

CURRICULUM VITAE

Rose M. Marra

Work:

303 Townsend Hall
University of Missouri
Columbia, MO 65211
(573) 882 - 2877
(573) 884 - 4944 FAX
rmarra@missouri.edu

Home:

6731 O'Neal Road
Columbia, MO 65202
(573) 447 2275

Education

- 1991 – 1996 **University of Colorado**, Denver, CO.
Ph.D., School of Education, Educational Leadership and Innovation.
Dissertation: “The Effects of a Concept Mapping Activity on Expert System Generation.”
- 1984 – 1986 **University of Kansas**, Lawrence, KS.
Master of Science in Computer Science.
Thesis: Design Macintosh-based prototype of computer aided instruction for introductory computer science students.
- 1981 – 1984 **Rockhurst College**, Kansas City, MO.
Bachelor of Science in Computer Science; emphasis in Economics: 1984.
- 1979 – 1981 **University of Missouri**, Kansas City, MO.
Undergraduate liberal arts course work; emphasis in Computer Science, Mathematics, and Economics.

Professional Experience

- 2000 -- 2006 **School of Information Science and Learning Technologies, University of Missouri**, Associate Professor (2006 +); Assistant Professor (2000 – 2006)

Accomplishments include: design and delivery of online courses in assessment and evaluation; design and development of Training, Design and Development focus area for masters degree, serving as PI and Co-PI on state and federally funded grants on assessment, evaluation, women in engineering, engineering education and K-12 technology integration..

1995 -- 2000 **College of Engineering, The Pennsylvania State University,**
Director of Instructional Services / Assistant Professor of Engineering

Responsibilities included: designing and implementing pedagogical and professional development workshops for all College of Engineering faculty, designing and implementing teaching seminars for college graduate teaching assistants and college undergraduate teaching interns, training College of Engineering student facilitators in managing team and group-based learning experiences, consulting with individual college faculty on how to implement new pedagogical methods in their classrooms, and evaluating and assessing the effectiveness of educational changes in the college. Recent creative accomplishments include a longitudinal and cross-sectional study of intellectual development of engineering students, design and implementation of a 100-item alumni survey based upon the ABET accreditation standards, and annual workshops on integration of teaching, research and service for new faculty in our college.

1995 **Applied Research Laboratories, The Pennsylvania State University,**
Senior Training Specialist. Head designer for Department of Defense computer-based learning environment to instruct on a method for managing and simulating business processes.

1994 – 1995 **Leonhard Center, College of Engineering, The Pennsylvania State University,** GE Fellow. Conducted curricular development, assessment and evaluation activities; served as industry consultant to faculty developing new learner-centered experiences for their classes.

1986 – 1994 **AT&T Bell Laboratories,** Member of Technical Staff.
Software Product Development:
Software development responsibilities spanned initial requirements through product introduction, including designing and developing large software applications, defining new corporate procedures using the above tool, organizing current and future product releases, training user community and developing and delivering product presentations to customers and management.

Technical Writing and Training:
Designed and completed initial implementation of windowing help system, product marketing brochure, updates to software product quick reference cards, updates and redesign of online documentation system. Organized and implemented multiple training sessions for peer software developers and other AT&T product support organizations.

1984 – 1986 **University of Kansas – Computer Science Dept.**, Graduate Teaching Assistant. Designed and delivered instruction for introductory algorithm development courses using Pascal and Fortran.

Honors, Awards and Recognition

- 2007 *WEPAN (Women Engineering Programs and Advocates Network) Betty Vetter National Research Award*. Awarded to Rose Marra and Barbara Bogue.
- 2005 *Outstanding Book Award for the AECT Teacher Education Division*. Jonassen, D., Howland, J., Moore, J. & Marra, R.M. Learning to solve problems with Technology: A Constructivist Perspective.
- 2005 American Society for Engineering Education Women in Engineering Division: *Best Paper Nominee*
- 2004 *College of Education High Flyer Teaching Award*
- 2003 *College of Education High Flyer Teaching Award*
- 2003 *Nominated – College of Education Advisor / Mentor of Year Award*
- 1999 *Best Division Paper Award – Educational Research Methods*, “Assessing new ways of teaching dynamics: An ongoing program to improve teaching, learning and assessment”. American Society for Engineering Education 1999 annual meeting, Charlotte, NC.
- 1998 Member of a team awarded the *Boeing Outstanding Engineering Educator*, Pennsylvania State University, College of Engineering
- 1989 – 90 *Peer Quality Award, Individual Performance Award, Affirmative Action Award*, AT&T Bell Laboratories
- 1986 *Graduate Teaching Assistant Award*, Computer Science Department, University of Kansas.
- 1984 *Senior Class Gold Medal*, Rockhurst College for Highest Class GPA (4.0 / 4.0)
- 1983 *Alpha Sigma Nu*, National Jesuit Honor Society
- 1982 *Phi Kappa Phi*, National Liberal Arts Honor Society
- 1979 - 81 *University of Missouri: Curator's Scholarship*

Grants and Funded Research

“Evaluation of Professional Development Projects – Cycle 7”: PI: Sandi Abel. Co-PIs: Mark Ehlert, John Lannin, Rose Marra. Total: 190,000 for 24 months. Funded by State of Missouri Office Of Administration, January 2009. As CO-PI will participate in evaluation design, implementation and reporting.

“Increasing Assessment Capacity in Engineering Outreach”. PI: B. Bogue; Co-PI: R. Marra, B. Shanahan. 250,000 over 18 months. National Science Foundation Division of Human Resource Development. Award # HRD 0734072, 10/07.

“Prototyping the Engineer of 2020: A 360-Degree Study of Effective Education”. PI: L. Lattuca. CO-PIs: R. Marra, A. McKenna, B. Palmer, P. Terenzini. \$1.99 million over four years. National Science Foundation Division of Undergraduate Education. Award # DUE [0618712](#) ,09/06.

“National Girls Collaborative Project: Advancing the Agenda in Gender Equity for Science, Technology, Engineering and Mathematics”. PI: K. Peterson; CO-PIs: B. Britsch, R. Marra. \$1.34 million over four years. National Science Foundation Research on Gender Equity. Award HRD [0631789](#) 08/06.

“Assessing Women in Student Environments (AWISE) – Moving Assessment of Women Studying Engineering into the Classroom”. PI: Rose Marra. Co-PIs: Robert Pangborn, Barbara Bogue, C. Lissenden, L. Pauley. Total: 500,000 for 24 months. National Science Foundation Research on Gender Equity. Award # HRD-0607081.

“Center of Excellence for Radiation Protection Technology Education and Training: A Model Demonstration Proposal”. PI: W. Miller, CO-PIs: R. Marra, D. Jonassen. \$2.3 Million over 36 months. Funded by the U.S. Department of Labor. As CO-PI will conduct assessment and evaluation of training and curriculum development initiatives.

“Evaluation of Professional Development Projects – Cycle 4”: PI: Sandi Abel. Co-PIs: Mark Ehlert, Jim Cole, John Lannin, Rose Marra. Total: 190,000 for 24 months. Funded by State of Missouri Office Of Administration, July 2005. As CO-PI will participate in evaluation design, implementation and reporting.

“Developing Exportable Assessment Instruments and Models for Women In Engineering Programs -- SUPPLEMENT” (10/01/05 - 9/30/06) Marra, R.M. (PI); Bogue, .B. (Penn State, CO-PI). Award # HRD-0536255 for \$75,000. National Science Foundation Research on Gender Equity. Supplemental award to extension of previously developed instruments to minority and male audiences for HRD-0120642.

“Engineering Fellows In G6-9 Science Education”: PI: Satish Nair. Co-PI: R. Litherland; S. Chott, M. Skubic, S.Gangopadhyay, S. Grant, V. Chellaboina, M. Chandrasekhar, J. Lannin, R. Marra. Total: Award # DGE-0440524.1,560,439 for 36 months. National Science Foundation Program for Graduate Teaching Fellows in K-12 Education (EHR), April 2005. As CO-PI will conduct assessment and evaluation.

“Evaluation of Professional Development Projects – Cycle 3”: PI: Sandi Abel. Co-PIs: Mark Ehlert, Jim Cole, John Lannin, Rose Marra. Total: 190,000 for 18 months.

Funded by State of Missouri Office Of Administration, October 2004. As CO-PI will participate in evaluation design, implementation and reporting.

“Evaluation of Professional Development Projects – Cycle 2”: PI: Sandi Abel. Co-PIs: Mark Ehlert, Jim Cole, Rose Marra. Total: 190,000 for 18 months. Funded by State of Missouri Office Of Administration, January 2004. As CO-PI will participate in evaluation design, implementation and reporting.

“The Midwest Nuclear Science & Engineering Consortium”. Funded by U.S. Department of Energy; Innovations in Nuclear Infrastructure and Education (INIE) Program. Contract Award No.: DE-FG07-03ID14531. October 1, 2003 – September 30, 2006. Year 1; \$1,400,000 in Year 2; \$1,340,000 in Year 3. PI: Wynn A. Volkert. CoPIs: WH Miller, JD Robertson, SS Jurisson, P Miceli, SK Loyalka, MA Prelas, TK Ghosh, RV Tompson, RM Marra, DH Jonassen, GK Springer, JC McKibben. As CO-PI will conduct assessment and evaluation.

“Developing Exportable Assessment Instruments and Models for Women In Engineering Programs -- SUPPLEMENT” (09/30/04 - 3/30/05) Marra, R.M. (PI); Bogue, .B. (Penn State, CO-PI). Award # HRD-0406546 for \$155,508. National Science Foundation Program for Gender Equity in Science, Mathematics, Engineering and Technology. Supplemental award to fund development of online versions of the instruments and further enhance the AWE website to enhance tool dissemination for HRD-0120642.

“Evaluation of Professional Development Projects”: PI: Sandi Abel. Co-PIs: Mark Ehlert, John Lannin, Jim Cole, Rose Marra. Total: 150,000 for 18 months. Funded by State of Missouri Office Of Administration, March 2003. As CO-PI will participate in evaluation design, implementation and reporting.

“Developing Exportable Assessment Instruments and Models for Women In Engineering Programs -- SUPPLEMENT” (8/1/03 - 5/30/04) Marra, R.M. (PI).; Bogue, .B. (Penn State, CO-PI). Award # HRD-HRD-0335161 for \$5,360. National Science Foundation Program for Gender Equity in Science, Mathematics, Engineering and Technology. Supplemental award to support “Research Experience for Undergraduate” to hire undergraduate researcher to assist with literature review activities for HRD-0120642.

“Developing Exportable Assessment Instruments and Models for Women In Engineering Programs -- SUPPLEMENT” (10/1/02 - 9/30/04) Marra, R.M. (PI).; Bogue, .B. (Penn State, CO-PI). Award # HRD-0120642 for \$21,749. National Science Foundation Program for Gender Equity in Science, Mathematics, Engineering and Technology. Supplemental award to add the University of Louisville’s Women in Engineering program to HRD-0120642.

“Developing Exportable Assessment Instruments and Models for Women In Engineering Programs” (10/1/01 - 9/30/04) Marra, R.M. (PI).; Bogue, .B. (Penn State, CO-PI). Award # HRD-0120642 for \$896755. National Science Foundation Program for Gender Equity in Science, Mathematics, Engineering and Technology (Program Announcement NSF 01-6).

Thirty-six month grant to develop assessment and evaluation tools for women in engineering programs in the United States. As PI will work with team to develop, pilot test, analyze results and disseminate results from these tools with a set of participating women in engineering programs from the US. Tools will ultimately be disseminated to all women in engineering programs.

“Preparing Tomorrow's Teachers to Use Technology” (June 2000 - May 2001) grant from the Federal Department of Education. Diggs, L; Laffey, J.; Wedman, J.; Marra, R. (Grant # #P342A990155) \$3,534,765 (DoE \$1,417,234 and MU CoE cost shared \$2,117,531) for 36 months to:

- develop faculty and teacher education students who are fluent in the use of technology in teaching,
- develop and provide high quality experiences with technology in the teacher education curriculum,
- tight integration of the curriculum with exemplary technology-using practices of K-12 teachers, and
- a program that is sustainable, owned by faculty, and continuously improving.

Serving as a CO-PI to design, develop, implement and assess faculty development programs that will allow the undergraduate teacher development faculty at MU to integrate and model effective uses of technology in their teacher preparation courses.

“GK-12: Hybrid and Electric Vehicle M3 Education”. Streit, D.A.; Jonassen, .D.H.; Marra, R.M.; Wakhungu, J.W. National Science Foundation (Grant # 9979579) \$1,470,264 for 36 months granted to develop relationship between the Hybrid Electric Vehicle program at PSU and middle school students. For this grant I am serving as the assessment coordinator (designing assessment strategies, supervising data gathering and analysis, writing reports and coaching faculty on pedagogical initiatives).

“Engineering Coalition of Schools for Education and Leadership” (ECSEL). Penn State is one of seven engineering colleges involved in this 10-year NSF-sponsored effort to infuse authentic design experiences into engineering curricula and increase the enrollment and retention of under-represented minorities in engineering. \$410,000 annually.

As the *local evaluator* for Penn State, conducted numerous assessment activities including a longitudinal and cross-sectional study of intellectual development of engineering students: To date, one-hour interview data has been collected from over two hundred students (first-year, juniors and seniors). Results are being used to show effectiveness of current educational reforms, inform new curricular changes, and for general faculty education.

“Pathways to Effective Learning in Engineering Using Information Technology”.

GE Fund Grant. \$431,000 over three years.

As assessment coordinator for this grant, designed and implemented assessment activities; conducted analyses and published results for educational innovations in engineering dynamics and calculus courses. Results are currently being used to promote institutionalization of these innovations and inform the national communities in these disciplines.

“A collaborative, hands-on course which fully integrates mathematics, engineering, and communications to prepare students for the engineering curriculum”. **Fund for Excellence in Learning and Teaching, Penn State University.** \$8, 568 each year for three years (1997 - 1999). As assessment coordinator for this grant, designed and implemented assessment activities, worked to analyze data and report results.

Publications

Books

Jonassen, D., Howland, Marra, R.M & Crismond, D. (in press). Learning With Technology, Upper Saddle River, NJ: Merrill / Prentice Hall.

Jonassen, D., Howland, J., Moore, J. & Marra, R.M (2002). Learning to solve problems with Technology: A Constructivist Perspective, Upper Saddle River, NJ: Merrill / Prentice Hall.

Reports

Abell, S., Arbaugh, E., Ehlert, M., Lannin, J., & Marra, R. (2008). Missouri Department of Higher Education Improving Teacher Quality Grants Cycle 5 external evaluation report. Columbia, MO: Southwestern Bell Science Education Center, University of Missouri-Columbia.

Abell, S., Arbaugh, E., Ehlert, M., Lannin, J., & Marra, R. (2007). Missouri Department of Higher Education Improving Teacher Quality Grants Cycle 4 external evaluation report. Columbia, MO: Southwestern Bell Science Education Center, University of Missouri-Columbia.

Abell, S., Cole, J., Ehlert, M., Lannin, J., & Marra, R. (2006). Missouri Department of Higher Education Improving Teacher Quality Grants Cycle 3 external evaluation report. Columbia, MO: Southwestern Bell Science Education Center, University of Missouri-Columbia.

Abell, S., Cole, J., Ehlert, M., Lannin, J., & Marra, R. (2005). Missouri Department of Higher Education Improving Teacher Quality Grants Cycle 2 external evaluation report. Columbia, MO: Southwestern Bell Science Education Center, University of Missouri-Columbia.

Abell, S., Cole, J., Ehlert, M., Lannin, J., & Marra, R. (2004). Missouri Department of Higher Education Improving Teacher Quality Grants Cycle 1 external evaluation report. Columbia, MO: Southwestern Bell Science Education Center, University of Missouri-Columbia.

Book Chapters

Palmer, B., & Marra, R.M. (2008). Individual Domain-specific Epistemologies: Implications for Educational Practice”. In M.S. Khine (Ed.) Knowing, Knowledge and Beliefs: Epistemological Studies across Diverse Cultures (pp. 325 – 350). Springer.

Bogue, B., Marra, R.M. (2007). “Addressing gender in learning to solve complex problems. In D. Jonassen (Ed.) Learning to Solve Complex Scientific Problems (pp. 321 - 340). Mahwah, NJ: Lawrence Erlbaum Associates.

Marra, R.M. (2007). “Focusing elearning assessment on meaningful outcomes: Content analysis protocols for online discussion forums”. In Patrizia Ghislandi (Ed.) Towards eUniversity: Contributions for innovative teaching / learning in Higher Education. Università degli Studi di Trento – Trento University Press.

Pfannenstiel, J.C., Howland, J., Wedman, J., Diggs, L. & Marra, R. (in press) “Using the Technology Learning Cycle as a Framework for Teacher Preparation, Faculty Professional Development, and Evaluation.” In W. Heinecke (Ed.). Vol. 4 of Research Methods for Educational Technology. Greenwich, CT.: Information Age Publishing.

Jonassen, D.H., Marra, R.M., & Palmer, E. (2003).”Epistemological Development: An Implicit Entailment of Constructivist Learning Environments”. In Seel, N.M., & Dijkstra, S. (Eds.), Curriculum, Plans and Processes of Instructional Design: International Perspectives (pp. 75-88). Mahwah, NJ: Lawrence Erlbaum.

Marra, R.M. & Carr-Chellman, A.A. (2001). "Strategies for preparing technology-ready teachers: An examination of two teacher preparation courses". R. Nata (Ed.), Progress in Education, Volume IV. Huntington NY: Nova Science Publishers, Inc.

Marra, R.M. & Pangborn, R.N. (2001). “Mentoring in the Technical Disciplines: Fostering A Broader View of Education, Career, and Culture In and Beyond the Workplace”. E. White (Ed.), New Directions in Teaching and Learning: Beyond Teaching to Mentoring, Number 85. San-Francisco: Jossey-Bass.

Marra, R.M. (1996). "Human Computer Interface Design". In R.S. Grabinger, J. Dunlap, P. Kommers (Eds.), Hypermedia Learning Environments: Instructional Design and Integration. Mahwah, NJ: Lawrence Erlbaum Associates.

Marra, R.M. (1996). "Evolution and Maintenance". In R.S. Grabinger, J. Dunlap, P. Kommers (Eds.), Hypermedia Learning Environments: Instructional Design and Integration. Mahwah, NJ: Lawrence Erlbaum Associates.

Marra, R.M. & Jonassen, D.H. (1993). "Whither Constructivism". In D. Ely (Ed.), Educational Technology Yearbook. Englewood, CO: Libraries Unlimited.

Journal Articles

* Indicates refereed.

*Park Rogers, M. A., Abell, S. K., Marra, R. M., Arbaugh, F., Hutchins, K. L., & Cole, J. S. (in press). Orientations to science teacher professional development: An exploratory study. Journal of Science Teacher Education.

Bogue, B., & Marra, R. (2009). Help her believe in herself. Prism, April, 64.

*Jonassen, D., Shen, D., Marra, R., Cho, Y., Lo, J., Lohani, V. (2009) Engaging and Supporting Problem Solving in Engineering Ethics. Journal of Engineering Education, 98(3) 235 – 254.

* Marra, R.; Rogers, K.A.; Shen, D.; & Bogue, B. (2009). "A Multi-Year, Multi-Institution Study of Women Engineering Student Self-Efficacy," Journal of Engineering Education, 98, 1 – 12.

* Marra, R.; Peterson, K., & Britsch, B. (2008). Collaboration as a Means to Building Capacity: Results and Future Directions of the National Girls Collaborative Project. Journal of Women and Minorities in Science and Engineering, 14, 119 – 140.

* Hutchins, K., Abell, S., Arbaugh, E., Marra, R., Lee, M. (2008). A Consumer's guide to professional development. Science Scope, 31(8), 16 - 19.

* Marra, R., Palmer, B. (2008) Epistemologies of the Sciences, Humanities and Social Sciences: Liberal Arts Students' Perception. Journal of General Education, 57(2), 100 – 118.

Bogue, B., Marra, R.M. (2007). Did it really work? Assessing the Impact of Outreach Programs. SWE Magazine,53 (1), 42-49.

* Abell, S., Lannin, J., Marra, R., Ehlert, M., Cole, J., Lee, M., Park Rogers, M., & Wang, C.-Y. (2007). "Multi-site evaluation of science and mathematics teacher professional development programs: The project profile approach." Studies in Educational Evaluation, 33(2), 135 – 158.

- * Marra, R.M. & Palmer, B. (in press). "Science students' epistemological beliefs and science literacy behaviors: How do they relate?" Science Education International.
- * Marra, R. (2006). "A Review of Research Methods for Assessing Content of Online Discussion Forums". Journal of Interactive Learning Research, 17(3),243 - 267.
- * Moore, J. & Marra, R. (2005) "Comparative Analysis of online discussion participation protocols". Journal of research on technology in education,38 (2), 191-212.
- * Marra, R.M. (2005). "The Impact of the Design of Constructivist Learning Environments on Faculty Teaching Epistemologies". Learning Environments Research, 8(2), 135-155.
- * Marra, R.M. & Bogue, B. (2004) "AWE: A Model for Sustainable and Profitable Collaboration Between Disciplines". Journal of Women and Minorities in Science and Engineering, 10(3), 283 - 295.
- * Marra, R.M., Moore, J. & Klimczek, A. (2004) "A Comparative Analysis of Content Analysis Protocols for Online Discussion Forums". Educational Technology Research and Development, 52(2), 23 - 40.
- * Marra, R.M., Howland, J., Jonassen, D.H., & Wedman, J. (2004). "Validating the Technology Learning Cycle: in the Context of Faculty Adoption of Integrated Uses of Technology in a Teacher Education Curriculum". International Journal of Learning Technology, 1(1), 63-83.
- * Boothy, T. & Marra, R.M. (2003) "The Bowers Program: Effects of Cross-Disciplinary Design Activities on Architectural Engineering Student Performance". Journal of Architectural Engineering, 9(4), 119 - 125.
- * Palmer, B. & Marra, R.M. (2004) " College student epistemological perspectives across knowledge domains: A proposed grounded theory". Higher Education, 47(3), 311-335.
- * Marra, R.M. (2004) "An Online Course to Enhance Teachers Use of Technology: Limitations and Considerations". Journal of Technology and Teacher Education, 12(3), 411 - 429.
- * Marra, R.M. & Palmer, B. (2004)"Encouraging intellectual growth: Senior college student profiles". Journal of Adult Development, 11(2), 105 - 116.
- * Wise, J.C., Lee, S.H., L., Litzinger, T.A., Marra, R.M., & Palmer, B. (2004) A report on a four-year longitudinal study of intellectual development of engineering undergraduates. Journal of Adult Development, 11(2), 97 - 104.

- * Marra, R.M., Howland, J., Diggs, L., & Wedman, J. (2003). "A Little TLC (Technology Learning Cycle) as a Means to Technology Integration". Tech Trends, 47(2), 15 – 20.
 - * Marra, R.M. (2002). "The Ideal Online Learning Environment for Supporting Epistemic Development: Putting the Puzzle Together". Quarterly Review of Distance Education, 3(1), 15-31.
 - * Carr-Chellman, A.A., Marra, R.M., & Roberts, S. (2002). "Round girls in square computers: Feminist perspectives on the aesthetics of computer hardware", Tech Trends, 46(6), 4 – 10.
 - * Marra, R.M. & Jonassen, D.H. (2001). "Limitations of online courses for supporting constructive learning". Quarterly Review of Distance Education, 2(4), 303 - 317.
 - * Marra, R.M. & Jonassen, D.H. (2002) "Transfer effects of semantic networks on expert systems: Mindtools at work". Journal of Educational Computing Research, 26(1), 1 - 23.
 - * Streit, D., Wang, C.Y, Bakis, C., Randall, C., Lanagan, M., Tallon, R., Anstrom, J., Jonassen, D.H., Marra, R.M. & Wakhungu, J. (2001). "Graduate Automotive Technology Education in Energy Storage Systems - GATE Penn State", International Journal of Continuing Engineering Education and Life Long Learning, 11(4/5/6), 534-542.
 - * Marra, R.M., Palmer, B., & Litzinger, T.A. (2000), "The effects of a first-year engineering design course on student intellectual development as measured by the Perry scheme", Journal of Engineering Education, 89(1), 39-46.
 - * Marra, R.M. & Carr-Chellman, A.A. (1999). "Undergraduate education students' perspectives on classroom technologies: A qualitative analysis", Journal of Educational Computing Research, 21(3), 283 – 304.
 - * Marra, R.M. & Jonassen, D.H. (1994). "Concept Mapping and Other Formalisms as Mindtools for Representing Knowledge". Association for Learning Technology Journal, 2(1), 50 – 56.
- Palmer, B., Marra, R.M., & Moore, W. (2001). "Looking at the big picture: Assessing complex thinking". Assessment Update, 13(2), 1-2, 14-15.
- Carr, A.A., Jonassen, D.H., Litzinger, M.E. & Marra, R.M. (1998) "Good ideas to foment educational revolution: The role of systemic change in advancing situated learning, constructivism, and feminist pedagogy". Educational Technology, 38(1), 5 – 15.

Manuscripts Under Review for Refereed Journals/ Proceedings

Manuscripts in Progress

Marra, R.M. "Epistemological Development as a Framework for Analyzing Selected Instructional *Development* Models". Under revision for Educational Technology Research and Development.

Proceedings

* Indicated refereed.

Miller, W.H., D.H. Jonassen, R.M. Marra, G.M. Neumeyer, R.L. Etter, M.A. Easter, M.M. Schmidt, H. Henry, I.G. Ionas, "The Role of Instructional Technologists in the Development of a Problem-Centered Radiation Protection Technician Curriculum," Proc of the Conf on Nuclear Training and Education CONTE09: An International Forum on Nuclear Training and Education and Workforce Issues Facing a Renewed Nuclear Energy Option, Jacksonville, FL (Feb. 2009).

Marra, R.M., D.H. Jonassen, W.H. Miller, G.N. Neumeyer, "Stakeholder Perspectives and Effectiveness Data on Scenario-Based RPT Curriculum," Trans. Am. Nucl. Soc., 99, 131-2 (November 2008).

Miller, W., Jonassen, D., Marra, R., Schmidt, M., Easter, M., Ionas, I., Neumeyer, G., Etter, R., Meffert, B., Graham, C. (2008). Radiation Protection Technician Two-Year Associates Of Applied Science Curriculum For National Implementation In Proceedings of the 16th International Conference on Nuclear Engineering, ICONE16 May 11 - 15, 2008, Orlando, Florida, USA.

* Britsch, B., Peterson, K., Marra, R. (2008). The National Girls Collaborative Project: Building capacity through collaboration. In Proceedings of WEPAN Annual Conference, 8 - 11 June, St. Louis, MO. Available at wepan.org.

* Vavrlick, A.; Marra, R.; Ferraro, I., Bogue, B. (2008). Analysis of the Results of a Pilot Engineering and Engineering Technology Student Inventory Survey. Proceedings of American Society for Engineering Education, 22 – 24 June, Pittsburgh, PA.

* Marra, R.; Bogue, B. (2008). Engineering Classroom Environments: Examining Differences by Gender and Departments. Proceedings of American Society for Engineering Education, 22 – 24 June, Pittsburgh, PA.

* Shen, D., Marra, R.; Jonassen, D., Lo, J., Lohani, V. (2008). Fostering engineering ethics problem solving through cognitive flexibility hypertext. Proceedings of American Society for Engineering Education, 22 – 24 June, Pittsburgh, PA.

- Marra, R. (2007). Using Technology to Assess and Evaluate Learning Initiatives: Opportunities, Decisions and Rewards. Proceedings of Copernicus: Bolzanoconversation07, 16 March, Bolzano, Italy.
- * Marra, R., Bogue, B., Rodgers, K., Shen, D. (2007). Self-efficacy of women engineering students – Three years of data at U.S. institutions. In proceedings of American Society for Engineering Education, 22 – 24 June, Honolulu, Hawaii.
 - * Marra, R., Bogue, B., Shen, D., Rodgers, K. (2007). Those that leave – Assessing why students leave engineering. In proceedings of American Society for Engineering Education, 22 – 24 June, Honolulu, Hawaii.
 - * Jonassen, D.; Schmidt, M., Easter, M., Marra, R. (2007). Designing an Activity-Based curriculum for radiation protection personnel. In proceedings of American Society for Engineering Education, 22 – 24 June, Honolulu, Hawaii.
- Easter, M., Schmidt, M., Ionas, I.G., Jonassen, D., Miller, W., Marra, R., Neumeyer, G. (2006). “Advancing a New Paradigm to Address Workforce Needs for Radiation Protection Associates Degree Education”. TRANSACTIONS of the American Nuclear Society, 95, p. xxx – yy.
- * Marra, R. & Bogue, B. (2006). “Women Engineering Students’ Self Efficacy – A Two Year Longitudinal Multi-Institution Study”. In Proceedings of WEPAN Annual Conference, B. Bogue & R.Marra (Eds.), 10 – 13 June, Pittsburgh, PA. Available at wepan.org.
 - * Marra, R. & Bogue, B. (2006). “A Critical Survey on Online Assessment Tools”. In Proceedings of WEPAN Annual Conference, B. Bogue & R.Marra (Eds.), 10 – 13 June, Pittsburgh, PA. Available at wepan.org.
 - * Marra, R.M., Schuurman, M., Moore, C., & Bogue, B. (2005). “Women engineering students’ self-efficacy beliefs – The longitudinal picture”. Proceedings of the annual meeting of the American Society for Engineering Education Annual Conference a, 12 – 15 June, Portland, OR.
 - * Bogue, B. & Marra, R. (2005). “Making Cross-Institutional Coalitions Work: A View Into The Workings Of A Successful Seven Institution Collaboration”. Proceedings of the annual meeting of the American Society for Engineering Education, 12 – 15 June, Portland, OR.
 - * Marra, R.M. & Bogue, B. (2005). "They come and they go: an instrument for assessing why students leave engineering ". In B. Bogue, R.Marra, M Anderson-Rowland (Eds.) Proceedings of WEPAN/NAMEPA Joint Conference, 10 – 13 April, Las Vegas, NV.

- * Bogue, B., Sharma, C., & Marra, R.M. (2005). "Manage Your Program Information: Collect, Compare, and Report Data using AWE ADAPT". In B. Bogue, R.Marra, & M. Anderson-Rowland (Eds.) Proceedings of WEPAN/NAMEPA Joint Conference, 10 – 13 April, Las Vegas, NV.
- * Marra, R.M. (2004). "An Overview of Research Methods for Assessing Content of Online Discussion Forums". In Proceedings of the 4th Hellenic Conference, Information and Communication Technologies in Education. September 29 – October 3, Athens, Greece.
- *Marra, R.M., & Jonassen, D.H. (2004). "Limitations of Online learning -- A Focus on Authentic Assessment". Proceedings of Australian Computers in Education Conference (ACEC), ISBN 0-9581188-1-7. July 5 – 8, Adelaide, Australia.
- * Marra, R.M., Moore, C., Schuurman, M., & Bogue, B. "Assessing Women in Engineering (AWE): Assessment Women Engineering Students' Self-Efficacy Beliefs". Proceedings of the Annual meeting of the Women Engineering Program Advocacy Network. June 6 – 9, Albuquerque, N.M. Available at <http://www.x-cd.com/wepan04/prof14.html>.
- *Marra, R.M., Moore, C., Schuurman, M., & Bogue, B. (2004). "Assessing Women in Engineering (AWE): Assessment Results on Women Engineering Students Beliefs". Proceedings of the Annual Conference of American Society for Engineering Education, (June 20 – 23, 2004); Salt Lake City, UT. Available at http://www.asee.org/acPapers/2004-58_Final.pdf.
- * Marra, R.M. & Bogue, B. (2003). "A.W.E. (Assessing Women in Engineering) – Designing Tools for Success Using Collaboration". In D. Budny, G. Bjedov (Eds.) 33rd ASEE/IEEE Frontiers in Education Conference (FIE) 2003, IEEE Catalog Number: 03CH37487, November 5 - 8, 2003, Boulder, CO. Available at <http://fie.engrng.pitt.edu/fie2003>.
- * Marra, R.M. & Bogue, B. (2003). "AWE: A Model for Sustainable and Profitable Collaboration". Proceedings of the Annual Conference of American Society for Engineering Education, (June 2003); Nashville, TN. Available at www.asee.org.
- * Wise, J.; Lee, S.H., Litzinger, T.A., Marra, R.M., & Palmer, B. (2001). "Measuring cognitive growth in engineering undergraduates: A Longitudinal study". Proceedings of the Annual Conference of American Society for Engineering Education, (June 2001); Albuquerque, NM.
- * Wheeler, T.A, Croskey, C., Mitchell, J. & Marra, R.M. (2001). " SPIRIT Student rocket payload: Characteristics of a long duration undergraduate research

- project". Proceedings of the Annual Conference of American Society for Engineering Education, Albuquerque, NM.
- * Lau, A.S., Pangborn, R.N., Wise, J.C., & Marra, R.M. (2001). "Student assessments of engineering first-year seminars". Proceedings of the Annual Conference of American Society for Engineering Education, Albuquerque, NM.
 - * Stevenson, J.R., Epperson, E., Marra, R.M., Zayas-Castro, J., Noack, T., & Tyrer, H.W. (2001). "A Distance Learning Course Across Countries". Proceedings of the Annual Conference of American Society for Engineering Education, Albuquerque, NM.
 - * Marra, R.M. & Wheeler, T. (2000). "The impact of a student-centered engineering design project on student motivation". In D. Budny, G. Bjedov (Eds.) 30th ASEE/IEEE Frontiers in Education Conference (FIE) 2000, Kansas City, MO, F2C-8 thru F2C-13.
 - * Palmer, B., Marra, R.M., Wise, J.C. & Litzinger, T. (2000). "A longitudinal study of intellectual development of engineering students: what really counts in our curriculum". In D. Budny, G. Bjedov (Eds.) 30th ASEE/IEEE Frontiers in Education Conference (FIE) 2000, Kansas City, MO, S3A2 thru S3A6.
 - * Marra, R.M. & Litzinger, T. (2000). "Lifelong learning: Implications for curricular change and assessment". In D. Budny (Ed.) Proceedings of the Annual Conference of American Society for Engineering Education, St. Louis, MO.
 - * Marra, R.M. & Litzinger, T. (2000). "Learning to Juggle: A Model for New Engineering Faculty Development". In D. Budny (Ed.) Proceedings of the Annual Conference of American Society for Engineering Education, St. Louis, MO.
 - * Marra, R.M. (1999) "Evaluating and assessing educational programs at all levels". In B. Bogue, P. Guthrie, S. Hadden, B. Lazarus (Eds.) Proceedings of the International Conference on Tackling the Resources Shortage, International Society for Optical Engineering, 62-64.
 - * Marra, R.M. & Palmer, E. (1999). "Encouraging Intellectual Growth: Senior engineering student profiles". In D. Budny and G. Bjedov (Eds.) 29th ASEE/IEEE Frontiers in Education Conference (FIE) 1999, San Juan, P.R., 12c1-1 thru 12c1-6.
 - * Marra, R.M.; Campese, K.Z; & Litzinger, T.A. (1999, November). "Lifelong Learning: A Preliminary Look at the Literature in View of EC 2000". In D. Budny and G. Bjedov (Eds.) 29th ASEE/IEEE Frontiers in Education Conference (FIE) 1999, San Juan, P.R., 11a1-7 thru 11a1-12.

- * Yaeger, P.M.; Marra, R.M.; Costanzo, F.; Gray, G.L. & Sathianathan, D. (1999, November). "Interactive Dynamics: Effects of Student-Centered Activities on Learning". In D. Budny and G. Bjedov (Eds.) 29th ASEE/IEEE Frontiers in Education Conference (FIE) 1999, San Juan, P.R., 11a2-12 thru 11a2-17.
 - * Sathianathan, D.; Yaeger, P.M.; Tavener, S.; Armentrout, S.; & Marra, R.M. (1999, November). "Using Applied Engineering Problems in Calculus Classes to Promote Learning". In D. Budny and G. Bjedov (Eds.) 29th ASEE/IEEE Frontiers in Education Conference (FIE) 1999, San Juan, P.R., 12d5-14 thru 12d5-18.
 - * Yaeger, P.M., Marra, R.M., Costanzo, F., & Gray, G.L. (1999) "Assessing New Ways of Teaching Dynamics: An Ongoing Program to Improve Teaching, Learning and Assessment". Proceedings of the Annual Conference of American Society for Engineering Education, Charlotte, NC.
 - * Marra, R.M., Palmer, B., & Litzinger, T.A. (1998). "A Longitudinal and Cross-Sectional Study of Engineering Student Intellectual Development as Measured by the Perry Model". Proceedings of the Annual Conference of American Society for Engineering Education. Seattle, WA.
 - * Marra, R.M. & Litzinger, T.A. (1997, November). "A Model for Implementing Supplemental Instruction in Engineering". In D. Budny and G. Bjedov (Eds.) 27th ASEE/IEEE Frontiers in Education Conference (FIE) 1997, Pittsburgh, PA.
 - * Marra, R.M. (1996). "Developing a Longitudinal Evaluation Program for a Leadership Minor". In Technology-Based Re-Engineering Engineering Education_(M.F. Iskander & M.A. Yoder, Eds.),. Frontiers in Education FIE '96, 26th Annual Conference. University of Utah: CAEME Center for Multimedia Education and Technology.
 - * Marra, R.M. (1996). "Use of Expert System Generation to Promote Knowledge Synthesis in a Meteorology Forecasting Course". In Technology-Based Re-Engineering Engineering Education (M.F. Iskander & M.A. Yoder, Eds.), Frontiers in Education FIE '96, 26th Annual Conference. University of Utah: CAEME Center for Multimedia Education and Technology.
- Bogue, B., Marra, R.M., Litzinger, T.A., & Johnson, S. (1998). "The Penn State ECSEL Learning Environment Workshop: A progress report", Proceedings of the WEPAN National Conference, pp. 113 – 116.
- Bulgren, W.G., Marra, R.M. and Wetzel, G.F. (1987). "An Introductory Algorithm Teacher", Proceedings of SIGCSE (ACM's Special Interest Group on Computer Science Education), Cincinnati, OH.

Reviewed and Invited Presentations

Arbaugh, F., Marra, R., Abell, S., Lannin, J. K., Cheng, Y., Gagnon, M., Merle, D., & Smith, R. (in review). The Impact of Evaluation on Professional Development Design and Implementation. Submitted to the 2010 Annual Meeting of the American Educational Research Association. Denver, CO.

Marra, R. (2009). Students' Experiences of Science Learning: Potential conflicts in epistemology, pedagogy and knowledge. Invited presentation to New Trends in Science and Technology Education. Modena Italy, April 21 – 23.

Marra, R.; Rodgers, K.; Shen, D. & Bogue, B. (2009). *Leaving Engineering: A Multiyear Single Institution Study*. Paper presented at the annual meeting of AERA. San Diego, April 13 - 17.

Shen, D.; Marra, R.; Jonassen, D.H.; Tsai, C.L.; & Lo, J. (2009). *Fostering Ethical Problem Solving in Engineering: A Comparison of Embedded Links and Question Links in Online Learning Environments*. Paper presented at the annual meeting of AERA. San Diego, April 13 - 17.

Marra, R.; Arbaugh, F.; Lannin, J.; Abell, S.; Ehlert, M., Smith, R. & Merle, D. (2009). *Orientations to Professional Development Design and Implementation: Understanding Their Relationship to PD Outcomes Across Multiple Projects*. Paper presented at the annual meeting of AERA. San Diego, April 13 - 17.

Palmer, B. & Marra, R. (2009). *Students' Views of College Science: Are Instruction and Epistemology Consistent or Conflicting?* Paper presented at the annual meeting of AERA. San Diego, April 13 - 17.

Marra, R.; Peterson, K., & Britsch, B. (2009). *The National Girls Collaborative Project: Developing Capacity for Women in STEM via Collaboration*. Paper presented at the annual meeting of AERA. San Diego, April 13 - 17.

Park-Rogers, M.; Abell, S., Hutchins, K., Arbaugh, F., Marra, R. (2008). Multiple approaches to science teacher professional development: What are they and how do teachers respond? Paper presented at the annual meeting of AERA. New York, New York, March 25 - 29.

Marra, R. (2007). *Meaningful Assessment for Meaningful Learning*. Keynote at Learning With Technology 07, 07 December, Bolzano, Italy.

Bogue, B., Marra, R. (2007). "Making Assessment Work for You". Invited workshop, Annual Meeting of Society of Women Engineers (SWE). Nashville, TN, 24 – 27 October.

- Marra, R. (2007). "Successful Interviews to Attain Your Perfect Academic Appointment". Invited presentation, Annual Meeting of Society of Women Engineers (SWE). Nashville, TN, 24 – 27 October.
- William H. Miller, David Jonassen, Matthew Schmidt, Matthew Easter, I. Gelu Ionas, Rose Marra, Randy Etter and Bruce Meffert (2007). Radiation Protection Technology Curriculum Development. Invited presentation to 52nd Annual Meeting of the Health Physics Society, 8-12 July 2007, Portland, OR.
- Marra, R., Barker, L., Anderson, B., Cohoon, J., Hinkelman, J. (2007). "Assessing K-12 Outreach Activities". NSF BPC and NCWIT May Meetings, 15 May, Boulder, CO.
- Marra, R. (2007). *Assessing and Evaluating Technology Initiatives: Headaches, Decisions and Rewards*. Keynote at Bolzano Conversation 07, 16 March, Bolzano, Italy.
- Marra, R. (2007). "Assessment and Objective Writing as a Capacity Building Tool to Develop Systemically Planned and Implemented Activities". Invited presentation delivered at Northwest Girls Collaborative Project Winter Forum: Collaboration for Successful STEM Programming, February 2, 2007, Redmond, Washington.
- Palmer, B. & Marra, R. (2006). "Liberal Arts Students: Perceptions of Knowledge Domain Epistemologies". Paper presented at annual meeting of the Association for Study of Higher Education (ASHE), Anaheim, CA., 2- 4 November.
- Marra R. (2006). "Assessing Women in Engineering: Benefits and applications". Poster presented at NSF Division of Human Resource Development Joint Annual Meeting. 16 – 17 March. Washington, D.C.
- Marra, R. (2005). "Focusing elearning assessment on meaningful outcomes: Content analysis protocols for online discussion forums". Paper presented at eUniversity eLearning and Innovation in Higher Education.5 – 6 October, 2005. University of Trento – Italy.
- Bogue, B. & Marra, R. (2005). "Making cross-institutional coalitions work: a view into the workings of a successful seven institution collaboration". Paper presented at annual meeting of the American Society for Engineering Education, 12 – 15 June, Portland, OR.
- Marra, R.M., Schuurman, M., Moore, C., & Bogue, B. (2005). "Women engineering students' self-efficacy beliefs – The longitudinal picture". Paper presented at the annual meeting of the American Society for Engineering Education Annual Conference and Exposition Copyright, 12 – 15 June, Portland, OR.
- Bogue, B., Sharma, C., Schuurman, M., Marra, R. (2005). "Taming data: collect, compare and report data using AWE ADAPT". Poster presented at the annual

meeting of the American Society for Engineering Education Annual Conference and Exposition Copyright, 12 – 15 June, Portland, OR.

- Abell, S.; Ehlert, M.; Lannin, Marra, R.M.; Cole, J.;J.; Rogers, M, Lee, M.; Wang, C. (2005). "Profiles Of Mathematics And Science Teacher Professional Development Programs: Theoretical Basis, Activities And Effectiveness". Paper presented at the annual meeting of the American Educational Researchers Association, 12 – 16 April, Montreal, CA.
- Marra, R.M. (2004). "Online Discussion Content Analysis Protocols – A Comparison". Invited Presentation to University of Kentucky Instructional Design Doctoral Students. 19 November 2004.
- Marra, R.M. (2004). "An Overview of Research Methods for Assessing Content of Online Discussion Forums." Invited presentation to 4th Hellenic Conference on Information and Communication Technologies in Education. Athens, Greece. 29 September – 3 October 2004.
- Marra, R.M. & Bogue B. (2004). "Effective Assessment as a Tool to Develop and Enhance WIE/WISE Programs". Workshop delivered at WEPAN National Conference "Route 50 to 50: Shifting Gears for Inclusion", June 6 - 9, Albuquerque, NM.
- Moore, J., & Marra, R.M. (2004). "Analysis of Online Communication and Discussion Forums". Paper presented at the annual meeting of the American Educational Research Association, April 2004, San Diego, CA.
- Marra, R.M., & Bogue, B. (2004). "AWE: Assessment and Evaluation as Tools for Systemic Change". NSF Division of Human Resource Development Joint Annual Meeting (JAM), March 28 – 31, Alexandria, VA.
- Ruel, B., Bogue, B., & Marra, R.M. (2003). "WIE Assessment Tools". WEPAN National Conference "50/50 by 2020: Working Together for Equity", June 8 – 11, Chicago, IL.
- Marra, R.M., & Bogue, B. (2003). "AWE: Assessing Women in Engineering ". Presentation for Women in Girls in Technologies' panel on Program Evaluation, July 2003, Seattle, WA.
- Marra, R.M., Palmer, B. (2003). "Student's Differing Epistemological Development: Some Implications for Science Teaching ". Paper presented at the annual meeting of the American Educational Research Association, April 2003, Chicago, IL.

- Marra, R.M., Moore, J. & Klimczek, A. "A Comparative Analysis of Content Analysis Protocols for Online Discussion Forums". Paper presented at the annual meeting of the American Educational Research Association, April 2003, Chicago, IL.
- Marra, R.M., Howland, J., Diggs, L., & Wedman, J. "Using the Technology Learning Cycle as a Means to Technology Integration". Paper presented at the annual meeting of the American Educational Research Association, April 2003, Chicago, IL.
- Marra, R.M. and Jonassen, D.H. "The Impact of the Design of Constructivist Learning Environments on Faculty Teaching Epistemologies". Paper presented at the annual meeting of the American Educational Research Association, April 2003, Chicago, IL.
- Marra, R.M. (2002). "Creating online learning environments to support epistemological development: Strategies and Limitations". Invited presentation at 6 Congreso Iberoamericano Simposio Internacional 4 Informatica Educativa, 20 – 22 November, 2002, Vigo, Spain.
- Marra, R.M., & Palmer, B. (2002). "Encouraging intellectual growth: Senior college engineering student profiles". Paper presented at the annual meeting of the American Educational Research Association, April 2002, New Orleans, LA.
- Marra, R.M. (2002). "An online course to help teachers 'Use technology to enhance learning': Successes and limitations". Paper presented at the annual meeting of the American Educational Research Association, April 2002, New Orleans, LA.
- Palmer, B. & Marra, R.M.(2002). "Developing epistemology in differing disciplinary contexts". Presentation at Powerful Learning and the Perry Scheme, 10. - 12. January 2002, California State University, Fullerton, CA.
- Marra, R.M., Jonassen, D.H., & Palmer, B. (2002). "Epistemological development: An implicit entailment of constructivist learning environments". Presentation at Powerful Learning and the Perry Scheme, 10. - 12. January 2002, California State University, Fullerton, CA.
- Jonassen, D.H. & Marra, R.M. (2001). "Epistemic beliefs: The implicit entailment of constructivist learning environments". Presentation at 13th Annual Ed-Media Conference, 25 - 30 June 2001, Tampere, Finland.
- Marra, R.M., and Jonassen, D.H. (2001). "Limitations of online courses: Barriers to supporting constructive learning". Presentation at 13th Annual Ed-Media Conference, 25 - 30 June 2001, Tampere, Finland.

- Marra, R.M., and Jonassen, D.H. (2001). "Epistemic beliefs: The implicit entailment of constructivist learning environments". Invited presentation at Instructional Design: Addressing the Challenges of Learning Through Technology and Curriculum, 2. - 5. May 2001, Freiburg, Germany.
- Bogue, B., Marra, R.M., Walser, A. (2001). "In Their Own Words' – Addressing the Issues for Under-represented Groups in the Engineering Learning Environment: A Workshop Training Session for Engineering Faculty and Administrators". Presented at the NAMEPA/ WEPAN National Joint Conference, April 21 – 24, Alexandria VA.
- Palmer, B., Marra, R.M., Wise, J.C., Litzinger, T.A. (2001) "A Longitudinal study of intellectual development of engineering students". Paper presented at the annual meeting of the American Educational Research Association, April 2001, Seattle, WA.
- Marra, R.M., Palmer, B, & Moore, W.S. (2001). "Making the move: Shifts in college students' epistemology in the Humanities and sciences", Paper presented at the annual meeting of the American Educational Research Association, April 2001, Seattle, WA.
- Diggs, L., Wedman, J., & Marra, R.M. (2001). "The Effectiveness of Using the Technology Learning Cycle as a Framework for Faculty Professional Development". Paper to be presented at the annual meeting of the American Educational Research Association, April 2001, Seattle, WA.
- Diggs, L., Marra, R.M., & Wedman, J. (March 2001). "MU Partnership for preparing tomorrow's teachers to use technology". Paper to be presented at the Annual Conference of Society for Information Technology and Teacher Education, Orlando, FL.
- Marra, R.M. & Bogue, B. (2000) "In Their Own Words': A Workshop to Enhance the Learning Environment". Half-day workshop delivered to international audience of faculty and administrators at the Annual Conference of American Society for Engineering Education, June 2000, St. Louis, MO.
- Marra, R.M. & Litzinger, T. (2000) "Learning to Juggle: A Model for New Engineering Faculty Development". Presentation at the Annual Conference of American Society for Engineering Education, June 2000, St. Louis, MO.
- Marra, R.M., Palmer, E., Wise, J., & Litzinger, T. (2000). "An Examination of First to Third-Year Cognitive Growth in Engineering Students". Presentation at the Annual Conference of American Society for Engineering Education, St. Louis, MO.
- Marra, R.M., Palmer, E., & Moore, W. (1999). "Assessing the Big Picture: What are Students Thinking?". Presentation at the Annual Conference of the American Association of Higher Education (AAHE) Assessment meeting, Denver, CO.

- Marra, R.M. (1999). "Challenges of Engineering Education in the 21st Century". Invited speech delivered to the American Educational Researchers Association (Education in the Professions Division) Montreal, Canada.
- Marra, R.M.; Yaeger, P.M., Gray, G.L. & Costanzo, F. (1999). "Active Learning in the Engineering Classroom: Students Master the Content While Gaining Teamwork and Computer Skills". Paper presented at the Annual Conference of the American Educational Researchers Association (AERA), Montreal, Canada.
- Marra, R.M.; Palmer, B., & Litzinger. (1999). "The Effects of a First-Year Engineering Design Course on Student Intellectual Development as Measured by the Perry Scheme". Paper presented at the Annual Conference of the American Educational Researchers Association (AERA), Montreal, Canada.
- Marra, R.M. (1998). "Authentic assessment of project based learning". Presentation at the Séminaire franco-américain sur le thème "Le travail en équipe en Entreprise et à l'Université", IUT de Béthune, Béthune, France.
- Marra, R.M. & Carr, A.A. (1998). "Undergraduate Education Students' Perspectives On Classroom Technologies: A Qualitative Analysis". Paper presented at Annual Conference of Association of Educational Communications and Technology (AECT). St. Louis, MO.
- Marra, R.M. & Bogue, B. (1997). "A Long-Term Assessment of A Women Engineering Orientation and Factors Affecting Retention of Women in Engineering". Presentation at the Annual Conference of American Society for Engineering Education (ASEE). Milwaukee, USA.
- Litzinger, M. E., Carr, A. A. & Marra, R. (1997). "Constructivism, Feminism, and Systemic Change: Finding Common Ground". Presented at the Annual Conference of the Association of Educational Communications and Technology, Albuquerque, NM.
- Carr, A.A., Litzinger, M.E. & Marra, R.M. (1997). "Feminist Pedagogy, Constructivism and Systemic Change: The Search for Common Ground". Paper presented at Annual Conference of American Educational Research Association (AERA). Chicago, IL.
- Marra, R.M. & Jonassen, D.H. (1997). "Transfer Effects of Semantic Networks on Expert Systems: Mindtools at Work", Paper presented at Annual Conference of American Educational Research Association (AERA). Chicago, IL.
- Marra, R.M. & Jonassen, D.H. (1996). "Transfer Effects of Semantic Networks on Expert Systems: Mindtools at Work", Paper presented at Annual Conference of International Society for Learning Sciences (ICSL). Chicago, IL.

- Carr, A. A., Brady, J., Roberts, S., Marra, R., Hammett, R. & Jones, L. (1995). "Round Girls in Square Computers: Feminist Perspectives on the Aesthetics of Computer Hardware." Presented at the Annual Conference of the Journal of Curriculum Theorizing, Monteagle, TN.
- Marra, R.M. & Tessmer, M. (1995). "What's a Meta-For? Metaphors and HCI Design". Paper presented at World Conference on Educational Multimedia and Hypermedia (ED MEDIA). Graz, Austria.
- Marra, R.M. (1995). "Technology in Learning Environments: Interface Attributes that Make Technology Successful". Paper presented at Association for Educational Communications and Technology (AECT). Anaheim, CA.
- Marra, R.M. & Tessmer, M. (1995). "What's a Meta-For? Metaphors and HCI Design". Paper presented at Association for Educational Communications and Technology (AECT). Anaheim, CA.
- Marra, R.M. & Grabinger, R.S. (1994). "HCI Design Guidelines for Learning Environments". Paper presented at 35th International Conference of the Association for the Development of Computer-Based Instructional Systems (ADCIS). Nashville, TN.
- Marra, R.M. & Grabinger, R.S. (1993). "A Course Design for Going Beyond HyperTalk". Presentation at AECT National Conference, New Orleans, LA.
- Marra, R.M. Tessmer, M. & Jonassen, D.H. (1993). "Six Principles for Human Computer Interface Design". Paper presented at AECT National Conference, New Orleans, LA.
- Marra, R.M. & Grabinger, R.S. (1992). "A Course Design for Going Beyond HyperTalk". Presentation at 34th International Conference of the Association for the Development of Computer-Based Instructional Systems (ADCIS), Norfolk, VA.

Workshops Created and Delivered

- Bogue, B. & Marra, R. (2008). "AWE Workshop: Outreach Initiatives That More than "Seem to" but "Do" Workshop delivered at SWE Annual Conference, Baltimore, MD: 5 – 9 November.
- Invited workshop: Marra, R. (2007). "Assessment and Objective writing as a capacity building tools to develop systemically planned and implemented activities".
- Invited workshop: "The Assessing Women in Engineering Project" delivered to the attendees of the annual meeting of the Society for Women in Engineering (SWE), 4 November 2005, Anaheim, CA.

- “AWE: Effective Assessments of Women in Engineering Programs” delivered to the attendees of the annual meeting of the American Society of Engineering Education (ASEE), 12 June 2005, Portland, OR.
- “AWE: Systemic Tools for Program Assessment” delivered to attendees of Women in Engineering Programs & Advocates Network / National Association of Minority Engineering Program Administrators 2005 Joint Annual Conference, April 12, 2005, Las Vegas, NV.
- “AWE: Assessment in Women in Engineering” delivered to attendees of Women Engineering Program & Advocates Network, June 2004, Albuquerque, N.M.
 “Effective Assessment as a Tool to Develop and Enhance WIE/WISE Programs” delivered to attendees of Women in Engineering Programs and Advocates Network, June 2003, Chicago, IL.
- “In Their Own Words: Addressing the Issues for Underrepresented Groups in the Engineering Learning Environment: A Workshop Training Session for Engineering Faculty and Administrators” delivered to the attendees of the NAMEPA/ WEPAN Joint Conference, April 21-24, 2001, Alexandria, VA.
- “Enhancing the Learning Environment” delivered to attendees of American Society of Engineering Education, St. Louis, MO. June 2000.
- “In Their Own Words” Facilitation Training Workshop. University of Washington, October 1999.

Creative Works

Bogue, B. & Marra, R.M.(1999). “In Their Own Words: A Workshop and Video on the Learning Environment”. The Pennsylvania State University: University Park, PA.

Service

Consulting Editor, Educational Technology Research and Development. May 2008 – present.

Journal Reviewer, Journal of Engineering Education, January 2006 - present

Journal Reviewer, Educational Technology Research and Development, January 2006 – May 2008.

National Center for Women in Information Technology, Social Sciences Advisory Board Member, November 2006 – Present.

National Girls Collaborative Project, National Champions Advisory Board, --May 2004 - August 2006.

WEPAN (Women Engineering Program Advocacy Network) 2005 and 2006 National Conference; Co- Chair of Proceedings and Evaluation Committee; proceedings co-editor. June 2004 – April 2005.

University Level: [ET@MO](#) **Faculty Advisory Board.** June 2003 – June 2005.

College of Education: Special Cases for Selection, Retention, Graduation and Certification, August 2003 – July 2006.

College of Education Presentation: “Balancing Career and Life Components”. 9 October 2006.

Major Skills

Instructional and Curricular Design & Higher Education

- Needs assessment and analysis for improved performance
- Goals analysis
- Design specifications
- Strategy and media selection and specification
- Institutionalization of curricular reform
- Assessment of learning outcomes
- Measuring effects of pedagogical changes on student intellectual development
- Formative and summative evaluation
- Conducting interviews to ascertain student intellectual development via the Perry scheme
- Designing and conducting focus groups
- Design, implementation and assessment of faculty development experiences to promote and disseminate uses of effective instructional techniques

Research

- Quantitative and qualitative methodologies
- Writing on assessment for professional accreditation
- Writing on faculty development models
- Inquiry and writing on effectiveness of curricular reforms on student learning outcomes
- Inquiry and writing on developing effective classroom learning environments with emphasis on diversity and gender equity
- Inquiry and writing on developing life-long learning skills in college students
- Inquiry and writing on the impact of curricular change on student intellectual development
- Inquiry and writing on the Perry scheme of intellectual development
- Writing on human computer interface design

Computing and Technology Skills

- Extensive experience programming in C, Pascal and Fortran
- Proficient in the following computing platforms: Macintosh®, Windows, Windows/NT, and UNIX™
- Development of end-user interfaces

Teaching & Curriculum Development

Courses Taught and Developed

- Needs Assessment
- Assessing Educational Outcomes
- Formative and Summative Evaluation for Instructional Design
- Performance Technology
- Introduction to Instructional Systems Design
- Using Technology to Enhance Learning
- Seminar on Teaching for Engineering Graduate Teaching Assistants
- Introduction to Educational Systems Design
- Introduction to Algorithm Development Using Pascal
- Introduction to Algorithm Development Using Fortran

Workshops Taught & Developed

- Creating and Managing Effective Teams (for faculty)
- Creating and Managing Effective Teams (for students)
- “In Their Own Words”: Creating Effective Learning Environments
- Grading and Assessing So It’s Valuable to You and Your Students
- Developing Effective Study Skills
- Effective Uses Of Technology In The Classroom
- National Workshop for Engineering Junior Faculty; four-day curriculum
- Penn State New Faculty Workshop – Colleges of Engineering and Earth and Mineral Sciences