Marion C. Usselman

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Professional Preparation

B.A.	1978	University of California, San Diego, La Jolla, CA, Physics/Biophysics
Ph.D.	1982	The Johns Hopkins University, Baltimore, MD, Biophysics
Postdoctoral Fellow	1982-84	The Johns Hopkins University, Baltimore, MD, Dept. of Biophysics
Research Fellow,	1984-85	Harvard Medical School, Boston, MA, Laboratory of Human Reproduction and Reproductive Biology,

Appointments

2013-Present **Principal Research Scientist**, CEISMC Georgia Tech

2009-Present **Associate Director,** CEISMC, Georgia Tech

- Principal Investigator for the NSF-supported ***Culturally Authentic Practice to Advance Computational Thinking in Youth (CAPACiTY)*** STEM+C grant. 2016-2019
- Co-PI and Program Director on NSF-supported ***Advanced Manufacturing and Prototyping Integrated to Unlock Potential (AMP-IT-UP)*** MSP grant. 2012-2017
- Principal Manager, ***Goizueta GoSTEM Initiative*** project, Georgia Tech. 2011-2017
- Principal Investigator and Program Director on NSF-supported ***Science Learning Integrating Design, Engineering and Robotics (SLIDER)*** DR-K12 program. 2009-2015
- Co-PI on the NSF-supported ***Tech to Teaching*** program (Innovation through Institutional Integration program), 2009-2014

2005-2013 **Senior Research Scientist**, CEISMC, Georgia Tech

- Co-PI on NASA ***Electronic Professional Development Network***. 2009-2013
- Co-PI on the NSF-supported ***Robert Noyce Scholars Program in Physics and Chemistry*** with Kennesaw State Uni. 2008-2011
- Georgia Tech PI on the ***Teacher Leader Program*** with the Fulton County School System, a Georgia Department of Education Math/Science Partnership. 2004-09
- Co-Principal Investigator on the Federal Highway Administration Garrett E. Morgan grant ***Building Engineering Through Transportation***. 2007-2010
- Co-Principal Investigator on the NSF-supported ***Student and Teacher Enhancement Partnership (STEP)*** program (GK-12), 2001-2004, and GK-12 ***STEP Up!*** Track-2 program, 2004-2009.

1996-2005 **Research Scientist II**, CEISMC, Georgia Institute of Technology.

- Co-Principal Investigator on the NSF-supported ***Alternative Approaches to Evaluating STEM Educational Partnerships*** (MSP RETA project), 2003-06
- Co-Principal Investigator on the NSF-supported ***Alternate Pathways to Success in Information Technology*** project (ITWF program), 2002-2004
- Principal Investigator for the NSF supported ***SummerScape: Gender Equitable Science for Students and Teachers*** program. (PWG) 1998-2001
- Program Manager for the NSF supported ***Integrating Gender Equity and Reform (InGEAR)*** program. 1996-1999.

1990-1996 **Adjunct Assistant Professor**, UNC Charlotte, Dept. of Biology

1993-1996 **Program Admin.**, UNC, Charlotte, Math and Science Education Center.

1987-1990 **Instructor**, University of North Carolina, Charlotte, Dept. of Biology

Publications

5 Most Closely Related

- Ryan M, Gale J, and Usselman M. (2016) "Integrating Engineering into Core Science Instruction: Translating NGSS Principles into Practice through Iterative Curriculum Design." Int. Journal of Engineering Education, Special Issue on Current Trends in K-12 Engineering Education. (Accepted)
- Hernandez D, Rana S, Alemdar M, Rao A, and Usselman M. (2016) "Latino Parents' Educational Values and STEM Beliefs." Journal for Multicultural Education. (Accepted)
- Usselman M, Ryan M, Rosen JH, Koval J, Grossman S, Newsome NA, and Moreno MN. (2015) "Robotics in the Core Science Classroom: Benefits and Challenges for Curriculum Development and Implementation". Proceedings of the 2015 American Society for Engineering Education Annual Conference & Exposition
- Usselman, M., & Ryan M. (2014). " SLIDER: Science Learning: Integrating Design, Engineering and Robotics". In C. Sneider (Ed.), Engineering Curricula Ready to Go!. Corwin Press
- Usselman, M, Ryan, M., Gane, B., Grossman, S., Rosen, J., Robinson, N., & Stillwell, F. (2013). "Integrating K-12 Engineering and Science; Balancing Inquiry, Design, Standards and Classroom Realities". Proceedings of the 2013 American Society for Engineering Education Annual Conference & Exposition

5 Other Significant

- Mayer, G., Lingle, J., & Usselman, M. (2016) "Student Involvement, Satisfaction, and Cohesion in Synchronous Online Recitations". Educational Technology and Society. (Accepted)
- Moore R, Newton SH, Rosen JH, Usselman M, and Wind SA. (2015). "High School Engineering Class: From Wood Shop to Advanced Manufacturing". Proceedings of the 2015 American Society for Engineering Education Annual Conference & Exposition
- Llewellyn, D., Usselman, M., Edwards, D., Moore, R., & Mital, P. (2013) "Analyzing K-12 Education as a Complex System." Proceedings of the 2013 American Society for Engineering Education Annual Conference & Exposition
- Rosen, J, Stillwell, F. & Usselman, M. (2012). "Promoting Diversity and Public School Success in Robotics Competitions." In B.S. Barker et. al. (Eds.), Robots in K-12 Education: A New Technology for Learning. (pp. 326-342). IGI Global, Hershey, PA
- Morley, T., Usselman, M., Clark, R. & Baker, N. (2009) "Calculus at a Distance: Bringing Advanced Mathematics to High School Students Through Distance Learning". Proceedings of the 2009 American Society for Engineering Education Annual Conference & Exposition

Synergistic Activities

- **K-12 STEM Curriculum Development and Research:** Designs, implements and studies integrated STEM curricula for K-12 students as part of multiple educational research projects.
- **STEM Education for Under-represented Groups:** Involved in campus initiatives to improve the Georgia Tech campus climate for women and minorities, in efforts to increase the number of under-represented groups enrolling at Georgia Tech, and in programs to improve STEM K-12 STEM education for under-represented groups, including rural, low SES, Latino, African American, and female.
- **Teacher Professional Development**: Coordinates and conducts professional development workshops for K-12 teachers on science content, Next Generation Science Standards, inquiry pedagogy, classroom equity, and hands-on science activities.
- **University-School System Partnerships:** Connects Georgia Tech professors with Metro-Atlanta area school systems and teachers to foster university/K-12 collaborations.
- **Online Learning:** Active in developing web-delivered STEM professional development courses for K-12 teachers, with emphasis on project-based and collaborative learning.