MISSOURI S&T University of Science & Technology

Formerly University of Missouri-Rolla

THERESA M. SWIFT
Missouri University of Science and Technology
Department of Electrical and Computer Engineering
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PROFESSIONAL INTERESTS:

Engineering Education, Pre-college Education, Smart Structure Sensor Systems, and Optics

DEGREES:

Ph.D. in Electrical Engineering, Missouri University of Science and Technology, August 2009;
3.718/4.000 G.P.A.; Emphasis Area: Optical Engineering and Electromagnetics
Dissertation Title: "Autonomous Triggering System and Measurement Protocols for Sensor Measurements on a Bridge." Advisor: Steve E. Watkins

M.S. in Electrical Engineering, University of Missouri-Rolla, August 2003;
3.719/4.000 G.P.A.; Emphasis Area: Optical Engineering and Electromagnetics
Thesis Title: "Engineering Education on the Playground: K-4 Science Resources." Advisor: Steve E. Watkins

M.S. in Applied Mathematics, University of Missouri-Rolla, December 1992;
3.636/4.000 G.P.A.; Advisor: Michael Hilgers

B.S. in Mathematics, Southeast Missouri State University, December 1990;
3.661/4.000 G.P.A.

ACADEMIC EXPERIENCE:

Aug. 2009 – Present	Assistant Teaching Professor, Department of Electrical and Computer Engineering, Missouri University of Science and Technology (S&T), formerly University of Missouri-Rolla (UMR)
Aug. 2002 – Present	Instructor, Problem Solving Workshop, S&T, Opening Week math workshop
Aug. 2003 – July 2009	Graduate Teaching Assistant, Departments of Electrical and Computer Engineering and Mathematics and Statistics, S&T
Aug. 1995 – July 2002	Lecturer, Department of Mathematics and Statistics, UMR.
Jan. 1991 – Sept. 1994	Graduate Teaching Assistant, Department of Mathematics and Statistics, UMR

PROFESSIONAL SERVICE AND ACTIVITIES:

American Society of Engineering Education (ASEE)
Midwest Section of ASEE, Past Chair 2012-2013
Chair 2011-2012
Chair-Elect/Awards Chair 2010-2011
Conference Planning Committee, 2012 ASEE Midwest Conference, Rolla, MO

IEEE-Eta Kappa Nu, ECE Honor Society, Elected 2002

CAMPUS SERVICE AND ACTIVITIES:

Faculty Advisor to the Gamma Theta Chapter of IEEE-Eta Kappa Nu (IEEE-HKN), 2010-Present
ECE Honor Society (one of three advisors for the chapter with responsibilities for supervising pledge recruitment and activities)
Chapter was recognized with an Outstanding Chapter Activities Award, 2012, 2011, & 2010

Departmental Curriculum Committee member, Department of Electrical and Computer Engineering, 2011-Present

Discipline Specific Curriculum Committee-Engineering (DSCC) member, 2012-Present

Future Engineers (FE) Electricity and Magnetism review, Missouri University of Science and Technology, Spring 2013-Present

STUDENT SUPERVISION:

Undergraduate Honors Projects (3 projects)
A Brief History of Semiconductor Materials and Devices (Research Paper)
Analysis of the Frequency Response of an RC Filter (Laboratory Project with Computer Simulations and a Formal Report)
Theory and Application of Common Sensors (Research Paper)

TEACHING PERFORMANCE (LAST 2 YEARS):

Spring 2013	EE 153 Circuits II	(3.85/4.00, 3.88/4.00, 3.88/4.00, 3.25/4.00)
Fall 2012	EE 153 Circuits II	(3.80/4.00, 3.73/4.00)
	EE 281 Electrical Circuits– service course for non-EE/CpE majors	(3.25/4.00)
Spring 2012	EE 153 Circuits II	(3.54/4.00, 3.52/4.00, 3.85/4.00)
Fall 2011	EE153 Circuits II	(3.73/4.00, 3.65/4.00, 3.88/4.00)

AWARDS:

Faculty Achievement Award, Missouri University of Science and Technology, 2013

Outstanding Educator Award Recipient, Saint Louis Section of the Institute of Electrical and Electronics Engineers (IEEE), 2011

Outstanding Teaching Award, Missouri University of Science and Technology, 2011-2012

eFellows Grant recipient, Missouri University of Science and Technology, 2011 (see below)

CURRICULUM DEVELOPMENT:

Blended Instruction (Supported by campus eFellows Grant) - Online Lecture Module Preparation
EE 153 Circuits II (Required Sophomore-level Course for EE and CpE Majors)
Blended Instruction Implementation for FS 2011 to Present

PUBLICATIONS, PAPERS, AND OTHER SCHOLARLY WORK:

T.M. Swift, B. Wilkins, "A Partial Flip, A Whole Transformation: Redesigning Sophomore Circuits," *ASEE Annual Conference and Exposition Proceedings*, 2013, Indianapolis, IN, (Draft Paper Submitted).

A. Kaur, S.E. Watkins, **T. M. Swift**, "Vehicle Positioning Using Image Processing," Proceedings of SPIE, Vol. 7292, *Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems 2009*, 8-12 March 2009.

A. Perry, S.E. Watkins, R. Flori, **T. M. Swift**, "Work in Progress – Instrumentation on a Truss Adapted for Pre-College Outreach," *ASEE/IEEE Frontiers in Education Conference*, 22-25 October 2008, Saratoga Springs, NY.

S. E. Watkins, **T.M. Swift**, J. W. Fonda, "Development of Autonomous Triggering Instrumentation," Proceedings of SPIE, Vol. 6932, *Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems 2008*, 8 April 2008.

S. E. Watkins, **T.M. Swift**, "Work in Progress – Tailoring Optics Resources for K-5 Pre-college Outreach," *ASEE/IEEE Frontiers in Education Conference*, 10-13 October 2007, Milwaukee, WI.

S.E. Watkins, **T.M. Swift**, M.J. Molander, "RFID Instrumentation in a Field Application," *IEEE Region V Technical Conference*, 20-22 April 2007, Fayetteville, AR.

T.M. Swift, S.E. Watkins, "An Engineering Primer for Outreach to K-4 Education," *Journal of STEM Education: Innovations and Research*, 5(3/4), 67-76, (2004). Available WWW: http://www.jstem.org/.

T. M. Swift, S.E. Watkins, K. Swenson, E. Lasater, R. Mitchell, "Involving Engineering with In-Service K-4 Teachers," *ASEE Annual Conference and Exposition Proceedings*, 2003, Nashville, TN.