

Teri J. Murphy
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Department of Mathematics, University of Oklahoma
601 Elm Ave. PHSC 423
Norman, OK 73019

EDUCATION

Ph.D. in Mathematics Education, May 1995. University of Illinois at Urbana-Champaign
Dissertation (directed by Professor Kenneth J. Travers): *College Mathematics Instruction in Transition: A Study of Reform in a College Algebra Course for 'At-Risk' Students*
M.S. in Mathematics, August 1994. University of Illinois at Urbana-Champaign
M.S. in Applied Mathematics, October 1990. University of Illinois at Urbana-Champaign
Area: Optimization
B.S. in Mathematics (magna cum laude), June 1987. Kent State University.
Undergraduate Honors Thesis (directed by Professor Victor Nicholson): *Metrics on the Space of Graphs*

POSITIONS HELD

Department of Mathematics, Northern Kentucky University
Associate Professor (2009)
Kentucky Center for Mathematics
[title??] (2009)
Department of Mathematics, University of Oklahoma
Full Professor (2008)
Associate Professor (2002 to 2008)
Assistant Professor (1996 to 2002)
Division of Instructional Development, Office of Instructional Resources, University of Illinois at Urbana-Champaign
Specialist in Education (1993 to 1996)
Summer Bridge and Transition Program, University of Illinois at Urbana-Champaign
Transition Mathematics Coordinator (1989 to 1993)
Mathematics Instructor and Course Coordinator (1988 to 1992, Summers only)
Department of Mathematics, University of Illinois at Urbana-Champaign
Visiting Lecturer (1995 to 1996)
Visiting Teaching Associate (1994 to 1995)
Teaching Assistant (1987 to 1989)

HONORS AND AWARDS

- University of Oklahoma Regents' Award for Superior Research, 2008.
- Good Teaching Award, OU, 2003.
- Educators' Leadership Academy/Outstanding Professors' Academy, 2002-2003.
- Mathematics Graduate Student Organization Outstanding Teaching Award, OU, 1999.
- Project NExT Fellow, 1996-1997 (Blue Dot).
- *List of Teachers Ranked as Excellent by Their Students*, UIUC, 1988-1995.
- Mathematics Instructional Award, UIUC, 1990.
- University Fellowship in Mathematics, UIUC, 1987-1988.

RESEARCH AND CREATIVE ACTIVITY

External Grants

ADVANCE PAID: Promoting Institutional Change at the University of Oklahoma and within the Big XII Conference

- PI Catherine Mavriplis (NOAA National Severe Storms Laboratory)
- Co-PIs Kelly Damphousse (Sociology and Associate Dean of Arts & Sciences), Sheena Murphy (Physics and Astronomy), **Teri J. Murphy**, Lori Snyder (Psychology)
- National Science Foundation ADVANCE Program for Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers (award #0620102)
- 10/01/2006-09/30/2009, \$500,000

Classroom Response Systems in Statistics Courses

- PI **Teri J. Murphy**
- Co-PIs Curtis McKnight (Mathematics), Mike Richman (Meteorology), Robert Terry (Psychology)
- National Science Foundation Course, Curriculum, and Laboratory Improvement Program (award #0535894)
- 05/01/2006-04/30/2008, \$132,761

Portraying Success Among URM Engineering Majors

- PI Randa Shehab (Industrial Engineering)
- Co-PIs **Teri J. Murphy**, Jeanette Davidson (African and African-American Studies; Social Work), Teri Reed-Rhoads (Industrial Engineering), Deborah Trytten (Computer Science), and Susan Walden (K20 Center for Educational and Community Renewal)
- National Science Foundation STEM Talent Expansion Program (award #0431642)
- 01/01/2005-12/31/2007, \$1,444,284

Why Does It Work? A Study of Successful Gender Equity in Industrial Engineering at the University of Oklahoma

- PI **Teri J. Murphy**
- Co-PIs Betty Harris (Women's Studies; Anthropology), Teri Reed-Rhoads (Industrial Engineering), Randa Shehab (Industrial Engineering), and Deborah Trytten (Computer Science)
- National Science Foundation Program for Gender Equity (award #0225228)

- 01/01/2003-12/31/2005, \$899,562

The Statistics Concept Inventory (SCI): A cognitive achievement tool in engineering statistics

- PI Teri Reed-Rhoads (Industrial Engineering)
- Co-PI **Teri J. Murphy**
- National Science Foundation Assessment of Student Achievement in Undergraduate Education program (award #0206977)
- 09/01/2002-08/31/2005, \$499,997

Refereed Journal Articles

Martin, J. H., Hands, K. B., Lancaster, S. M., Trytten, D. A., & **Murphy, T. J.** (in press). Hard but not too hard: Challenging courses and engineering students. To appear in *College Teaching* (Winter 2008).

Allen, K., Reed-Rhoads, T., Terry, R. A., **Murphy, T. J.**, & Stone, A. D. (in press). Coefficient alpha: An engineer's interpretation of test reliability. To appear in the *Journal of Engineering Education* (January 2008).

Murphy, T. J., Shehab, R. L., Reed-Rhoads, T., Foor, C. E., Harris, B. J., Trytten, D. A., Walden, S. E., Besterfield-Sacre, M., Hallbeck, M. S., & Moor, W. C. (2007). Achieving parity of the sexes at the undergraduate level: A study of success. *Journal of Engineering Education* 96(3), pp. 241-252.

Brown, C. M. & **Murphy, T. J.** (2005). Understanding student learning in undergraduate information studies internships. *Journal of Education for Library and Information Science* 46(3), pp. 234-247.

Speer, N., Gutmann, T., & **Murphy, T. J.** (2005). Mathematics teaching assistant preparation and development. *College Teaching* 53(2), pp. 75-80.

McCreary, P., Murphy, T. J., & Carter, C. (2005). The Modular Group. *The Mathematica Journal* 9(3), pp. 564-582.

Harris, B. J., Reed-Rhoads, T., Walden, S. E., **Murphy, T. J.**, Meissler, R., & Reynolds, A. (2004). Gender equity in industrial engineering: A pilot study. *NWSA Journal (National Women's Studies Association)*, 16(1), pp. 186-193.

Brown, C., **Murphy, T. J.**, and Nanny, M. (2003). Turning techno-savvy into info-savvy: Authentically integrating information literacy into the college curriculum. *The Journal of Academic Librarianship*, 29(6), pp. 386-398.

Murphy, T. J., & Wahl, K. (2003). Adapting a workshop calculus model to college algebra: Instructional challenges. *American Mathematical Association of Two-Year Colleges Review*, 24(2), pp. 33-44.

Murphy, T. J. (2001). Developing snapshots of mathematics classrooms: Efforts to describe teaching practices. *College Teaching*, 49(1), 9-13.

Brown, C. & **Murphy, T. J.** (2000). Research in undergraduate mathematics education. *Reference Services Review*, 28(1), pp. 65-80.

Murphy, T. J., Goodman, R. E., & White, J. J. (1999). Using the WWW in multivariable calculus to enhance visualization. *International Journal of Engineering Education*, 15(6), pp. 425-431.

Murphy, T. J., Stafford, K. L., McCreary, P. (1998). Subsequent course and degree paths of students in a Treisman-style workshop calculus program. *Journal of Women and Minorities in Science and Engineering*, 4(4), pp. 381-396.

Book and Refereed Book Chapter

- Hsu, E., **Murphy, T. J.**, & Treisman, U. (in press). Supporting High Achievement in Introductory Collegiate Mathematics Courses: What We Have Learned from 30 Years of the Emerging Scholars Program. To appear in the forthcoming MAA Notes volume M. Carlson & C. Rasmussen (Eds.), *Making the Connection: Research and Practice in Undergraduate Mathematics*. Washington, DC: Mathematical Association of America.
- McKnight, C., Magid, A., **Murphy, T.J.**, & McKnight, M. (2000). *Mathematics Education Research: A Guide for the Research Mathematician*. Providence, RI: American Mathematical Society.

Conference Proceedings Papers

- Murphy, T. J.**, McKnight, C. C., Richman, M., & Terry, R. (March 2008). Using clickers: Experiences in introductory statistics courses. *Proceedings of the Twentieth Annual International Conference on Technology in Collegiate Mathematics*, San Antonio. (5 pp)
- Speer, N., Gutmann, T., & **Murphy, T. J.** (October 2007). Research on mathematics graduate teaching assistants: Developments in theory and applications (a Working Group report). *Proceedings of the XXIX Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*, Lake Tahoe, NV.
- Shehab, R. L., Davidson, J. R., **Murphy, T. J.**, Reed-Rhoads, T., Trytten, D. A., & Walden, S. E. (June 2007). Experiences as a non-majority engineering student. *Proceedings of the 2007 American Society for Engineering Education Annual Conference and Exposition*, Honolulu.
- Murphy, T. J.**, Shehab, R. L., & Reed-Rhoads, T. (October 2006). A multi-institutional study of student perceptions of industrial engineering. *Proceedings of the 2006 Frontiers in Education Conference*, San Diego.
- Speer, N., Gutmann, T., & **Murphy, T. J.** (October 2006). Basic and applied research into the lives and practices of mathematics graduate teaching assistants: Advancing theory and informing practice (a Working Group report). *Proceedings of the XXVIII Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*, Merida, Yucatan, pp. 83-91.
- Reed-Rhoads, T., **Murphy, T. J.**, & Trytten, D. A. (October 2005). A study of gender parity: Department culture from the students' perspective. *Proceedings of the 2005 Frontiers in Education Conference*, Indianapolis, pp. F2G1-F2G6.
- Gutmann, T., Speer, N., **Murphy, T. J.** (October 2005). Mathematics teaching assistant preparation and development. In G. Lloyd, M. Wilson, J. Wilkins & S. Behm (Eds.), *Proceedings of the XXVII Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*, Roanoke, VA.
- Shehab, R. L., Reed-Rhoads, T., & **Murphy, T. J.** (June 2005). Industrial Engineering: Why students come and what makes them stay? *Proceedings of the 2005 American Society for Engineering Education Annual Conference and Exposition*, Portland, OR.
- Lancaster, S. M., Walden, S. E., Trytten, D. A., **Murphy, T. J.** (June 2005). The contribution of office-hours-type interactions to female student satisfaction with the educational experience in engineering. *Proceedings of the 2005 American Society for Engineering Education Annual Conference and Exposition*, Portland.

- Gutmann, T., Speer, N., **Murphy, T. J.** (October 2004). Mathematics teaching assistant preparation and development. In D. E. McDougall & J. A. Ross (Eds.), *Proceedings of the XXVI Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*, Toronto, pp. 75-78.
- Trytten, D. A., Shehab, R. L., Reed-Rhoads, T., Fleener, M. J., Harris, B. J., Reynolds, A., Walden, S. E., Moore-Furneaux, S. K., Kvach, E., Warram, K. R., & **Murphy, T. J.** (June 2004). "Inviteful" engineering: Student perceptions of industrial engineering. *Proceedings of the 2004 American Society for Engineering Education Annual Conference and Exposition*, Salt Lake City.
- Allen, K., Stone, A. D., Reed-Rhoads, T., & **Murphy, T. J.** (June 2004). The Statistics Concept Inventory: Developing a valid and reliable instrument. *Proceedings of the 2004 American Society for Engineering Education Annual Conference and Exposition*, Salt Lake City.
- Gutmann, T., Speer, N. & **Murphy, T. J.** (October 2002). Mathematics Teaching Assistant Preparation and Development. *Proceedings of the XXIV Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*, Athens, GA, pp. 143-151.
- Matney, G. & **Murphy, T. J.** (September 2002) On-line diagnostic mathematics test for high school students. *Proceedings of the Thirty-Seventh ASEE Midwest Section Conference and Workshops*, Norman, OK.
- Murphy, T. J.**, White, J. J., Stone, A. D., & Beauchamp, A. M. (July 2002). Using web-based interactive graphics to enhance understanding of parametric equations: Lessons learned. *Proceedings of the Second International Conference on Teaching Mathematics at the Undergraduate Level*, Hersonissos, Crete, Greece.
- Murphy, T. J.** & White, J. J. (November 2001) Student use and perceived usefulness of technology resources. *Proceedings of the Fourteenth Annual International Conference on Technology in Collegiate Mathematics*, Baltimore, pp. 202-206.
- Murphy, T. J.** (November 1999). Recognizing a surface from different viewpoints: Results from a questionnaire item and task-based interviews. *Electronic Proceedings of the Twelfth Annual International Conference on Technology in Collegiate Mathematics*, San Francisco.
- Murphy, T. J.** (October 1999). Using computers to facilitate visualization in multivariable calculus: A variety of options. *Proceedings of the Twenty First Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*, Cuernavaca, Morelos, Mexico, p. 410.
- Murphy, T. J.**, White, J. J., Kline, B. J., Black, E., Goodman, R., & Hofer, M. (June 1999). Using *Mathematica* with multivariable calculus. *Proceedings of the 1999 American Society for Engineering Education Annual Conference and Exposition*, Charlotte.

Expository Writing

- Murphy, T. J.** (2003, Summer). The Importance of Community in Building Diversity. *Mathematicians and Education Reform Forum Newsletter: Special Issue on Increasing the Diversity of Students in Mathematics* 15(3). pp. 2-5.
- Murphy, T. J.**, Branson, W., Friedberg, S., Kappe, L. C., Madden, J., Manderscheid, D., Mantini, L., Marchisotto, E., McCreary, P., Nestler, A., Novak, J., Plisch, S., Speer, N., Wilson, J., & Zia, L. (2000, May/June). Innovative Programs Address Professional Development of Teaching Assistants & Adjuncts. *FOCUS: The Newsletter of the*

Mathematical Association of America, 20(5), 9.

Murphy, T. J. (1996, March 5). Professor's generalizations unfounded [letter to the editor]. *Daily Illini*.

Murphy, T. J. (1993, August). Reconciling expectations with reality: An interview with a Geology TA. *UIUC Graduate Student Newsletter*.

Presentations

“Using Clickers: Experiences in Introductory Statistics Courses”, Twentieth Annual International Conference on Technology in Collegiate Mathematics, San Antonio, March 2008.

“Using Clickers in Introductory Statistics to Enhance Conceptual Understanding”, MAA contributed paper session *Using Innovative Technologies to Implement Active Learning in Mathematics (and Other STEM Disciplines)*, Joint Mathematics Meetings, San Diego, January 2008.

"Classroom Response Systems in Statistics Courses", MAA Poster Session on *Projects Supported by the NSF Division of Undergraduate Education*, Joint Mathematics Meetings, San Diego, January 2008.

"Clicker Questions for Conceptual Understanding", SIGMAA on Statistics Education Contributed Paper Session *Innovative Ideas for Teaching Concepts in an Introductory Statistics Class*, MAA MathFest, San Jose, August 2007.

"Using Multiple Choice Questions to Enable Immediate Feedback for Learning and Instruction", *Idea Exchange Forum*, United States Conference On Teaching Statistics, Columbus, May 2007.

"Classroom Response Systems in Statistics Courses", MAA Poster Session on *Projects Supported by the NSF Division of Undergraduate Education*, Joint Mathematics Meetings, New Orleans, January 2007.

"Findings from a Study of Gender Parity", SIGMAA on RUME session *Research on the Teaching and Learning of Undergraduate Mathematics*, Joint Mathematics Meetings, San Antonio, January 2006.

"The Statistics Concept Inventory: An Instrument for Assessing Student Understanding of Statistics Concepts", SIGMAA on Statistics Education session *First Steps for Implementing the Recommendations of the Guidelines for Assessment and Instruction in Statistics Education (GAISE) College Report*, Joint Mathematics Meetings, San Antonio, January 2006.

[invited plenary and breakout] "Achieving Gender Parity: A Story of Success", AMS-MER Workshop on Excellence in Undergraduate Mathematics: Mobilizing for the Future, Tempe, December 2005.

[invited] "Research on Undergraduate Persistence", session *Closing the Gap Between Understanding and Action: Strategic Issues in Diversity* sponsored by the Committee on Minorities in Physics, American Association of Physics Teachers Summer Meeting, Salt Lake City, August 2005.

[invited, with Eric Hsu] "Research and Practice: Undergraduate Math Performance and Persistence of Underrepresented Minorities", session *Research-to-Practice* sponsored by the SIGMAA on RUME, MAA MathFest, Albuquerque, August 2005.

panelist on *Ph.D. Programs in Research in Undergraduate Mathematics Education*, panel session sponsored by the SIGMAA on RUME Guidelines Committee, Joint Mathematics

- Meetings, Atlanta, January 2005.
- panelist at the *Engineering and Education Collaborations* workshop, American Society for Engineering Education Annual Conference and Exposition, Salt Lake City, June 2004.
- "Achieving a Department Climate that Attracts Majors", MAA Session on *Strategies that Work to Positively Change Student Attitudes Toward Mathematics*, Joint Mathematics Meetings, Phoenix, January 2004.
- [invited plenary and breakout] "Community as a 'Best Practice' in Retaining Students: A Synthesis of Research on Retention of Students" and "Department Culture Affects Recruitment and Retention of Majors", AMS-MER Workshop on Excellence in Undergraduate Mathematics: Lessons Across the Curriculum, Anchorage, September 2003.
- panelist on *Forum on Strategies for Increasing the Diversity of Students in Mathematics*, AMS-MAA-MER Special Session on Mathematics and Education Reform at the Joint Mathematics Meetings, Baltimore, January 2003.
- (with Gabriel Matney) "On-line Diagnostic Mathematics Test for High School Students", Thirty-Seventh ASEE Midwest Section Conference and Workshops, Norman, OK, September 2002.
- "Using web-based interactive graphics to enhance understanding of parametric equations: Lessons learned", Second International Conference on Teaching Mathematics at the Undergraduate Level, Hersonissos, Crete, Greece, July 2002.
- (with Angela Beauchamp and Jared DeSellier) "Using Java Applets to Enhance Understanding: Lessons Learned", Mathematical Java Conference, Emporia, KS, June 2002.
- [invited, with Gideon Weinstein] "What mathematicians absolutely, positively, have to know about mathematics education research", NEXt session, Joint Mathematics Meetings, San Diego, January 2002.
- "Student Use and Perceived Usefulness of Technology Resources," Fourteenth Annual International Conference on Technology in Collegiate Mathematics, Baltimore, November 2001.
- panelist on *TA and Instructor Development*, Boston College Case Studies Project Summer Workshop for Faculty, Weston, MA, July 2001.
- (with Darren Narayan) "CalcLets: Interactive Web-based Learning Tools for Calculus", Mathematical Java Conference, Emporia, KS, June 2001.
- "The Preparation Needs of Graduate Teaching Assistants", Working Group for Action: Mathematics Education in Universities at the Ninth International Congress on Mathematics Education, Makuhari, Japan, August 2000.
- "Using Computers to Facilitate Visualization in Multivariable Calculus: A Variety of Options," Fourth Annual Conference on Research in Undergraduate Mathematics Education, Chicago, September 1999.
- "Developing Snapshots of Undergraduate Mathematics Classrooms: Evolving Efforts to Describe Instructional Practices Via Classroom Observations," ARUME contributed paper session, MAA MathFest, Providence, July 1999.
- [invited, with Gideon Weinstein] "Proof-Based Thinking Vs. Evidence-Based Thinking", MAA MathFest NEXt Pre-Session, Providence, July 1999.
- panelist on *Case Studies in Curriculum Reform*, Joint Mathematics Meetings, Baltimore, January 1998.
- "College Mathematics Instructors in Transition," MAA Session *Developmental Programs That Work*, Joint Mathematics Meetings, Baltimore, January 1998.
- "The Silent Treatment: An Attempt to Bridge the Distance Between 'At-Risk' Students and

Mathematics," MAA session *Developmental Programs that Work*, Joint Meetings, San Diego, January 1997.

"Which Way Did They Go? Which Way Did They Go? Examining Transcript Records of Students Who Took Workshop-Style Calculus," MAA session *Reformed Calculus in Performance: What Works, What to Fix*, MAA MathFest 1996, Seattle, August 1996.

"The UIUC Transition Program: Promoting Access to College Mathematics", sponsored by the Office of Mathematics, Science, and Technology Education at the University of Illinois at Urbana-Champaign, November 1994.

TEACHING

Publications Related to Teaching

Murphy, T.J. & White, J. J. (2001). *Study Guide for Calculus and Analytic Geometry III*. Online Course for the Independent Study Department in the College of Continuing Education at the University of Oklahoma, Norman. [Demo version at <http://www.occe.ou.edu/cdis/Math2433Demo/home.htm>]

White, J. J. & Murphy, T.J. (2001). *Study Guide for Calculus and Analytic Geometry IV*. Online Course for the Independent Study Department in the College of Continuing Education at the University of Oklahoma, Norman. [Demo version at <http://www.occe.ou.edu/cdis/Math2433Demo/home.htm>]

Grants Related to Teaching

(with David Kung, Katherine Socha, and Natasha Speer) 2007 MAA PREP workshop grant, \$24,230, *How to build and run a successful Emerging Scholars Program*.

(with Elena Black) 1998 OU College of Arts & Sciences, \$13,842, *Multivariable calculus and Mathematica*.

(with Cecelia Brown) 1997 and 1998, Kerr Funds, \$1500 for each of two years, for the OU library to purchase new monographs in the area of Undergraduate Curriculum and Pedagogy.

Presentations Related to Teaching

[invited] "Using Group Work", Project NExT panel on *Deciding How to Teach*, at MAA MathFest, San Jose, August 2007.

"Finding a Job", presentation for the University of Oklahoma Mathematics Graduate Student seminar, October 2006.

panelist on Teaching a Class Better the Second Time Around, Project NExT panel at MAA MathFest, Boulder, July 2003.

"Issues in Mathematics Education", presentation for the University of Oklahoma Mathematics Club, February 2001.

[invited] "Preparation and ongoing development: Activities to help GTAs (and others) succeed as instructors of mathematics", invited presentation for the Department of Mathematics at Michigan Technological University, Houghton, MI, March 2000.

"Sensing Mathematics: A Blind Student Meets Calculus," contributed paper for the *Session on*

Classroom Notes, 59th Annual Meeting of the Oklahoma-Arkansas Section of the MAA, University of Central Oklahoma, Edmond, OK, April 1997.

"The Real World of an Assistant Professor," graduate student seminar in Mathematics, Science, and Technology Education at the University of Illinois at Urbana-Champaign, March 1997.

[invited] "Adapting to Collaborative Learning," focus group Use of Groups, sponsored by the Center for Educational Excellence at the United State Air Force Academy, Colorado Springs, October 1996

"Capturing the Moment: Videotapes for Training, Feedback, and Hiring," Fifth National Conference on the Education and Employment of Graduate Teaching Assistants, Denver, November 1995.

[invited] "Special Features of Transition Courses" and "The Bridge Experience: Academic Boot Camp," University of Illinois at Urbana-Champaign (University of Missouri at Columbia visiting), March 1993.

[invited] "The Bridge Component: Academic Boot Camp," University of Illinois at Urbana-Champaign (Oklahoma State University visiting), December 1992.

[invited] "Communication: The Key to Engaging Students' Interest in Math Classes," Principal Scholars' Program Coordinator/Teacher Workshop, University of Illinois at Urbana-Champaign, April 1992.

Doctoral Dissertations Advised

Hands, Krista B. (2007). *The Business Calculus GMTA: An Exploration of Teaching Experiences in an Unfamiliar Course*.

Lancaster, Stephen M. (2007). *Pre-Service Teachers' and Statistics: Interrelationships Between Content Confidence, Knowledge, and Attitudes; Pedagogical Content Knowledge; and Teacher Interest In Professional Development in Statistics*.

Martin, Jason H. (in progress, topic TBD).

Stone, Andrea D. (2006). *A Psychometric Analysis of the Statistics Concept Inventory*.

Talley, Jana (in progress, topic TBD).

White, Jonathan J. (2003). *Using Technology to Facilitate Visualization in Multivariable Calculus*.

Graduate Courses Taught

- *Introduction to Mathematics Pedagogy Research* at OU.
- *Issues and Problems in Mathematics Pedagogy (Engaging Students in Active Mathematics Learning)* at OU
- *Teaching College Mathematics* for new mathematics graduate teaching assistants at OU.
- program seminar for the Undergraduate Curriculum and Pedagogy Research Option in the Department of Mathematics at OU.
- graduate reading courses at OU: (1) collaborative learning in college mathematics classrooms, (2) technology and mathematics instruction, (3) reform curricula in undergraduate mathematics, (4) educational research methods, including hands-on apprenticeship-type experiences with real data from grant work.
- graduate topics course at OU: (1) educational theories (Piaget & Vygotsky), (2) research design in mathematics education.

Undergraduate Courses Taught

- *Introduction to Statistics* at Oklahoma City Community College.
- *Applied Statistical Methods I and II* in the Department of Mathematics at OU.
- *Special Topics and Methods for Secondary Mathematics Teachers* at OU.
- discussion section of *Introduction to the Teaching of Secondary School Mathematics/Field Experience in Secondary Teaching* at UIUC.
- *Linear Algebra* at OU.
- four-semester calculus sequence at OU; including the use of *Mathematica* in the multivariable calculus course and the use of personal response systems in the entire sequence.
- first and second semester calculus for the Merit Workshop Program at UIUC (based on Treisman's Emerging Scholars Programs) for mathematics, science, and engineering majors from underrepresented populations; including use of *Calculus&Mathematica* Program electronic notebooks.
- first and second semester calculus (traditional) and *Calculus for Social Scientists* at UIUC.
- discussion sections of precalculus at UIUC.
- college algebra and *Preparation for College Algebra* for students admitted conditionally to UIUC (with ACT scores considerably lower than the campus average).
- tutoring for algebra and calculus students individually, in class, and in small groups at Kent State University; including establishment of small group tutoring to augment one-on-one sessions at Kent State University.

SERVICE

National and Regional -- Committee Memberships

- MAA Coordinating Council on Meetings, 2008-2011.
- MAA Membership Committee, 2007-2010.
- MAA Strategic Planning Group on The Mathematics Program, 2007-2009.
- MAA Committee on the James R.C. Leitzel Lecture, 2002-2008; Chair, 2004-2008 (also Blue Dot cohort coordinator for initial fundraising efforts, 1998).
- OK-AR MAA Section Project NExT steering committee, 2002-2005.
- AMS-MAA Committee on Teaching Assistants and Part-Time Instructors, 1998-2001; Chair, 2002-2004.
- SIGMAA on RUME Guidelines Committee, 1999-2004.
- AWM Committee on Education, 2001-2002.
- organizing team for the Fourth National Conference on the Training and Employment of Graduate Teaching Assistants in Chicago, November 1993.

National and Regional – Referee and Reviewer

- *International Journal of Engineering Education*
- *Journal of Engineering Education*
- *Journal of Statistics Education*
- *Research in Collegiate Mathematics Education*
- MAA Read This! (invited book reviews <http://www.maa.org/reviews>)
 - 2005: *Research in Collegiate Mathematics Education V*, edited by Annie Selden, Ed Dubinsky, Guershon Harel, Fernando Hitt (2003).
 - 2003: *1089 and All That: A Journey into Mathematics*, by David Acheson (2002).
 - 2003: *The Teaching and Learning of Mathematics at University Level: An ICMI Study*, edited by Derek Holton (2001).
 - 1999: *Maths: A Student's Survival Guide*, by Jenny Olive (1998)
- *National Science Foundation*

National and Regional -- Conference Sessions Organized

- (with Tim Gutmann and Natasha Speer) *Mathematics Teaching Assistant Preparation and Development: Discussion Group and Working Group*, PMENA; Athens, October 2002; Toronto, October 2004; Roanoke, October 2005; Mérida, Yucatán, November 2006; Lake Tahoe, October 2007.
- (with Natasha Speer) *Implementing Preparation and Development Programs for College Mathematics Instructors: Poster Session*, sponsored by the AMS-MAA Committee on Teaching Assistants and Part-Time Instructors, Joint Mathematics Meetings, Baltimore, MD, January 2003.
- (with Natasha Speer) *Implementing Preparation and Development Programs for College Mathematics Instructors: Interactive Roundtables*, sponsored by the AMS-MAA Committee on Teaching Assistants and Part-Time Instructors, MathFest, Burlington, VT, August 2002 .
- (with Bruce Reznick) *Research on TAs: Background, Beliefs, Attitude, and Practice*, AMS-

MAA Panel Session sponsored by the AMS-MAA Committee on Teaching Assistants and Part-Time Instructors, Joint Mathematics Meetings, San Diego, January 2002.

- *Innovative Development Programs for Teaching Assistants and Part-Time Instructors*, AMS-MAA Special Session sponsored by the AMS-MAA Committee on Teaching Assistants and Part-Time Instructors, AMS-MAA Joint Meetings, Washington DC, January 2000.
- (with John Diamontopoulos) "So, What's NExT?" Project NExT session on Junior Faculty, OK-AR MAA Sectional Meeting, April 1999.
- (with Suzanne Lenhart) *Innovations in Teaching Assistant Training*, MAA panel discussion sponsored by AMS-MAA Committee on Teaching Assistants and Part-Time Instructors, Joint Mathematics Meetings, San Antonio, January 1999.
- Project NExT session on *Diversity* (Uri Treisman, speaker), AMS-MAA Joint Mathematics Meetings, San Diego, January 1997.
- (with Brad Kline) Project NExT session on *Cooperative and Active Learning* (Ed Dubinsky, speaker), Joint Mathematics Meetings, San Diego, January 1997.
- (moderator only) "Using Computers for Teaching the Disciplines," created panel at the Fourth National Conference on the Training and Employment of Graduate Teaching Assistants, Chicago, November 1993.

University and Department -- Committee Memberships

- OU Presidential Professorship Selection Committee, 2007-2010.
- OU Information Technology Council, 2005-2008.
- OU Environmental Concerns Committee, 2004-2007, chair elect then chair 2004-2006.
- OU Continuing Education Council, 2004-2007.
- OU Campus Departmental Review Panel, 2004-2005.
- OU Institutional Review Board, 2002.
- OU Intervention Strategies Committee, 2001.
- OU A&S Teaching Scholars Initiative Steering Committee, 2002-2007, co-chair 2003-2004.
- OU A&S Advisory Committee on Women's Issues, 2004-2007, co-chair 2005-2006.
- OU A&S Support of Teaching and Research Committee, 2003-2005.
- OU A&S Information Technology Committee, 2001-2003.
- OU Department of Mathematics Graduate Committee, 2004-present.
- OU Department of Mathematics Undergraduate Committee, 1998-2002. 2003-2004.
- OU Department of Mathematics Textbook Committee, 2003-2004.
- OU Department of Mathematics Search Committee, 1996-1997, 2000-2001, 2001-2002, 2006-2007, 2007-2008.
- OU Department of Mathematics Resources Committee, 2001-2002.
- OU Department of Mathematics Scholarships Committee, 1999, 2001.
- OU School of Library and Information Studies Accreditation Review Committee and Subcommittee on Students, 2005-2007.
- OU Chemistry and Biochemistry Search Committee, 2005-2006.
- OU Instructional Leadership and Academic Curriculum Search Committee, 2004-2005, 2005-2006.
- OU Mathematics Education Certification Committee, 1996-present.
- steering committee for OU Educational Policy Development committee, 1998-2000, 2001-2003.

- OU A&S representative, steering committee to prepare for NCATE/OCTP accreditation site visit, OU College of Education, 1997-1998, 2001-2002.

University and Department -- Other Activities

- panelist on seeking external funding at the "Fundamentals for Faculty" workshop sponsored by the OU Office of Research Services, August 2004.
- (with Francey Greenlee) Advisor for the OU Chapter of the American Indian Science and Engineering Society, 2003-2005.
- (with Teri Reed-Rhoads) Co-Facilitator of the Faculty Lunch Discussion Group on *How People Learn* (book published by the National Research Council 2000), sponsored by the OU Instructional Development Program, Fall 2002.
- Faculty Marshal at CAS Convocation (May), 1999, 2000, 2001; Enunciator, 2002.
- (with Nicole Judice Campbell) Advisor for the OU Chapter of the Association for Women in Science, 1998-2001.
- OU Department of Mathematics liaison with the Oklahoma Teacher Education Collaborative, 1997-2001.

CONSULTING

- external evaluator on National Science Foundation grants
 - PI Madison, NSF-CCLI *Quantitative Reasoning in the Contemporary World*, 2007-2010.
 - PI Narayan, NSF-REU *Extremal Graph Theory and Dynamical Systems*, Rochester Institute of Technology, 2007.
 - PI O'Leary, NSF-CCLI *A Mathematics Course in Scientific Simulation*, 2003
- advisory board member, NSF-REU *Applied Mathematical Science Summer Institute*, PI Wirkus, California State Polytechnic University, Pomona, and Loyola Marymount University, 2006.
- content specialist on Oklahoma State Regents for Higher Education grants
 - PI Kidd, OU Center for Effective Schools, *Effective Quality for All Learners (EQUAL): A Collaborative Partnership to Improve Teacher Quality Center for Effective Schools*.
 - PI Reeder, OU College of Education, *Improving Mathematics Pedagogy and Content Knowledge for Teachers in Oklahoma (IMPACKT in OK)*