid, Spain, October 2014
- R. Eggert, A. Joshi,* S. Mehrotra, Y. V. Zastavker, V. Darer**, “Using Discourse Analysis to Understand “Failure Modes” of Undergraduate Engineering Teams,” 44th ASEE/IEEE *Frontiers in Education Conference*, Madrid, Spain, October 2014
- J. Burger,* P. Cote,* N. Dhanushkodi,* J. D. Stolk, and Y. V. Zastavker**, “Transforming Challenges into Reflections: Enabling Metacognitive Development,” 44th ASEE/IEEE *Frontiers in Education Conference*, Madrid, Spain, October 2014
- D. Chachra,* L. A. Stein, C. Lynch, Y. V. Zastavker, and A. Sarang-Sieminski**, “We’re an Engineering School with Gender Parity - Now What?” 7th *Symposium on Engineering and Liberal Education*, Schenectady, NY, June 2014
- L. A. Stein, D. Chachra,* C. Lynch, Y. V. Zastavker, and A. Sarang-Sieminski**, “Rendering Visible: Gender and Student Experience at Olin College,” 32nd *Annual ACM CHI Conference on Human Factors in Computing Systems*, Toronto, Canada, April 2014
- J. I. Perera,* B. T. Quinlivan,* and Y. V. Zastavker**, “Faculty Perceptions on Undergraduate Engineering Education in First-Year Engineering, Physics, and Mathematics Courses,” 2013 *Annual ASEE Conference*, Atlanta, GA, June 2013
- G. Pleiss,* Madeline Perry,* and Y. V. Zastavker**, “Student Self-Efficacy in Introductory Project-Based Learning Courses,” 42nd ASEE/IEEE *Frontiers in Education Conference*, October 2012

³ Associated but separate from the presentation process published manuscripts are noted in Section A.1 above. Speakers are denoted with *.

- D. Chachra,* L. Stein,* A. Sarang-Sieminski, C. Lynch,* and **Y. V. Zastavker,*** “An Interactive Exploration of Gender and Engineering: Unpacking the Experience,” *42nd ASEE/IEEE Frontiers in Education Conference*, Seattle, WA, October 2012
- E. Towers,* J. Simonovich,** and **Y. V. Zastavker,** “Students’ Perceptions of the Engineering Profession and Implications for Interest in the Field,” *41st ASEE/IEEE Frontiers in Education Conference*, Rapid City, SD, October 2011
- C. Canfield, B. Strachota,** and **Y. V. Zastavker,*** “Self-Directed Learning Contention: Student and Faculty Views,” *2011 Annual ASEE Conference*, Vancouver, CN, June 2011
- Y. V. Zastavker,*** D. Chachra,* C. Lynch, A. L. Sarang-Sieminski, and L. A. Stein,* “Gender Schemas, Privilege, Micro-messaging, and Engineering Education: Practical Lessons from Theory,” *2011 Annual ASEE Conference*, June 2011, Vancouver, CN
- C. Canfield** and **Y. V. Zastavker,*** “Achievement Goal Theory: A Framework for Implementing Group Work and Open-Ended Problem Solving,” *40th ASEE/IEEE Frontiers in Education Conference*, Arlington, VA, October 2010
- N. Tatar,* D. Chachra, **Y. V. Zastavker,** and J. Stolk, “Work in Progress – Using Video and Self-Reflection to Enhance Undergraduate Teams,” *40th ASEE/IEEE Frontiers in Education Conference*, Arlington, VA, October 2010
- C. Canfield*** and **Y. V. Zastavker,** “Mathematics and Physics Faculty Conceptions of Teaching in a First-Year Integrated Project-Based Engineering Curriculum,” *2009 Annual ASEE Conference*, Austin, TX, June 2009
- C. D. Laughlin, Y. V. Zastavker,*** and M. Ong, “Is Integration Really There? Students’ Perceptions of Integration in Their Project-Based Curriculum,” *2007 ASEE/IEEE Frontiers in Education Conference*, Milwaukee, WI, October 2007
- Y. V. Zastavker,** M. Ong,* and **L. Page,** “Women in Engineering: Exploring the Effects of Project-Based Learning in a First-Year Undergraduate Engineering Program,” *36th ASEE/IEEE Frontiers in Education Conference*, San Diego, CA, October 2006
- M. Somerville,* D. Chachra, J. Chambers, E. Cooney, K. Dorsey, J. B. Geddes, G. Pratt, K. Rivard, A. Schaffner, L. A. Stein, J. Stolk, S. Westwood, and **Y. Zastavker,** “Work in Progress - A Provisional Competency Assessment System,” *35th ASEE/IEEE Frontiers in Education Conference*, Indianapolis, IN, October 2005
- J. Stolk,* S. Spence,* and **Y. V. Zastavker,*** “Olin College: It’s Alive,” *33rd ASEE/IEEE Frontiers in Education Conference*, Boulder, CO, November 2003

D.1.2 Physics

Not applicable

D.2. Referred Conference Presentations without Published Manuscripts⁴

D.2.1 Educational/Gender Studies

- Y.-H. Chen,* M. Lidrbauch, R. Siegel,* Y. V. Zastavker,** J. D. Stolk, A. Dillon, and M. Gross, “How Do STEM Students Find Relevance in their Learning?” *2015 National Association for Research in Science Teaching (NARST)*, Chicago, IL, April 2015
- A. Joshi,* A. Tau,* R. Eggert,* Y. V. Zastavker,** and V. Darer, “Using Discourse Analysis and Self-Reflection to Improve Undergraduate Engineering Team Experiences,” *2015 National Association for Research in Science Teaching (NARST)*, Chicago, IL, April 2015
- L. A. Stein,* D. Chachra,* C. Lynch, A. Sarang-Sieminski, **Y. V. Zastavker,** “Gender and Computing: An Interactive Exploration of Student Experience,” *Australasian Women in Computing*, Auckland, New Zealand, January 2014

⁴ Presentations selected for this section are subject to an abstract, manuscript, or poster peer-review process; the resulting manuscripts are distributed only to conference attendees. In the case of NARST and AERA conferences, the peer-review process is very rigorous and requires possible multiple iterations to be invited to present.

- L. A. Stein,* D. Chachra,* **Y. V. Zastavker**, C. Lynch, and A. L. Sarang-Sieminski. “An Interactive Exploration of Gender and Computing: Unpacking the Student Experience,” special session at *ACM Symposium on Computer Science Education (SIGCSE)*, Denver, Colorado, March, 2013
- D. Chachra,* C. Lynch,* A. L. Sarang-Sieminski, L. A. Stein,* and **Y. V. Zastavker**, “An Exploration of Gender and Engineering,” *Active Learning in Engineering (ALE) Workshop 2012*, Copenhagen, Denmark, June, 2012
- J. A. Simonovich**,* **E. Towers**, and **Y. V. Zastavker**, “Self-Directed Learner Development Through Project-Based Learning Environment: A Comparative Study of Engineering and Physics Courses,” *2011 National Association for Research in Science Teaching (NARST)*, Orlando, FL, April 2011
- B. Strachota**,* **C. Canfield**, and **Y. V. Zastavker**, “Self-Directed Learning Contention: Faculty Views, Student Perceptions, and Classroom Practices,” *2011 New England American Society for Engineering Education (ASEE) Conference*, W. Hartford, CT, April 2011
- G. Pleiss*** and **Y. V. Zastavker**, “The Effect of Students’ Perception of Course Scaffolding on Self-Efficacy Beliefs,” *2011 New England American Society for Engineering Education (ASEE) Conference*, W. Hartford, CT, April 2011
- L. Tseng**,* **J. Baca**, and **Y. V. Zastavker**, “Effects of Classroom Structure on Functional Role Specialization in Engineering Classrooms,” *2011 New England American Society for Engineering Education (ASEE) Conference*, W. Hartford, CT, April 2011
- Y. V. Zastavker**, D. Chachra,* L. A. Stein,* A. L. Sieminski, and C. Lynch, “Who You Are Is What You Teach: Gender, Micromessaging, and Engineering Education,” *Active Learning in Engineering Education (ALE) Workshop 2011*, Santiago, Chile, January 2011
- J. A. Simonovich**,* **E. Towers**,* and **Y. V. Zastavker**, “The skill-set perception gap: A case study of first-year engineering students,” *2010 New England American Society for Engineering Education (ASEE) Conference*, Boston, MA, April 2010
- E. E. Blair**,* **R. B. Miller**,* M. Ong, **Y. V. Zastavker**, “Faculty Constructions of Gender Difference in Undergraduate Science, Technology, Engineering, and Mathematics Courses,” *American Educational Research Association (AERA) Annual Meeting*, San Diego, CA, April 2009
- J. Baca*** and **Y. V. Zastavker**, “Effects of Students’ Course Conceptions on Role Differentiation within Project-Based Group Work,” *2009 New England American Society for Engineering Education (ASEE) Conference*, Bridgeport, CT, April 2009
- C. Canfield*** and **Y. V. Zastavker**, “Faculty Talk: Implementing an Integrated First-Year Project-Based Engineering Curriculum,” *2008 New England American Society for Engineering Education (ASEE) Conference*, West Point, NY, March 2008
- C. D. Laughlin**,* M. Ong, and **Y. V. Zastavker**, “Project-Based Learning: Effects of Thematic Content, Integration, and Hands-On Activities on Student Engagement and Motivation,” *2007 New England American Society for Engineering Education (ASEE) Conference*, Kingston, RI, April 2007
- Y. V. Zastavker**,* **M. Ong**, and **L. Page**, “Project-Based Learning in an Undergraduate Engineering Program: Exploring Student Engagement, Interest, and Motivation in Introductory Physics, Mathematics, and Engineering,” *2007 National Association for Research in Science Teaching (NARST)*, New Orleans, LA, April 2007
- M. Ong,* **Y. V. Zastavker**, and **L. Page**, “Engaging Undergraduates in Introductory Science and Engineering Courses: A Pilot Exploration of Project-Based Learning (PjBL),” *2007 American Educational Research Association (AERA) Chicago*, IL, April 2007
- K. F. Cummings**,* **C. D. Laughlin**,* **A. E. Lee**, **J. Y. Tsai**, **Y. V. Zastavker**, and M. Ong, “They Speak: One-on-One Interviews With Female Engineering Students on Project-Based Learning,” *2006 New England American Society for Engineering Education (ASEE) Conference*, Worcester, MA, March 2006
- Y. V. Zastavker**,* M. Ong, and **Y.-J. Son**, “Factors of Satisfaction and Persistence among First-Year Women Undergraduate Engineering Majors,” *2005 National Association for Research in Science Teaching (NARST)*, Dallas, TX, April 2005
- M. Ong,* **Y. V. Zastavker**, and **Y.-J. Son**, “Recruiting and Retaining Women and Minorities in Science and Engineering through Project-Based Learning,” *2005 American Educational Research Association (AERA)* Montreal, Canada, April 2005

Y. V. Zastavker,* “The Status of Women in Physics -- What, Why, and How to Change,” *2002 National Association for Research in Science Teaching (NARST)*, New Orleans, LA, April 2002

D.2.2 Physics

Not applicable

D.3 Refereed Conference Presentations in Press or under Review

D.3.1 Educational/Gender Studies

None at this time

D.3.2 Physics

None at this time

D.4. Invited Publications

D.4.1 Educational/Gender Studies

M. Atwater with **Y. V. Zastavker**, C. Lynch, A. Sarang-Sieminski, “Engineering Education Perspectives: Olin College on Gender Diversity.” *engineering.com*. November 2014. Accessed April 20, 2015. <http://www.engineering.com/Education/EducationArticles/ArticleID/8993/Engineering-Education-Perspectives-Olin-College-on-Gender-Diversity.aspx>

D.4.2 Physics

None at this time

D.5. Invited Conference, Colloquium, and Workshop Presentations

D.5.1 Educational/Gender Studies

Y. V. Zastavker* and V. Darer,* (with O. Fernandez* and N. Karst*) “Understanding Classroom Interactions Through Discourse Analysis,” *The Three-College Collaboration Workshop*, Olin College, Needham, MA, January 2013

Y. V. Zastavker,* “PAGE Symposium: Forging K12-Higher Ed Collaborations,” *PAGE Symposium*, PTC,[®] Needham, MA, April 2012

Y. V. Zastavker,* “Using Olin Curriculum to Address NAE Grand Challenges through Grand Challenge Scholars Program,” *Grand Challenge Scholars Program Workshop: Attract, Retain and Prepare Your Students to Excel in the 21st Century*, Advanced Micro Devices, Inc., Austin, TX, July 2011

Y. V. Zastavker,* “GTEC Pilot Program: Newburyport High School – Olin College – PTC Collaboration,” *GTEC Annual Symposium*, F. W. Olin College of Engineering, Needham, MA, May 2011

Y. V. Zastavker,* “Millennial Challenges/Grand Challenges and Grand Challenge Scholars Program,” *The Three-College Collaboration Workshop*, Babson College, Wellesley, MA, January 2011

L. A. Stein,* J. Townsend,* and **Y. V. Zastavker,*** “Curriculum Design for iCons,” workshop co-leader, University of Massachusetts, Amherst, MA, June 2010

Y. V. Zastavker,* “Olin College Grand Challenge Scholars Program,” *Workshop on Developing a National Network of Grand Challenge Scholars Programs*, F. W. Olin College of Engineering, Needham, MA, April 2010

Y. V. Zastavker,* “Phase Transitions: Life of Membranes and Membranes of Life,” Conference for Undergraduate Women in Physics, Yale University, New Haven, CT, January 2010

- Y. V. Zastavker,*** “Women in STEM: Adapting Pedagogies and Transforming Curricula,” *MA STEM Summit VI: Ensuring the Pipeline: Preparing Massachusetts Students for Careers in Science, Technology, Engineering, and Mathematics*, Sturbridge, MA, October, 2009
- Y. V. Zastavker,*** “First-Year Integrated Project-Based Engineering Curriculum: Mathematics and Physics Faculty Conceptions of Teaching,” *International Workshop for Research on PBL in Engineering Education*, Loughborough University, Leicestershire, UK, June 2009
- Y. V. Zastavker,*** “The 3rd International Conference on Women in Physics: Global Perspectives, Common Concerns, Worldwide Views,” *American Physical Society (APS) Annual March Meeting*, Pittsburgh, PA, March 2009
- Y. V. Zastavker,*** and C. Morse,* “EotF2.0: Transforming Engineering Education,” break-out session co-leader, F. W. Olin College of Engineering, Needham, MA, March 2009
- Y. V. Zastavker,*** “Women in Physics: International View,” Massachusetts Institute of Technology, Cambridge, MA, January 2009
- Y. V. Zastavker,*** “Making Engineers Through Project-Based Learning,” Best Practices of Interdisciplinary Team Project Programs, *An IIT Interprofessional Education Conference*, Chicago, IL, April 2008
- Y. V. Zastavker, M. Ong,*** and Y.-J. Son, “Diversifying Engineering through Gateway Courses: Assessment of Project-Based Learning (PjBL) in Physics, Mathematics and Engineering Courses,” *National Symposium on the Advancement of Women in Science (NSAWS)*, Radcliffe-Harvard University, Cambridge, MA, April 2005
- M. Ong* and **Y. V. Zastavker,** “Women, Minorities, and Sciences,” Harvard Women in Physics, Harvard University, Cambridge, MA, March 2004
- Y. V. Zastavker,*** “To Cohort or Not to Cohort: An Experiment in Extensive Integration and Partial Differentiation,” *American Association of Physics Teachers (AAPT)*, Invited Talk for “Physics Outside the Box” session, Madison, WI, August 2003
- Y. V. Zastavker,*** “The Status of Women in Physics -- What, Why, and How to Change,” Wellesley College, Wellesley, MA, May 2002

D.5.2 Physics

- Y. V. Zastavker,*** “Phase Transitions: Life of Membranes and Membranes of Life,” Conference for Undergraduate Women in Physics, Yale University, New Haven, CT, January 2010
- Y. V. Zastavker,*** “Spiraling into Gallstone Disease,” *Society of Physics Students (SPS) Zone 1 Annual Meeting*, Wellesley, MA, March 2004
- Y. V. Zastavker,*** “Spiraling into a Gallstone Disease,” *Williams College, Invited Colloquium Talk*, Williamstown, MA, March 2004
- Y. V. Zastavker,*** “DNA is Not the Only Helix in Town or A Story of Crafty Microsprings,” *Bryn Mawr College, Invited Colloquium talk*, Bryn Mawr, PA, September 2002
- Y. V. Zastavker,*** “DNA is Not the Only Helix in Town or A Story of Crafty Microsprings,” Wellesley College REU program, Wellesley College, Wellesley, MA, July 2000
- Y. V. Zastavker,*** “Formation of Helical Ribbons as a General Phenomenon,” Office of Naval Research, Washington, D.C., April 1999

D.6. Contributed Conference Presentations

D.6.1 Educational/Gender Studies

- J. A. Simonovich,* E. Towers,** and **Y. V. Zastavker,** “Project-Based Learning Courses: The Relationship Between Faculty-Intended Course Implementation and Students’ Perceptions,” *American Physical Society (APS) Annual March Meeting*, Boston, MA, February/March 2012
- G. Pleiss,*** and **Y. V. Zastavker,** “Student Self-Efficacy in Introductory Project-Based Learning Courses,” *American Physical Society (APS) Annual March Meeting*, Boston, MA, February/March 2012

- J. I. Perera,* B. T. Quinlivan,* J. A. Simonovich, E. Towers, O. H. Zadik, and Y. V. Zastavker**, “Student Autonomy and its Effects on Student Enjoyment in a Traditional Mechanics Course for First-Year Engineering Students,” *2012 American Physical Society (APS) Annual March Meeting*, Boston, MA, February/March 2012
- L. Tseng, J. Baca, and Y. V. Zastavker,*** “Students’ Role Assignment in Engineering Team Work,” *Joint Annual Meeting (JAM) 2011 Conference for NSF grantees*, Washington, DC, June 2011
- Y. V. Zastavker,* J. A. Simonovich, E. Towers**, “Improving Students’ Interest and Motivation in Introductory Physics Laboratory: A Comparative Study,” *2011 American Physical Society (APS) Annual March Meeting*, Dallas, TX, March 2011
- I. K. Zimmerman,* L. K. Schelkin,* A. Pisari Schrimpf, J. Sigalovsky,* and Y. V. Zastavker,*** “GTEC – Global Technology & Engineering Consortium,” *MassCUE/MASS Technology Conference 2010*, Foxboro, MA, October 2010
- L. K. Schelkin,* V. Hathaway, J. Sigalovsky,* A. Pisari Schrimpf,* Y. V. Zastavker, and I. K. Zimmerman,*** “GTEC: Global Technology and Engineering Consortium Initiative,” *2010 Building Learning Communities (BLC) Conference*, Boston, MA, July 2010
- J. A. Simonovich, E. Towers, and Y. V. Zastavker,*** “The Engineering Skill-Set Perception Gap: A Case Study of First-Year Engineering Students,” *2010 Joint Annual Meeting (JAM) 2010 Conference for NSF grantees*, Washington, DC, June 2010
- J. Baca and Y. V. Zastavker,*** “Effects of Students’ Course Conceptions on Role Differentiation within Project-Based Group Work,” *Joint Annual Meeting (JAM) 2009 Conference for NSF grantees*, Washington, DC, June 2009

D.6.2 Physics

- K. Kashuri,* G. S. Iannacchione, Y. A. Miroshnikova, M. Elsenbeck, G. Ou, and Y. V. Zastavker**, “Pseudo-phase Diagram of Cholesterol-Rich Filamentous, Helical Ribbon, and Crystal Microstructures,” *WPI Graduate Student Poster Presentation*, Worcester, MA, April 2009
- Y. A. Miroshnikova, M. Elsenbeck, G. Ou, Y. V. Zastavker, K. Kashuri, and G. S. Iannacchione,*** “Pseudo-phase Diagram of Cholesterol-Rich Filamentous, Helical Ribbon, and Crystal Microstructures,” *2009 American Physical Society (APS) Annual March Meeting*, Pittsburgh, PA, March 2009
- Y. A. Miroshnikova, M. Elsenbeck, K. Kashuri, G. S. Iannacchione, and Y. V. Zastavker,*** “Optical and Calorimetric Studies of Cholesterol-Rich Filamentous, Helical Ribbon, and Crystal Microstructures,” *3rd International IUPAP Conference on Women in Physics*, Seoul, Korea, October 2008
- K. Kashuri, Y. A. Miroshnikova, G. S. Iannacchione,* and Y. V. Zastavker**, “Calorimetric and Optical Studies of Cholesterol-Rich Filamentous, Helical Ribbon, and Crystal Microstructures,” *2008 American Physical Society (APS) Annual March Meeting*, New Orleans, LA, March 2008
- Y. V. Zastavker and Y. A. Miroshnikova,*** “Helical Ribbons, the Self-Assembled Precursors to Gallstone Disease,” *2007 Biomedical Engineering Society (BMES) Annual Fall Meeting*, Los Angeles, CA, September 2007
- B. S. Tilley,* K. King, Y. V. Zastavker, and J. Pratt**, “Evolution Equations of Biological Structures Formed in Cholesterol Crystallization Processes,” *Society of Industrial and Applied Mathematics (SIAM)*, Boston, MA, July 2006
- B. S. Tilley,* C. Laughlin, A. Dorsk, and Y. V. Zastavker**, “On Puck Motion Down a Thin Film on an Inclined Plane,” *Society of Industrial and Applied Mathematics (SIAM)*, Boston, MA, July 2006
- Y. V. Zastavker,* B. S. Tilley, and J. C. Pratt**, “Spiraling into Gallstone Disease: a Physicist’s Spin on One Digestive Tract Disorder,” *2nd International IUPAP Conference on Women in Physics*, Rio de Janeiro, Brazil, May 2005
- B. Smith,* Y. V. Zastavker, N. Asherie, A. Lomakin, and G. B. Benedek**, “An Investigation of the Elastic Properties of Anisotropic Helical Ribbons,” *45th Annual Biophysical Society Meeting*, Boston, MA, February 2001
- Y. V. Zastavker,*** “Self-Assembly of Helical Structures,” *Biomaterials and Complex Fluids Workshop*, University of Massachusetts, Amherst, MA, June 2000

- Y. V. Zastavker,*** “Investigation of the Chiral Self-Assembly in Model Bile,” *Physics Department Poster Session*, MIT, Cambridge, MA, October 1999
- Y. V. Zastavker,*** “Investigation of the Chiral Self-Assembly in Model Bile,” *Materials Day at the Materials Processing Center*, MIT, Cambridge, MA, September 1999
- Y. V. Zastavker,*** “Role of Chiral Self-Assembly in Advanced Biomolecular Materials Development,” *Physics Department Poster Session*, MIT, Cambridge, MA, November, 1997
- Y. V. Zastavker,*** “Role of Chiral Self-Assembly in Advanced Biomolecular Materials Development,” *Biomaterials and Complex Fluids workshop*, Brandeis University, Waltham, MA, October, 1997

D.7. Accepted Contributed Conference Presentations

D.7.1 Educational/Gender Studies

None at this time

D.7.2 Physics

None at this time

E. Funding

E.1. Funded Proposals and Grants

E.1.1 Educational/Gender Studies

- F. W. Olin College of Engineering, Innovation Funding Grant Program:* “Critical Reflection Across Olin’s Learning Continuum,” ~\$8,000; **PI** with Co-PI Gillian Epstein
- F. W. Olin College of Engineering, Innovation Funding Grant Program:* “Curriculum Innovation Committee Development of Assessment System,” ~\$2,000; **PI** with Joanne Pratt
- F. W. Olin College of Engineering, Faculty Development Funding Program:* “Understanding Teamwork Through Discourse Analysis,” \$2,630 awarded for 05/2015 – 12/2015; **PI** with Co-PI Verónica Darer (Wellesley College)
- F. W. Olin College of Engineering, Innovation Funding Grant Program:* “Recruitment of Teachers through Mindful and Reflective, Student-Centered Learning,” \$1,350 awarded for 05/2015 – 12/2015; **PI** with Co-PI Rebecca Christianson and Jeremy Goodman
- F. W. Olin College of Engineering, Faculty Development Funding Program:* “Understanding and Supporting Student Intrinsic Motivation in STEM Courses,” \$5,000 awarded for 03/2015 – 12/2015; **PI** with Jon Stolk
- North Hill – Olin College Fund for Innovation in Aging:* “Critical Reflective Writing with North Hill Residents,” \$1,200 awarded for 03/2015 – 12/2015; **PI** with Co-PI Gillian Epstein
- Babson/Olin/Wellesley Mellon Presidential Innovation Project Fund:* “Big Ideas for Busy People 2,” \$2,000 awarded for 2015-2016 Academic Year; **Co-PI** with Jean Huang, Verónica Darer (Wellesley College), Oscar Fernandez (Wellesley College), Sinan Erzurumlu (Babson College), and Rick Cleary (Babson College)
- F. W. Olin College of Engineering, Innovation Funding Grant Program:* “Understanding Teamwork Through Discourse Analysis,” \$4,500 awarded for 03/2014 – 12/2014; **PI** with Co-PI Verónica Darer (Wellesley College)
- F. W. Olin College of Engineering, Innovation Funding Grant Program:* “Understanding and Supporting Student Intrinsic Motivation in STEM Courses,” \$5,000 awarded for 03/2014 – 12/2014; **PI** with Co-PI Jon Stolk
- F. W. Olin College of Engineering, Innovation Funding Grant Program:* “Recruitment of Teachers through Mindful and Reflective, Student-Centered Learning,” \$5,500 awarded for 02/2014 – 12/2014; **PI** with Co-PI Rebecca Christianson and Jeremy Goodman
- Babson/Olin/Wellesley Mellon Presidential Innovation Project Fund:* “Big Ideas for Busy People,” \$2,500 awarded for 2014-2015 Academic Year; **Co-PI** with Jean Huang, Verónica Darer (Wellesley College), Nolan Flynn (Wellesley College), Vikki Rodgers (Babson College), and Sinan Erzurumlu (Babson College)
- NSF:* “Collaborative Research: Understanding and Supporting Student Intrinsic Motivation in STEM Courses,” \$479,951.00 awarded for 06/01/2013 – 05/31/2015; **Co-PI** with PI Jon Stolk
- F. W. Olin College of Engineering, Innovation Funding Grant Program:* “Recruitment of Teachers through Mindful and Reflective, Student-Centered Learning,” \$8,640 awarded for 02/2013 – 12/2013; **PI** with Co-PI Rebecca Christianson
- F. W. Olin College of Engineering, Innovation Funding Grant Program:* “Exploration of Critical Reflective Writing at Olin,” \$4,000 awarded for 02/2013 – 12/2013; **PI** with Co-PI Gillian Epstein
- NSF:* “REU Site: Engineering Education Research: Understanding and Improving Student Experiences,” \$423,565, awarded for 01/01/2012 – 12/31/2014; **Co-PI** with PI Debbie Chachra
- Babson/Olin/Wellesley Mellon Presidential Innovation Project Fund:* “Catalyzing a Change in STEM Classrooms through Discourse Analysis,” \$1,000 awarded for the period of 01/01/2013 – 12/31/2013; **PI** with PI Verónica Darer (Wellesley College)
- Babson/Olin/Wellesley Mellon Presidential Innovation Project Fund:* “BOW Teaching and Learning Faculty Group,” \$4,000 awarded for the period of 01/01/2013 – 12/31/2013; **Co-PI** with PI Jean Huang (Olin), and Co-PIs: Verónica Darer (Wellesley College), Nolan Flynn (Wellesley College), Vikki Rogers (Babson College), and Erik Noyes (Babson College)

- F. W. Olin College of Engineering, Innovation Funding Grant Program:* “Discourse Analysis: Pedagogical Research and Training Program,” \$4,320 awarded 04/2011 for the period of 06/2011 – 12/2011; **PI**
- Babson/Olin/Wellesley Mellon Presidential Innovation Project Fund:* “Pedagogical Research and Training Program (PRTP),” \$9,951 for the period 01/01/2012 – 12/31/2012; \$10,000 awarded for the period of 01/01/2012 – 12/31/2012; **PI** with PI Verónica Darer (Wellesley College)
- Babson/Olin/Wellesley Mellon Presidential Innovation Project Fund:* “Three-College Participation in the USA Science & Engineering Festival, Washington DC,” \$10,000 awarded for the period of 01/01/2011 – 05/31/2012; **Co-PI** with Cathy Summa (Wellesley College), Vikki Rodgers (Babson College), and Chuck Winrich (Babson College)
- Davis Educational Foundation:* “Faculty Development Modules: Leveraging Faculty Expertise and the Student Experience for Curricular Effectiveness,” \$150,160 awarded 11/2011 for the period of 11/2011 – 10/2014; **Educational Partner** with PI’s Caitrin Lynch and John Geddes
- F. W. Olin College of Engineering, Innovation Funding Grant Program:* “Course Development: Teaching and Learning in Undergraduate Science & Engineering,” \$5,184 awarded 04/2011 for the period of 06/2011 – 12/2011; **PI**
- NSF (PHY 0824634):* “Third International Conference on Women in Physics,” \$138,180 awarded 06/2008 for the period of 07/2008 – 06/2011; **Co-PI** with Beverly Hartline, K. Renee Horton, Luz J. Martinez-Miranda
- NSF (HRD 0624738):* “RES: Does Project-Based Learning Matter to Undergraduate Women in STEM? A Study of Student Performance, Interest, and Engagement in Gateway Physics, Mathematics, and Engineering,” \$354,287 awarded 08/06 for the period of 09/2006 – 08/2011; **PI** with Co-PI Maria Ong 09/2006 – 08/2009; **PI** 09/2009 – 08/2011
- F. W. Olin College of Engineering, Faculty Summer Grant Program:* “Recruiting and Retaining Women and Underrepresented Ethnic Minorities in Science and Engineering through Project-Based Learning: A Pilot Study in Undergraduate Physics, Mathematics and Engineering,” \$1,200 awarded April 2006 for the period 2006 – 2007; **PI**
- F. W. Olin College of Engineering, OSSISURB:* “Diversifying Engineering Through Gateway Courses: Assessment of Project-Based Learning in Undergraduate Physics, Mathematics and Engineering,” \$1,350 awarded Spring 2005 – 2006; **PI**
- F. W. Olin College of Engineering, OIR:* “The Project for Science and Engineering Equity and Diversity (The Project SEED Initiative) Symposium: Exploration of a new idea to solve an on-going problem and fostering collaboration and promoting diversity of perspectives,” \$500 awarded 01/06 for 2006; **PI**
- Spencer Foundation (200500077):* “Recruiting and Retaining Women and Underrepresented Ethnic Minorities in Science and Engineering through Project-Based Learning: A Pilot Study in Undergraduate Physics, Mathematics and Engineering,” \$40,000 awarded 09/04 for the period of 09/2004 – 12/2005; **PI** with Consultant: Maria Ong
- F. W. Olin College of Engineering, OIR:* “A Comparative Study of the Effects of Project-Based and Non-Project-Based Learning Pedagogy on Student Performance, Satisfaction, and Retention in Undergraduate Physics and Other Science and Engineering Courses,” \$6,960 awarded 10/03 for the period of 10/2003 – 06/2004; **PI**
- E.1.2 Physics**
- F. W. Olin College of Engineering, Faculty Summer Grant Program:* “Calorimetric and Optical Studies of Pseudo-Phase Diagram of Cholesterol-Rich Filamentous, Helical Ribbon, and Crystal Microstructures,” \$3,616 awarded 04/2009 for the period 06/2009 – 08/2009; **PI** with Co-PI G. S. Iannacchione
- F. W. Olin College of Engineering, Faculty Summer Grant Program:* “Calorimetric and Optical Studies of Cholesterol-Rich Filamentous, Helical Ribbon, and Crystal Microstructures,” \$3,325 awarded April 2008 for the period 06/2008 – 08/2008; **PI** with Co-PI G. S. Iannacchione
- F. W. Olin College of Engineering, Faculty Summer Grant Program:* “Composition of Amphiphiles, Helical Ribbon and Tubule Surfaces,” \$720 awarded March 2007 for the period 06/2007 – 08/2007; **PI**
- NSF (BES 0619373):* “MRI: Acquisition of a confocal microscope for investigation of biophysical interactions and to enrich undergraduate bioengineering education,” \$478,845 awarded 08/2006 for the period of 09/2006 – 08/2009; **PI** with Co-PI’s: Debbie Chachra, Rebecca Christianson, and Alisha Sieminski

F. W. Olin College of Engineering, Faculty Summer Grant Program: “Study of Supermolecular Structure of the Self-Assembly of Lipid Membranes Formed in Cholesterol Crystallization: \$7,930 awarded April 2005 for the period of 2005 -- 2006; **PI**

F. W. Olin College of Engineering, Faculty Summer Grant Program: “Study of Supermolecular Structure of the Self-Assembly of Lipid Membranes Formed in Cholesterol Crystallization:” \$11,770 awarded April 2004 for the period 2004 – 2005; **PI**

F. W. Olin College of Engineering, OSSISURB: “Force Plate,” \$1,750 awarded 2004 -- 2006; **PI**

F. W. Olin College of Engineering, OSSISURB: “Non-Newtonian Fluids and Coefficient of Friction They Create,” \$700 awarded 2004 – 2005; **PI**

F. W. Olin College of Engineering, OSSISURB: “Study of Supermolecular Structure of the Self-Assembly of Lipid Membranes Formed in Cholesterol Crystallization,” \$2,450 awarded 2004 – 2005; **PI** with Co-PI’s Burt Tilley and Joanne Pratt

Brachman Hoffman Small Grant, Wellesley College: “Study of Supermolecular Infrastructure of the Self-Assembly of Lipid Membranes Formed in Cholesterol Crystallization;” \$4,000 awarded for period of 06/2001 – 05/2002; **PI**

E.2. Proposals and Grants Under Review

E.2.1 Educational/Gender Studies

Teagle Foundation: “The Liberal Arts and Engineering: Integrating the Liberal Arts through the Grand Challenge Scholars Program Framework,” \$76,000; **PI** with Vincent Manno and Caitrin Lynch on a multi-cite proposal with RIT leading the effort

E.2.2 Physics

None at this time

E.3. Proposals Under Preparation

E.3.1 Educational/Gender Studies

NSF: “Recruitment of Teachers through Mindful and Reflective, Student-Centered Learning,” **PI** with Co-PI’s Rebecca Christianson and Jeremy Goodman

E.3.2 Physics

None at this time

IV. Teaching, Advising, and Mentoring Activities: 2002 - Present

A. Olin College: Courses, Independent Studies, and Olin Self-Study Activities

A.1. General Descriptions

Semester	Course #	Course Name
Spring 2016	AHSE 2XXX	Special Topics in Arts, Humanities and Social Sciences: <i>Diverse Learners, Diverse Teachers</i> (2015 BOW CURRICULAR INNOVATION FELLOWS PROGRAM)
Fall 2015		
Spring 2015	SCI 1130 SCI 3130 AHSE 0198 / ISR 0098	Mechanics: A Theoretical Approach Advanced Classical Mechanics Independent Study in Arts, Humanities and Social Sciences / Independent Study: <i>Self-Representation through Development of a Grand Challenge Scholars Portfolio</i>
Fall 2014	AHSE 2170 ENGR 1200	Teaching and Learning in Undergraduate Science and Engineering Design Nature
Spring 2014	SCI 1130 AHSE 2199	Mechanics: A Theoretical Approach Special Topics in Arts, Humanities and Social Sciences: <i>Critical Reflective Writing</i>
Fall 2013	SCI 1121 ENGR 1200	Electricity and Magnetism: A Theoretical Approach Design Nature
Spring 2013	SCI 1130 SCI 3130 AHSE 4190	Mechanics: A Theoretical Approach Advanced Classical Mechanics AHS Capstone Advisor for five students: 1. Jeffrey Hart: <i>The Essence of Education: An Exploration of the Fundamental Questions of Education</i> ; 2. Janaki Perera: <i>Faculty Perceptions on First-Year Undergraduate Engineering Education</i> ; 3. Geoffrey Pleiss: <i>Opening Pandora's Box: The Positive and Negative Effects of Developing Pedagogical and Metacognitive Awareness</i> ; 4. Elizabeth Poindexter: <i>Education in the Developing World: An Organized Index of Education Initiatives in the Developing World</i> ; 5. Brendan Quinlivan: <i>Faculty Perceptions on First-Year Undergraduate Engineering Education</i>
Fall 2012	AHSE 2199 ENGR 1200	Special Topics in Arts, Humanities and Social Sciences: <i>Teaching and Learning in Undergraduate Science and Engineering</i> Design Nature
Spring 2012	SCI 2199A SCI 22020 / ENGR 2620 AHSE 0198 AHSE 4198 AHSE 4190	Special Topics in Physics: Probability and Statistical Mechanics Biomechanics Independent Study in Arts, Humanities and Social Sciences: <i>Curriculum Design</i> Olin Self-Study in Arts, Humanities and Social Sciences: <i>Curriculum Design</i> AHS Capstone Advisor for four students: 1. Roland Liu: <i>Lesson Plans: The Cape Cod Wind Project and International Whaling Regulations</i> 2. Andrew Pickler: <i>Learning Programming through Web Development</i> 3. Jennifer Simonovich: <i>Students' Perceptions, Faculty Intentions, and Classroom Implementations in First-Year Project-Based Learning Courses</i> 4. Elizabeth Threlkeld: <i>High School Engineering Design</i>

Fall 2011	AHSE 2199	Special Topics in Arts, Humanities and Social Sciences: <i>Teaching and Learning in Undergraduate Science and Engineering</i>
	ENGR 1200	Design Nature
Spring 2011	SCI 1121	Electricity and Magnetism: A Theoretical Approach
	SCI 4198	Olin Self-Study in Science: <i>Development of Scientific Content for Olin Global Technology and Engineering Consortium (GTEC) Program</i>
	AHSE 0198	Independent Study in Arts, Humanities and Social Sciences: <i>Facilitating Self-Directed Learning</i>
	SCI 0098A	Independent Study in Science: <i>Laser Interferometer Vibration Amplifier</i>
	SCI 0098B	Independent Study in Science: <i>Teaching Electricity and Magnetism</i>
	SCI 0098C / ENGR 0098	Independent Study in Science and Engineering: <i>Investigation of Bipedal Walking</i>
	ISR 0098	Independent Study: <i>Development of Olin Global Technology and Engineering Consortium (GTEC) Pilot Program</i>
Fall 2010	SCI 3130	Advanced Classical Mechanics
	SCI 1130	Mechanics: A Theoretical Approach
	SCI 0098	Independent Study in Science: <i>Laser Interferometry: Towards Making a Laser Microphone</i>
Spring 2010	SCI 1121	Electricity and Magnetism: A Theoretical Approach
	SCI 2199	Special Topics in Physics: Biomechanics (4 credit course)
	SCI 4198	Olin Self-Study in Science: <i>Bioengineering Disciplines: Establishing an Educational Foundation</i>
	SCI 4198	Olin Self-Study in Science: <i>Chemosensory Neuroscience Research, Examination of Bioengineering Areas of Research</i>
	ISR 4198	Olin Self-Study: <i>The Effects of Confidence on Learning Styles in Project-Based Learning</i>
Fall 2009	SCI 1130	Mechanics: A Theoretical Approach
	SCI 4198	Olin Self-Study in Science: <i>Bioengineering Disciplines: Establishing an Educational Foundation</i>
	ISR 4198	Olin Self-Study: <i>The Effects of Confidence on Learning Styles in Project Based Learning</i>
	ISR 0098	Independent Study: <i>Russian Language</i>
Spring 2009	SCI 1121	Electricity and Magnetism
	ENGR 3699A	Special Topics in Bioengineering: Biological Thermodynamics for Engineers
Fall 2008	SCI 3130	Advanced Classical Mechanics
Spring 2008	SCI 1120	Physics: Electromagnetism and Waves
	SCI 2199	Special Topics in Physics: Biomechanics (2 credit course)
	SCI 0098	Independent Study in Sciences: <i>Estimation Theory and Practice: Order of Magnitude Physics</i>
Fall 2007		Academic Leave
Spring 2007	SCI 1120	Physics: Electromagnetism and Waves
	ENGR 3699A	Special Topics in Bioengineering: Biological Thermodynamics
	SCI 2099	Special Topics in Science: Materials Visualization
	AHSE 0198	Independent Study in Arts, Humanities, Social Sciences: <i>Meta-Olin</i>
	SCI 4198	Olin Self-Study in Science: <i>Physics and Dance: A Review of Current Literature</i>
Fall 2006	SCI1110	Physics: Mechanics
	SCI3130	Advanced Classical Mechanics
Spring 2006		Parental Leave

	AHSE4198	Olin Self Study in Arts, Humanities, Social Science: <i>Diversifying Engineering</i>
Fall 2005	SCI 3130	Advanced Classical Mechanics
	ISR1200	Independent Study: <i>Negative Friction with Viscous Flow</i>
Spring 2005	SCI 1120	Physics: Electromagnetism and Waves
	SCI 2110	Biological Physics
	ISR1200	Independent Study: <i>Negative Friction with Viscous Flow</i>
Fall 2004	SCI 1110	Physics: Mechanics
Spring 2004	FND1220	Physical Foundations of Engineering II
	ELE2710	Physics of Living Organisms
	ISR1200	Independent Study: <i>Negative Friction with Viscous Flow</i>
Fall 2003	FND 1210	Physical Foundations of Engineering I
Spring 2003	FND 1220	Physical Foundations of Engineering II
Fall 2002	FND 1210	Physical Foundations of Engineering I

A.2. New Course Descriptions

A.2.1 Educational/Gender Studies

AHSE 2XXX, *Special Topics in Arts, Humanities and Social Sciences: Diverse Learners, Diverse Teachers* (through 2015 BOW CURRICULAR INNOVATION FELLOWS PROGRAM, to be delivered Fall 2016): In this course, students will have the opportunity to critically examine and research the effect of diverse cultural values on education, specifically in the STEM, Humanities, and Social Science fields. The study and critical analysis of the influence of ethnicity, gender, religion, language, learning preferences, social class/socio-economic status, and diversity of thought on teaching and learning is the basis of the course. By constructing a democratic classroom, participants will take responsibility for their own learning/teaching and the learning/teaching of instructors and peers as they explore pedagogical practices that create an inclusive classroom in which all have equitable opportunities to teach and learn.

AHSE 2199, *Special Topics in Arts, Humanities and Social Sciences: Critical Reflective Writing*: In this course students have multiple, iterative opportunities to try various theoretical models for thinking and writing analytically about their work and life during their time at Olin, with the ultimate aim of producing a coherent suite of incisive analytical reflections that tell a compelling and original story for direct use in portfolios, applications, and interviews. Besides having the pragmatic value of opening doors for opportunities beyond Olin, learning to leverage analytical thinking and writing to perceive and share a personalized academic story provides an invaluable habit of mind for life-long learning: the understanding that what we do and learn has an ever-changing shape and story, and that at any given moment we can tap into that story and reflect on who we are, who we want to be, and what we hope to accomplish.

AHSE 2199, *Special Topics in Arts, Humanities and Social Sciences: Teaching and Learning in Undergraduate Science and Engineering*: Examination of select topics in teaching and learning in undergraduate science, technology, engineering, and mathematics (STEM) courses. In a seminar format, the course discusses research on best practices in pedagogy and curriculum design, cognition and learning, student classroom experiences, diversity, and assessment. Experience in instructional design, pedagogy, and assessment is provided through development of a teaching portfolio and delivery of a class. Class was taught for the first time in Fall 2011 with Lynn Andrea Stein and solo in 2012.

A.2.2 Physics

SCI 2199A, *Probability and Statistical Mechanics*: Introduction to the concepts of Probability and Statistical Mechanics at the intermediate level. Topics of Thermodynamics are also introduced as needed for development of Statistical Mechanics content. The course specifically developed for a diverse audience of Olin students, which includes diverse pedagogical approaches and assessment, including project and portfolio work. Class was taught for the first time in Spring 2012.

ENGR 1200, *Design Nature*: Support of students and faculty by providing relevant physics content and development of theoretical and practical foundations of physical concepts necessary in the course. Course is co-taught for the first time in Fall 2011.

SCI 1121, *Electricity and Magnetism: A Theoretical Approach*: Calculus-based introduction to theory of Electricity and Magnetism; stand-alone course developed and taught for students without previous college-level Mechanics course. In Spring 2011, the course was transformed to incorporate research-based practices of autonomy development through student choice and support of psychological needs (i.e., autonomy, competency, and relatedness.)

SCI 1130, *Mechanics: A Theoretical Approach*: Calculus-based introduction to theory of Newtonian Mechanics; stand-alone course developed and taught for students with Olin Electricity and Magnetism course as background. First taught in the Fall 2009, this course was re-thought in the Fall 2010 to incorporate student organizational and procedural autonomy as a learning motivation driver with additional support to the students who chose to pursue cognitive autonomy development.

SCI 2199, *Special Topics in Physics: Biomechanics*: Nature and function of human movement is studied from the first principles, Newtonian mechanics, dynamics and statics. Both 2- and 4-credit version of the course have been offered during Spring 2008 and 2010, respectively. The course is delivered through a self-directed project-based learning environment with one over-arching project as a driver for content and skill development.

SCI 1120, *Physics: Electromagnetism and Waves*: Calculus-based introduction to Electricity and Magnetism and Waves; coordinated with MATH 1120, *Math: Vector Calculus*, and ENGR 1120, *Engineering*:

Modeling and Control of Spatially Distributed Systems. In Spring 2008 the course was taught in a completely self-directed project-based environment through a theme of “Operation: The Olin Teach-In” with large emphasis on pedagogical content knowledge and skill development in addition to the relevant knowledge and skill development in Electromagnetism and Waves.

SCI 3130, *Advanced Classical Mechanics*: Advanced mechanics with Lagrangian and Hamiltonian formulation. This upper-level course delivered at a level equivalent to that of senior physics majors combines the best practices of traditional and project-based learning environment. Final projects drive students’ motivation and solidify content and skill development at the end of the course. With every offering, the course has undergone transition from a more traditional to a more project-based environment.

ENGR 3699A, *Special Topics in BioEngineering: Biological Thermodynamics for Engineers*: Introduction to Thermodynamics and its uses in the fields pertinent to biology and biochemistry; laws of thermodynamics, Gibbs Free Energy, statistical thermodynamics, binding equilibria and reaction kinetics, and a survey of other interesting areas of biological thermodynamics. The course uses project-based learning design through four independent themes that students pursue in a self-directed environment. Co-taught with Alisha L. Sieminski.

SCI 2099, *Special Topics in Science: Materials Visualization*: A practical, lab-based introduction to microscopy techniques, including bright field, dark field, reflection, DIC, phase contrast, fluorescence and confocal. The principles behind these techniques studied theoretically with a large hands-on component using equipment available on campus. Co-taught with Rebecca Christianson and Alisha L. Sieminski.

SCI 2110, *Biological Physics*: Modified ELE 2710 with an emphasis on Biomechanics and fundamentals of thermodynamics as they may be applied to biological systems.

ELE 2710, *Physics of Living Organisms*: Introduction to Biomechanics and Bio-Thermodynamics through the use of current literature.

SCI 1120, *Physics: Electromagnetism and Waves*: Calculus-based introduction to Electricity and Magnetism and Waves; coordinated with MATH 1120, *Math: Vector Calculus*, and ENGR 1120, *Engineering: Modeling and Control of Spatially Distributed Systems*.

SCI 1110, *Physics: Mechanics*: Calculus-based introduction to Newtonian Mechanics; coordinated with Math 1111, *Math: Calculus*, and ENGR 1110, *Engineering: Modeling and Control of Compartment Systems*.

FND 1220, *Physical Foundation in Engineering II*: Calculus-based introduction to Electricity and Magnetism; coordinated with FND 1320, *Mathematical Foundation of Engineering II* (Vector Calculus and Linear Algebra), and FND 1410, *Foundations of Engineering Project II*.

FND 1210, *Physical Foundations of Engineering I*: Calculus-based Newtonian Mechanics, introduction to fluids and thermodynamics; coordinated with FND 1310, *Mathematical Foundations of Engineering I* (Calculus and Differential Equations), and FND 1410, *Foundations of Engineering Project I*.

A.3. Independent Study, Olin Self-Study and AHS Capstone Advising Activity Descriptions

A.3.1 Educational/Gender Studies

AHSE 0198 / ISR 0098, *Independent Study in Arts, Humanities and Social Sciences / Independent Study: Self-Representation through Development of a Grand Challenge Scholars Portfolio* for **nine** students: Kai Austin, Katherine Bender, Ariana Chae, Sharon Grimshaw, Ingrid Hagen-Keith, Julianne Jorgensen, Alexander Kessler, Luke Metz, and James Nee; guiding students in an independent journey of reflecting on one’s professional and personal experiences that has gotten them to the point of graduation from Olin College as a Grand Challenge Scholar prepared to tackle complex interdisciplinary global challenges.

AHSE 4190, AHS Capstone Advisor for **five** students:

1. Jeffrey Hart: *The Essence of Education: An Exploration of the Fundamental Questions of Education*;
2. Janaki Perera: *Faculty Perceptions on First-Year Undergraduate Engineering Education*;
3. Geoffrey Pleiss: *Opening Pandora's Box: The Positive and Negative Effects of Developing Pedagogical and Metacognitive Awareness*;
4. Elizabeth Poindexter: *Education in the Developing World: An Organized Index of Education Initiatives in the Developing World*;
5. Brendan Quinlivan: *Faculty Perceptions on First-Year Undergraduate Engineering Education*

AHSE 4190, AHS Capstone Advisor for **four** students:

1. Roland Liu: *Lesson Plans: The Cape Cod Wind Project and International Whaling Regulations*;
2. Andrew Pikler: *Learning Programming through Web Development*;
3. Jennifer Simonovich: *Students' Perceptions, Faculty Intentions, and Classroom Implementations in First-Year Project-Based Learning Courses*;
4. Elizabeth Threlkeld: *High School Engineering Design*

AHSE 4198 *Olin Self-Study in Arts, Humanities and Social Sciences: Curriculum Design*: Development, implementation, and assessment of a high school engineering design curriculum with a significant final deliverable of a white paper summarizing the project results: Brittany Strachota, Spring 2012

AHSE 0198 *Independent Study in Arts, Humanities and Social Sciences: Curriculum Design*: Development, implementation, and assessment of a high school engineering design curriculum: Poorva Singal, Spring 2012

SCI 4198, *Olin Self-Study in Science: Development of Scientific Content for Olin GTEC Program*: Development and delivery of scientific content for high school physics course supporting engineering design-and-build project: Brittany Strachota, Spring 2011

AHSE 0198, *Independent Study in Arts, Humanities and Social Sciences: Facilitating Self-Directed Learning*: Constructing theoretical and practical framework for middle school science course development and delivery in a self-directed way: Andrew Pethan and Rebecca Schutzengel, Spring 2011

ISR 0098, *Independent Study: Development of Olin GTEC Program*, Development and delivery of content for high school engineering design and build project: Elizabeth Poindexter, Spring 2011

ISR 4198, *Olin Self-Study: The Effects of Confidence on Learning Styles in Project Based Learning*: Continuation and building on the current research work to establish the relationships between pedagogical and curricular practices and self-efficacy: Katarina Miller, Fall 2009 – Spring 2010

AHSE 0198, *Independent Study in Arts, Humanities, Social Sciences: Meta-Olin*: Co-developed and taught a Diversity module of this independent study. The work associated with this module exposed students to the primary literature at the intersection of gender, race/ethnicity, and social class and engineering/science education. Critical thinking skills, qualitative analysis, life-long learning and contextual thinking were a few of many competencies addressed in this module: Mel Chua, Christopher Dellin, Boris Dieseldorff, Chandra Little, Marco Morales, and Andy Pethan, Spring 2007

AHSE 4198, *Olin Self-Study in AHS: Diversifying Engineering*: Literature review of the engineering education field at the intersection with gender studies, Kathleen Cummings, Spring 2006

A.3.2 Physics

SCI 0098, 0098A, *Independent Study in Science: Laser Interferometry: Towards Making a Laser Microphone*: Design, build, and evaluation of a laser microphone, as well as preparation of a manuscript (co-advisor: Victory Doherty, Eidolon, Inc.): Michael Heyns, Ian Daniher, Jeffrey Heart, Jonathan McKay, Victoria L. Hamilton, Fall 2010 – Fall 2011

SCI 0098B, *Independent Study in Science: Teaching Electricity and Magnetism*: Developing pedagogical theoretical and practical framework for teaching introductory college-level Electricity and Magnetism course: Molly R. Grossman and Roland B. Liu, Spring 2011

SCI 0098C/ENGR 0098, *Independent Study in Science: Investigation of Bipedal Walking*: Developing theoretical and computational model as well as physical artifact for demonstration of bipedal walking (co-advisors: Aaron Hoover and David Barrett): Andrew Carmedelle, Erica Chin, Clay Gimenez, Meghan Murray, and Gray Thomas, Spring 2011

SCI 4198, *Olin Self-Study in Science: Bioengineering Disciplines: Establishing an Educational Foundation*: Developing a set of review modules describing the state of research in bioengineering disciplines: Guanqing Ou and Claire McLeod, Fall 2009 – Spring 2010

SCI 4198, *Olin Self-Study in Science: Chemosensory Neuroscience Research*: co-advising with Dr. Don Katz (Brandeis University) a research project with delivery of a manuscript: Jennifer Keene, Spring 2010

SCI 4198, *Independent Study in Sciences: Estimation Theory and Practice*: Investigation and practice of order of magnitude estimation: Kelcy Adamec, Philip Chung, Boris Dieseldorff, Ryan Hubbard, Andrew Pethan, Spring 2008

SCI 4198, *Olin Self-Study in Sciences: Physics and Dance: A Review of Current Literature*: Developing a review paper of literature describing the physics of dance: Carmella McCormack, Spring 2007

ISR 1200, *Independent Study: Negative Friction with Viscous Flow*: Experimental and theoretical description of Non-Newtonian flow associated with blocks sliding along inclined planes (co-advisor: Burt S. Tilley): Charleen Laughlin, Alexander Dorsk, David Wurtz, Fall 2004

A.3.3 Other

ISR 0098, *Independent Study: Russian Language*: Project-Based Learning approach to development of communication competency in Russian language through translation and dubbing of Russian cartoons (on youtube.com) into English: Jonathan Inman, Fall 2009

B. Olin College: Student Research, Advising, and Mentoring Activities

B.1. Student Research, Advising, and Mentoring Activity Names and Student Participation

Semester	Course #	Course Name	# Olin Students
Spring 2015	AHSE 0197	Undergraduate Research: <i>Research in Engineering Education: Project-Based Learning</i>	1
	AHSE 0197	Undergraduate Research: <i>Discourse Analysis</i>	2
	AHSE 0197	Undergraduate Research: <i>Motivation</i>	8
Fall 2014	AHSE 0197	Undergraduate Research: <i>Research in Engineering Education: Project-Based Learning</i>	1
	ISR 0097	Undergraduate Research: <i>Discourse Analysis</i>	2
	ISR 0097	Undergraduate Research: <i>Motivation</i>	10
	ISR 0097	Undergraduate Research: <i>Development of Teachers</i>	4
Spring 2014	ISR 0097	Undergraduate Research: <i>Research in Engineering Education: Project-Based Learning</i>	3
	ISR 0097	Undergraduate Research: <i>Discourse Analysis</i>	3
	ISR 0097	Undergraduate Research: <i>Motivation</i>	6
	ISR 0097	Undergraduate Research: <i>Development of Teachers</i>	4
Fall 2013	ISR 0097	Undergraduate Research: <i>Research in Engineering Education: Project-Based Learning</i>	3
	ISR 0097	Undergraduate Research: <i>Discourse Analysis</i>	4
	ISR 0097	Undergraduate Research: <i>Motivation</i>	2
	ISR 0097	Undergraduate Research: <i>Development of Teachers</i>	4
Spring 2013	AHSE 0197	Undergraduate Research: <i>Research in Engineering Education: Project-Based Learning</i>	4
	ISR 0097	Undergraduate Research: <i>Research in Engineering Education: Project-Based Learning</i>	4
	ISR 0097	Undergraduate Research: <i>Discourse Analysis</i>	2
	ISR 0097	Undergraduate Research: <i>Motivation</i>	2
Fall 2012	ISR 0097	Undergraduate Research: <i>Research in Engineering Education: Project-Based Learning</i>	8
	ISR 0097	Undergraduate Research: <i>Discourse Analysis</i>	1
Spring 2012	ISR 0097	Undergraduate Research in Sciences: <i>Biophysical Properties of Helical Ribbons</i>	2
	ISR 0097	Undergraduate Research: <i>Research in Engineering Education: Project-Based Learning</i>	9
	ISR 0097	Undergraduate Research: <i>Discourse Analysis</i>	1
	ISR 0097	Undergraduate Research: <i>Curriculum Design</i>	1
Fall 2011	SCI 0097	Undergraduate Research in Sciences: <i>Biophysical Properties of Helical Ribbons</i>	1
	ISR 0097	Undergraduate Research: <i>Research in Engineering Education: Project-Based Learning</i>	8
Spring 2010	SCI0097	Undergraduate Research in Sciences: <i>Biophysical Properties of Helical Ribbons</i>	1
	ISR0097	Undergraduate Research: <i>Research in Engineering Education: Project-</i>	7

<i>Based Learning</i>			
Fall 2009	SCI0097	Undergraduate Research in Sciences: <i>Biophysical Properties of Helical Ribbons</i>	1
	ISR0097	Undergraduate Research: <i>Research in Engineering Education: Project-Based Learning</i>	5
Spring 2009	SCI0097	Undergraduate Research in Sciences: <i>Biophysical Properties of Helical Ribbons</i>	4
	ISR0097	Undergraduate Research: <i>Research in Engineering Education: Project-Based Learning</i>	6
Fall 2008	SCI0097	Undergraduate Research in Sciences: <i>Biophysical Properties of Helical Ribbons</i>	3
	ISR0097	Undergraduate Research: <i>Research in Engineering Education: Project-Based Learning</i>	4
Spring 2008	SCI0097	Undergraduate Research in Sciences: <i>Biophysical Properties of Helical Ribbons</i>	1
	ISR0097	Undergraduate Research: <i>Research in Engineering Education: Project-Based Learning</i>	4
Fall 2007		Sabbatical Leave	
	ISR0097	Undergraduate Research: <i>Biophysical Properties of Helical Ribbons</i>	2
	AHSE0197	Undergraduate Research in Arts Humanities and Social Sciences: <i>Diversifying Engineering Through Gateway Courses</i>	4
Spring 2007	SCI0097	Undergraduate Research in Sciences: <i>Biophysical Properties of Helical Ribbons</i>	2
	AHSE 0197	Undergraduate Research in Arts Humanities and Social Sciences: <i>Diversifying Engineering Through Gateway Courses</i>	4
Fall 2006	SCI 0097	Undergraduate Research in Sciences: <i>Biophysical Properties of Helical Ribbons</i>	1
	AHSE 0197	Undergraduate Research in Arts Humanities and Social Sciences: <i>Diversifying Engineering Through Gateway Courses</i>	3
Spring 2006		Parental Leave	
	ISR 0097	Undergraduate Research: <i>Biophysics of Helical Ribbons</i>	2
	ISR 0097	Undergraduate Research: <i>Force Plate Research Project</i>	3
	ISR 0097	Undergraduate Research: <i>Diversifying Engineering Through Gateway Courses</i>	4
Fall 2005	ISR 0097	Undergraduate Research: <i>Biophysical Properties of Helical Ribbons</i>	5
	ISR 0097	Undergraduate Research: <i>Force Plate Research Project</i>	3
	ISR 0097	Undergraduate Research: <i>Diversifying Engineering Through Gateway Courses</i>	4
Spring 2005	SCI 1097	Undergraduate Research in Sciences: <i>Biophysics and Mathematical Modeling of Helical Ribbons</i>	5
	ISR 0097	Undergraduate Research: <i>Force Plate Research Project</i>	3
	SCI 1097	Undergraduate Research: <i>Non-Newtonian Fluids and Coefficient of Friction</i>	3
	AHSE1197	Undergraduate Research in Arts Humanities and Social Sciences: <i>Diversifying Engineering Through Gateway Courses</i>	4
Fall 2004	ENGR1097	Undergraduate Research in Sciences: <i>Biophysics and Mathematical Modeling of Helical Ribbons</i>	3
	ENGR1097	Undergraduate Research: <i>Non-Newtonian Fluids and Coefficient of Friction</i>	2
Summer	ISR1200	Undergraduate Research: <i>Physico-chemical Properties of Helical</i>	2

2004	Ribbons		
Spring 2003	ENGR1097	Undergraduate Research: <i>Mathematical Modeling of Helical Ribbons</i>	1
	ISR 1200	Undergraduate Research: <i>Borodin Project</i>	1

B.2. Student Research, Advising, and Mentoring Activity Descriptions

B.2.1 Educational/Gender Studies

Research in Engineering Education: Project-Based Learning: Investigation of various pedagogical and curricular practices as well as learning and motivation in introductory STEM (Science, Technology, Engineering and Mathematics) courses and their affect on students', particularly women's, participation, performance, and interest in the field. Advised **twenty-two** Olin students: Olubukola Adebayo, Julie Baca, Rachel Boy, Jordyn Burger, Casey Canfield, Paige Cote, Ryan Eggert, Alexander Kessler, Katarina Miller, Janaki Perera, Madeline Perry, Geoffrey Pleiss, Rebecca Schutzengel, Jennifer Simonovich, Brittany Strachota, Boris Taratutin, Emily Towers, Alex Trzakovich, Lillian Tseng, Brendan Quinlivan, Diana Vermilya and Oren Zadik, Summer 2008 – present

Research in Engineering Education: Motivation: Investigation of situational motivation within engineering education context. The work is performed in collaboration with Jon Stolk. Advising **twelve students:** Jordyn Burger, Lilia Chan, Yun-Hsin Chen, Paige Cote, Pinar Demetci, Nitya Dhanushkodi, Margaret Lidrbauch, Caz Nichols, Cesar Santana, Rebecca Schutzengel, Robert Siegel, and Sarah Walters, Spring 2013 -- present

Research in Engineering Education: Discourse Analysis: Analysis of STEM classroom culture through discourse analysis. The work performed in collaboration with Verónica Darer (Wellesley College). Advised **seven students:** Gissell Castellon (Wellesley College), Ryan Eggert, Aditi Jsohi, Alexander Kessler, Saarth Mehrotra, Dakota Nelson, and Allison Tau (The Cooper Union). Spring 2012 -- present

Research in Engineering Education: Development of Teachers through Mindful Student-Centered Pedagogy: Analysis of STEM academic culture vis-à-vis students' and alumni desire to pursue teaching and teaching-related activities. The work performed in collaboration with Rebecca Christianson and Jeremy Goodman. Advised **five students:** Cecelia Aurswald, Adam Coppola, Doyung Lee, Anne LoVerso, and Geoffrey MacGillivray (Framingham State University); and **one teacher:** Daniel Jibson (Westwood High School). Spring 2012 -- present

Research in Engineering Education: Singapore – MIT Alliance for Research and Technology (SMART): The purpose of this project is to better understand the conditions that promote the development of interpersonal and intrapersonal skills for globally competent engineering students, specifically communication. It is our hypothesis that engineering education environments and curricular design impact the development of communication competencies. The project is in the beginning stages of development and I am trying to identify the ways in which Olin students may want to be involved. Fall 2014 -- present

Force Plate Research Project (co-advisor: Gill Pratt): Data collection and analysis regarding educational value of a “spinoff” project (design, build and evaluation of a force plate.) Ongoing work on a manuscript based on the results of this work. Advised **three Olin students:** Zachary Borden, Mark Cavolowsky, Jonathan Tse, Spring 2005 -- present

Diversifying Engineering through Gateway Courses (co-advisor: Maria Ong): Investigation of various pedagogical and curricular practices and their affect on students', particularly women's, participation in STEM (Science, Technology, Engineering and Mathematics). Advised **twelve Olin students:** Juliana Bernal-Ostos, Julie Baca, Casey Canfield, Kathleen Cummings, Anita Kalra, Jennifer Keene, Charleen Laughlin, Alison Lee, Katarina Miller, Sean Munson, Alex Trzakovich, Janet Tsai; **five graduate students:** Elizabeth Blair (Harvard Graduate School of Education,) Pamela-Jane Donovan (Tufts University,) Kathleen Farrell (Harvard Graduate School of Education,) Jim McQuaid (Boston University,) Rebecca Miller (Harvard Graduate School of Education); **one post-graduate scholar:** Corinne McKamey. Spring 2004 – Spring 2008

B.2.2 Physics

Biophysical Properties of Helical Ribbons: Calorimetric and optical studies of pseudo-phase diagram of cholesterol-rich filamentous, helical ribbon, and crystal microstructures. Advised **five students** (co-advisor: G. S. Iannacchione): Yekaterina Miroshnikova, Guanqing Ou, Rebecca Schutzengel, James Wu, and Quan Zeng, Spring 2010 – present

Biophysical Properties and Mathematical Modeling of Helical Ribbons: advised **fourteen students** (co-advisors: Burt S. Tilley and Joanne C. Pratt): Maysa Alavi, Lilly Cho, Dean Dieker, Katherine Elliott, Megan Elsenbeck, Johanna Itescu, Anita Kalra, Kathleen King, Karen Levi, Yekaterina Miroshnikova, Gunqing Ou, Robert Sobecki, Carmelle Tsai, Alexandra Tsoi, Summer 2004 – Fall 2009

Force Plate Research Project: advised **three students** (co-advisor: Gill Pratt): Design, build and evaluation of a force plate: Zachary Borden, Mark Cavolowsky, Jonathan Tse, Spring 2005 – Spring 2006

Non-Newtonian Fluids and Coefficient of Friction They Create: advised **four students** (co-advisor: Burt S. Tilley): Alexander Dorsk, Charleen Laughleen, Yekaterina Miroshnikova, David Wurtz, Spring 2005 – Summer 2006

Mathematical Modeling of Helical Ribbons: advised **one student** (co-advisor: Burt S. Tilley): Kathleen King, Spring 2003

B.2.3 Other

Borodin Project: advised **one student** (co-advisor: Diana Dabby): Polina Segalova, Spring 2003

C. Co-Curricular Activities

C.1. Educational/Gender Studies

Gender and Engineering (co-instructors: Caitrin Lynch, Lynn Andrea Stein, Debbie Chachra, Alisha L. Sarang-Sieminski, Jose-Oscar Mur-Miranda): Fall 2004 – Fall 2011, Spring 2013 – 2015

Self-Representation: Portfolio, Critical Reflection, Job Search (co-instructor Gillian Epstein with help of Sally Phelps and Suzanne Alcott): Fall 2014 – Spring 2015

Leading and Learning: an Exploration in Exporting Olin-inspired Experiences to K-12 Settings (co-instructors: Amon Millner and Ela Ben-Ur): Spring 2014

C.2. Other

Toolbox for Success and Self-Esteem: The Power of Communication (co-instructor Lynn Roberson): Fall 2009

Assertive, Buoyant, Cool The ABCs of Self-Esteem (co-instructor Lynn Roberson): Fall 2005

Art and Traditions of Middle Eastern Dancing: 2004 – 2006

D. Passionate Pursuits

Pole-Dancing: Fitness & Stigma (faculty advisor): Casey Alvarado, Yun-Hsin Chen, Mika Ichiki-Welches, and Jennifer Vaccaro, Spring 2015

Sketch Comedy Writing (faculty advisor): Aaron Greenberg and Jon McKay, Spring 2013

Open Water Scuba Diving (faculty advisor): Brittany Strachota, Fall 2012

Flying Trapeze (faculty advisor): Hayley Hansson, Fall 2012

Cupcakes (faculty advisor): Maggie Su and Erica Chin, Fall 2012

Aerial Silks (faculty advisor): Victoria Hamilton and Janaki Perera, Fall 2011

Vertical Dancing (faculty co-advisor): Philip Chung, Carisa Leal, Kathryn Sullivan, Chen Wang, Spring 2011

Clarinet Lessons (faculty advisor): Noura Howell, Spring 2011

Blues Dancing (faculty advisor): Jennifer Keene, James Regulinski, Fall 2010

Basic Woodworking and Pyrography (faculty advisor): Preeta Willemann, Fall 2010

Stand-Up Comedy (faculty advisor): Jonathan McKay, Spring 2010 - Fall 2010

Bartending (faculty advisor): Jennifer Simonovich, Nicholas Monje, Emily Towers, and Sarah E. Zimmerman, Spring 2010

Clarinet Lessons (faculty advisor): Noura Howell, Fall 2009

Cooking (faculty advisor): Jessica Murray, Hermes Taylor-Weiner, Spring 2009

An Olin College Engineering Discovery (faculty advisor): Heena Mutha, Spring 2008
Private Voice Study (faculty advisor): Bryn Hollen, Spring 2008
Motorcycling (faculty advisor): Joshua McCready, Spring 2008
Exploring the Language of Cantonese (faculty advisor): Justin Wong, Spring 2005
Beautiful Music with the Flute (faculty advisor): Johannah Itescu, Spring 2005
Exploring Kung Fu (faculty advisor): Dean Dieker, Mallory Chua, Christie Lee, Ginneh Cornelius, Spring 2005
Tae Kwan Do (faculty advisor): Dean Dieker, Johannah Itescu, Mallory Chua, Fall 2003 – Spring 2004
Russian Studies (instructor and faculty advisor): Polina Segalova, Fall 2002 – Fall 2004

E. Other Institutions

E.1. Worcester Polytechnic Institute (WPI)

Independent Qualifying Project (IQP): Physics Performance Data Mining (co-advisor: G. S. Iannacchione): Andrew R. Johns, Fall 2011 – Spring 2012
Independent Qualifying Project (IQP): Development of Inquiry-Based Mechanics Laboratory Materials (co-advisor: G. S. Iannacchione): Matthew C. Fredrick, Fall 2011 – Spring 2012
Independent Qualifying Project (IQP): Development of the Physics Toolbox: Surveying First-Year Student Laboratory Experience (co-advisor: G. S. Iannacchione): Jeremy T. Moody, Fall 2011 – Spring 2012
Independent Qualifying Project (IQP): Development of First-Year Physics Inquiry Labs (co-advisor: G. S. Iannacchione): Marc Umbricht, Fall 2010 – Spring 2011
Independent Qualifying Project (IQP): Physics Lab Toolbox 0907 Collisions Lab (co-advisor: G. S. Iannacchione): Joshua Faucher, Daniel Spitz, John Vilck, and Jennifer Wunschel, Fall 2009 – Spring 2010

E.2. Massachusetts Institute of Technology (MIT)

MITES (Minority Introduction to Engineering and Science): Taught at MIT, this rigorous six-week course introduces promising under-represented minority high school juniors to the field of Physics while building the self-confidence necessary for success. Teaching calculus-based introduction to Electricity and Magnetism on the level of an introductory college course in Physics. Summer 2005
MITES-SEED (Saturday Engineering Exploration and Discovery) Academy: Physics curriculum development consultant. The academy gears towards talented minority students from local high schools and leads these students throughout the 4 years prior to their entering college. 2002

V. Service Activities: 2002 - Present

A. Franklin W. Olin College of Engineering

A.1. Curriculum

Member, *Curriculum Innovation Committee*, Fall 2013 -- present

Member, *Engineering Program Group*, Fall 2003 – present

Member, *Bioengineering Program Group*, Fall 2003 – Spring 2012

Member, *Mathematics and Science Field Group (MSFG)*, Spring 2008 -- Spring 2012

Member, *Committee on Curriculum and Education*, Fall 2011

Member, *Academic Review Board (ARB)*, Fall 2008 – Spring 2010

Member, *Curricular Innovation Committee*, Fall 2009

A.2. Intellectual Vitality

Member, *Institutional Review Board (IRB)*, Spring 2008 -- Fall 2010

Co-Organizer and Co-Leader, *Qualitative Research Methods Workshop Series at Olin*, Summer 2007 – Fall 2007

A.3. Education in Science, Technology, Engineering, and Mathematics (STEM)

Member, *Collaboratory*, Fall 2014 - present

Member, *The Initiative for Innovation in Engineering Education (I2E2)*, Fall 2009 – Summer 2014

Advisor, *NAE Grand Challenge Scholars Program (GCSP)* at Olin, Spring 2010 – present

Advisor, *An Olin College Engineering Discovery (eDiscovery)*, Spring 2008 -- present

Participant, *The Three-College Collaboration Workshop*, Babson College, Wellesley, MA, January 2011, January 2012

Advisor, *The 2012 University Physics Competition*, Chase Kernan, George Herring, and Laurel Kroo, Fall 2012

Advisor, *The 2011 University Physics Competition*, Brendan Quinlivan, Rebecca Schutzengel, and Patrick Varin, Fall 2011

Advisor, *The 2010 University Physics Competition*, Jacob Miller, Erica D. Chin, and Clayton Gimenez, Fall 2010

Invited Panelist, *Workshop on Developing a National Network of Grand Challenge Scholars Programs (GCSP)*, F. W. Olin College of Engineering, Needham, MA, April 2010

Special Session Moderator and Workshop Participant, *Grand Challenge Scholars Program (GCSP) Workshop*, Advanced Micro Devices, Inc., Austin, TX, July 2011

Consultant, *Saturday STEM Academy* at Olin, Fall 2007 -- Fall 2009

Member, *Catalyzing Curricular Change Workshop at Olin for Change Agents*, Summer 2009

Member, *Engineer of the Future (EoT2.0) Workshop*, Spring 2009

Instructor, *LeadAmerica Workshop*, F. W. Olin College of Engineering, Summers 2006, 2007, and 2008

A.4. Diversity in Science, Technology, Engineering, and Mathematics (STEM)

Advisor, *Society of Women Engineers (SWE), Olin Chapter*, Fall 2010 -- present

Invited Speaker, “Diversity and Engineering,” a speaker and discussant for *Interesting Conversations* series co-sponsored by Olin Grand Challenge Scholars Program, SWE (Society of Women Engineers), and OPEN (Olin GLBQ club), November 2011

Member, discussion for creation of *Women’s Advisory Council* at F.W. Olin College of Engineering, January 2011

Co-Organizer and Member, *Committee on Diversity and Academic Environment*, Spring 2005 – Spring 2007

Co-Organizer and Co-Leader, *Gender and Engineering Co-Curricular*, Fall 2005 – Fall 2011

Co-Organizer and Co-Leader, *Swiss Equal Opportunity Managers Meeting*, Spring 2005

Faculty Advisor and Member, *Women in Science and Engineering Group and SWE*, 2003 – 2004

A.5. College Governance and Policies

Member, President's Internal Advisory Council (PIAC), March 2008 – Spring 2009

Member, Wellesley-Olin Working Group (WOW), Fall 2002 – Spring 2007

Chair, Ad-Hoc Fact-Finding Committee on Faculty Parental Leave Policy, Fall 2005

Member, Grading and Competencies Task Group, 2002 -- 2005

Convener, BBOW (Babson-Brandeis-Olin-Wellesley) Task Group, 2002 – 2003

Member, Inauguration Committee, 2003

A.6. Search Committees

Participant, interviewer in a number of on-campus faculty search interviews, Spring 2013, Spring 2014, Spring 2015

Member, Dean of Student Life Search Committee, Fall 2012 – Spring 2013

Participant, Computer Science Search, Spring 2013

Participant, Computer Science Search Committee (adjunct position), Spring 2011

Member, Bioengineering Search Committee (adjunct position), Summer 2009

Member, Bio/Bioengineering Search Committee, Spring 2009

Member, Bioengineering Faculty Search Committee, 2005

Member, Physics/Engineering Physics Faculty Search Committee, 2004

A.7. Advising

Academic Advisor, 2002 – present

Co-Leader, Career Initiatives Workshop, Fall 2009, Spring 2011

Member, Student Experiences Committee (SEC), Fall 2007 -- Spring 2008

Co-Organizer and Co-Leader, Career Initiatives Day, "If Not Engineering, Then What?" Session, October 2008

Member, Advising Advisory Group, Spring 2003 – Spring 2008

Faculty Advisor, Support Encourage, and Recognize Volunteerism (SERV), 2004 – 2006

Co-organizer and Co-Leader, "Storytelling under the Stars," 2002 – 2007

Faculty Representative, Family Weekend, 2002

A.8. Admission

Faculty Presenter, Candidates' Weekends, Spring 2015

Interviewer, Candidates' Weekends, 2002 – Spring 2011, Spring 2013

Faculty Representative, Individual interviews and conversations with prospective students and their parents, Spring 2002 -- present

Faculty Representative, Admissions' Prospectus and Women's Open House Flyer Design, Summer 2007 – Spring 2008

Faculty Representative, Open Houses, 2002 – 2007

Faculty Representative, Women's Open Houses, 2004 – 2006

Reader, Admission Committee, 2003 – 2005

B. Profession

B.1. Education and Policy

Member, *NAE's Grand Challenge Scholars Program National Steering Committee*, May 2014 - present

Co-PI, *Summer Experience in Education Research (SEER) REU/RET Program at Olin*, Fall 2012 - present

Member, *External Advisory Board for Science Learning in Engineering Design (SLED) MSP NSF Project*, Purdue University, Spring 2012 – present

Member, *Instruction as Participation in Knowledge Formation Workshop*, Spencer Foundation, Spring 2014

Reviewer, *ASEE Apprenticeship Faculty Grant Program*, Spring 2015

Reviewer, *National Association for Research in Science Teaching (NARST)*, Strand 5: College Science Teaching and Learning, Summer/Fall 2007, 2014

Reviewer, *ASEE/IEEE Frontiers in Education Conference Proceedings*, Spring 2013, Spring 2014

Reviewer, *American Educational Review Journal – Social and Institutional Analysis*, Spring 2014

Advisor, Westwood High School Engineering Design curriculum development and implementation, Fall 2012 -- present

Advisor, Newburyport High School Engineering Design curriculum development and implementation, Fall 2011 – Spring 2013

Reviewer, *Advances in Engineering Education*, July 2011

Reviewer, NSF Panel, May 2011

Founding Group and Board of Trustees Member, *Spirit of Knowledge Charter School (SOKCS)*: STEM middle and high school that opened in the Fall 2010 in Worcester, MA, November 2009 – April 2011

Member, *Education Committee*, Spirit of Knowledge Charter School (SOKCS): STEM middle and high school that opened in the Fall 2010 in Worcester, MA, November 2009 – April 2011

Executive Committee and Founding Member, *Global Technology and Engineering Consortium (GTEC)*: development of an international program with a new diversity and engineering curriculum geared towards middle school through higher education students, February 2010 – June 2011

Participant, DOME (Diversity and Outreach in Mathematics and Engineering) Foundation Symposium at Raytheon, November 2009

Reviewer, *International Journal of Engineering Education*, May 2007

Coordinator, *National Association for Research in Science Teaching (NARST)*, Strand 5: College Science Teaching and Learning, 2005 –2007

Co-founder and member, The Project SEED (Science and Engineering Equity and Diversity) Initiative, The Civil Rights Project at Harvard University Cambridge, MA, 2005 – 2008

Physics Curriculum Consultant, MITES-SEED Academy (Saturday Engineering Enrichment and Discovery), MIT, Cambridge, MA, 2001 – 2002

B.2. Diversity in Science, Technology, Engineering, and Mathematics (STEM)

Reviewer, NSF Panel, January 2010

Chair, *Committee on Diversity and the Academic Environment*, Spirit of Knowledge Charter School (SOKCS): STEM middle and high school that opened in the Fall 2010 in Worcester, MA, November 2009 – April 2011

Speaker and Session Panelist, Women in Technology Summit (WiTS!), Harvard University, Cambridge, MA, February 2008

Session Chair and a Panelist, “Path of Professorship” Workshop, MIT, Cambridge, MA, Fall 2006

Advisor, “Forward to Professorship” Workshop, MIT, Cambridge, MA, Fall 2005

Session Chair and a Panelist, “Path of Professorship” Workshop, MIT, Cambridge, MA, Fall 2006

Advisor, “Forward to Professorship” Workshop, MIT, Cambridge, MA, Fall 2005

Member, “Ladies in the Lab: Women Conquering Science and Engineering” Workshop, MIT, Cambridge, MA, October 2003

B.3. American Physical Society / Women in Physics

Mentor, one of the Blewett Scholarship Winners, 2008 – present

Special Editor and Leader, U.S. Delegation to the 3rd *IUPAP (International Union of Applied and Pure Physics) Conference on Women in Physics* of post-conference dissemination efforts, 2008 – 2010

Member, *Gender Equity Conversations*, American Physical Society (APS) effort, Spring 2009 -- present

Invited Session Organizer and Chair, *What Works for Women in Physics*, American Physical Society (APS), Portland, OR, March 2010

Member, Committee on Status of Women in Physics, Special Committee of the American Physical Society (APS), 2007 – 2009

Guest Editor, *Committee on the Status of Women in Physics (CSWP) Gazette, The Newsletter of the Committee on the Status of Women in Physics of the American Physical Society*, **28**(1), Spring 2009

Co-Leader, USA Delegation to the 3rd *International Union of Pure and Applied Physics (IUPAP) Conference on Women in Physics*, Seoul Korea, October 2008

Member, M. Hildred Blewett Scholarship Committee, Summer 2008, 2009

Session Panelist, “Nuts and Bolts of the Academic Job Search,” MIT, Cambridge, MA, July 2008

Member, USA Delegation to the 2nd *International Union of Pure and Applied Physics (IUPAP) Conference on Women in Physics*, Rio de Janeiro, Brazil, May 2005

Member, USA Delegation to the 1st *International Union of Pure and Applied Physics (IUPAP) Conference on Women in Physics*, Paris, France, March 2002

Faculty Co-Advisor, Society of Physics Students (SPS), Wellesley College, Wellesley, MA 2001 – 2002

B.4. Science, Technology, Engineering, and Mathematics (STEM)

Reviewer, NSF Panel, Spring 2007

C. Professional Membership

Member, *National Association for Research In Science Teaching (NARST)*, 2004 – 2006, 2015

Member, *The American Society for Engineering Education (ASEE)*, 2005 – present

Member, *American Physical Society (APS)*, 1995 – present

Member, *Society for Industrial and Applied Mathematics (SIAM)*, 2006 -- 2007

VI. Selected Honors and Awards

- 2012 First place in 2011 University Physics Competition (Advisor to Brendan Quilivan, Rebecca Schutzengel, and Patrick Varin)
- 2011 Second place in the BEST PAPER for the First-year Programs Division at American Society for Engineering Education (ASEE)
- 2010 Best Student Presentation for the First-Year Program Division at American Society for Engineering Education (ASEE)
- 2010 Accomplished Competitor in the 2010 University Physics Competition (Advisor to Jacob Miller, Erica D. Chin, & Clayton Giminez)
- 2009 Third place in the BEST PAPER for the First-year Programs Division at American Society for Engineering Education (ASEE)
- 2009 Selected as one of six U.S. representatives to the International Workshop for Research on PBL in Engineering Education, Loughborough University, UK
- 2008 APS Professional Skills Development Workshop and Scholarship
- 2008 APS Childcare Grant
- 2007 Top five finalist for the 2006 Benjamin J. Dasher Award at the 2006 Frontiers in Education Conference
- 1995 Forum Departmental Fellowship, MIT
- 1995 NSF Graduate Fellowship Honorable Mention
- 1995 Magna Cum Laude, Yale University
- 1995 Distinction in Physics award, Yale University
- 1994 NSF Fellowship at the University of Chicago
- 1993 Yale AMPS (Academic Mentorship Program in Science) Summer Fellowship
- 1991 – 1995 National Dean’s List
- 1991 – 1995 Yale Club of Hartford Scholarship
- 1991 – 1995 Yale University Scholarship

VII. Personal

Linguistic Skills: Native language is *Russian*. Fluent in the *Ukrainian* and *English* languages.

Interests: Playing Piano, Singing, Comparative Religion and Philosophy, Eastern Dancing Styles.