Laura E. McCullough
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Education

Ph.D., Science Education, University of Minnesota: "The Effect of Introducing Computers into an Introductory Physics Problem-Solving Laboratory"	1996-2000
M.S., Physics, University of Minnesota	1994-1997
B.A., Physics, Hamline University, magna cum laude, ΦBK	1990-1994

Academic Positions Held

Professor, Chemistry & Physics Department, University of Wisconsin-Stout	2010-present
Department Chair, Physics Department, University of Wisconsin-Stout	2008-2014
Associate Professor, Physics Department, University of Wisconsin-Stout (tenured 2006)	2004-2010
Assistant Professor, Physics Department, University of Wisconsin-Stout	2000-2004

Teaching Experience

I have 18 years' experience at teaching introductory college-level physics courses; I prefer to teach introductory college-level physics. I have received very positive student feedback in all courses, and my courses tend to fill quickly. My classes aren't viewed as easy, but I am viewed as being very supportive and helpful as an instructor.

Courses taught (UW-Stout):

General Physics I & II (4-credit algebra-based introductory course)
College Physics I & II (5-credit calculus-based introductory course for technical majors)
University Physics II (5-credit calculus-based introductory course for scientists & engineers)
Science Education 101 (1-credit introductory course for pre-service teachers)
Meteorology (2-credit general education course)
Light and Color (2-credit general education course and 3-credit course with lab)

Courses taught (University of Minnesota):

Studies in Science Education (graduate course for in-service teachers)
TA Orientation course (course to introduce new TAs to teaching physics)

Publications

McCullough, L. (In press.) "Women and Physics Leadership". AIP Conference Proceedings for 6th Int'l Conference on Women in Physics.

McCullough, L., Chessey, M., Cochran, G., Cunningham, B., Johnson, A., and Singh, C. (In press.) "Gender Bias in Physics: An International Forum". AIP Conference Proceedings for 6th Int'l Conference on Women in Physics.

Bjorkquist et al. (In press.) "Women in physics in the United States: Reaching toward equity and inclusion". AIP Conference Proceedings for 6th Int'l Conference on Women in Physics.

McCullough, L. (2018). “Getting Started in Physics Education Research: Gender and Minorities”. Getting Started in PER, edited by C. Henderson and K. A. Harper (American Association of Physics Teachers, College Park, MD, 2016), Reviews in PER Vol. 3.

McCullough, L. (2017). “The ‘Problem’ of Women in Physics”. PERCOGS newsletter special issue #3 May 2017. https://sites.google.com/site/pergraduatestudents/newsletters

McCullough, L. (2016). Seeking the Elusive “Woman in Physics”. McSweeney’s Internet Tendency. https://www.mcsweeneys.net/articles/seeking-the-elusive-woman-in-physics

McCullough, L. (2016). Women and Physics. Morgan & Claypool. Part of the British Institute of Physics’ Concise Physics series.

McCullough, L. (2014). "Women in Physics: A Review" and "Gender in the Physics Classroom". Reprints in Women in Physics, AAPT Press. Available at http://iweb.aapt.org/iweb/Purchase/ProductDetail.aspx?Product_code=RB-75.

McCullough, L. (2012). Hey, you got science in my fiction! In Stanish, D. & Myles, L. (Eds). Chicks Unravel Time. Mad Norwegian Press: Des Moines, IA. (Essay in non-fiction book about the Doctor Who science fiction series.)

McCullough, L. (2012). Women in College Physics Classes: Does Gendered Context Affect Performance on Tests? In Veenstra, C., Padro, F., and Furst-Bowe, J. (Eds) Advancing the STEM Agenda. 151-166. ASQ Press: Milwaukee, WI.

McCullough, L. (2011). Women's Leadership in Science, Technology, Engineering, and Mathematics: Barriers to Participation. Forum on Public Policy Online, Vol 2011 no 2. (August 2011). http://forumonpublicpolicy.com/vol2011.no2/papers2011vol2.html

McCullough, L. (2011). Nibbled to Death by Ducks. Academic Leader 27(8), 7-8. (August 2011.) This was republished as a blog post August 2012 by Magna Publications: http://www.magnapubs.com/blog/academic-administration/nibbled-to-death-by-ducks-implications-for-the-department-chair/

McCullough, L. (2011). Gender Differences in Student Responses to Physics Conceptual Questions Based on Question Context. ASQ STEM Agenda Conference Proceedings. July 19-20, 2011, University of Wisconsin-Stout, Menomonie, WI.

McCullough, L. (2007). Gender in the Physics Classroom. The Physics Teacher 45, 316

McCullough, L. (2006). Science News in the Science Classroom. Journal of College Science Teaching 36(3), 30-33.

Whitten, B., Foster, S., Duncombe, M., Allen, P., Heron, P., McCullough, L., Shaw, K., Taylor, B., Zorn, H., (2004). “Like a family”: What works to create friendly and respectful student-faculty interactions. Journal of Women and Minorities in Science and Engineering. 10(3), 229-242.

McCullough, L. (2004). Gender, Context and Assessment. Journal of International Women's Studies 5(4). Special Issue: Women in Science.

McCullough, L. & Krieger, A. (2004). A Census of the Physics Education Research Community. (Report)

Whitten, B.L., S. R. Foster, M. L. Duncombe, P. E. Allen, P. R. L. Heron, H. M. Zorn, L. McCullough, K. A. Shaw, B. A. P Taylor (2003). What Works? Increasing the participation of women in undergraduate physics. Journal of Women and Minorities in Science and Engineering 9(3/4) 239-258.

McCullough, L. (2003). Letter to the Editor, Physics Today, 56(7), 17. (Letter describing short research project on gender in Physics Today photographs.)

MacIsaac, D., Cole, R., Cole,D., McCullough, L., and Maxka, J. (2002). Standardized Testing in Physics via the World Wide Web. Electronic Journal of Science Education 6(3) March 2002

McCullough, L. (2002). "Gender, Math, and the FCI." Proceedings of the 2002 Physics Education Research Conference. S. Franklin, J. Marx, & K. Cummings, Eds. Rochester NY.

McCullough, L. (2002). Women in Physics: A Review. The Physics Teacher 40(2) February 2002

McCullough, L. (2001). A Pipeline in Need of Patching: The Steady Drain of Female Potential from Physics. March 2001 Newsletter of the National Society of Black Physicists

McCullough, L. & Meltzer, D. (2001). "Differences in male/female response patterns on alternative-format versions of FCI items." Proceedings of the 2001 Physics Education Research Conference. pp.103-106. S. Franklin, J. Marx, & K. Cummings, Eds. Rochester NY.

Selected Service Activities

Service is essential to me being a productive member of a department and a community. I am heavily invested in service and have found a successful balance between teaching, research and service in my career. The selected service activities below show the breadth of my service activities and my commitment to helping out my university, my department, and my profession.

Selected service to University and Department:
Department Chair, Physics Department, UW-Stout (2008-2014)
Member, Search Committee for UW-Stout Chancellor (2014)
Chair, Search Committee for UW-Stout Provost (2006-07)
Member, Search Committee for UW-Stout Provost (2012)
Member, UW-Stout Sabbatical Review Committee (2011-present; chair for 2013-14)
Member, UW-Stout Termination of Employment Committee (2010, 2012)
Program director, Applied Science: Science Education (2005-2006)
Chair, UW-Stout Institutional Review Board (2003-2005)
Chair, Physics Department Search Committee for faculty search (2004-05, 2007-08, 2013-14)
Chair, Search Committee for Biotech/Nanotech DIN faculty hires (2008)
Member, Advisory Boards for NSF WIDER/EAGER grant, NSF GREAT Falcon grant
Member, UW-Stout Women's Issues Committee (2010-2014)
Member, UW-Stout Institutional Review Board (2000-2009)
Member, UW-Stout Research Advisory Board (2001-2006)
Member, UW-Stout University Associate Professor Promotion Committee (elected by peers for 2004-2005, 2006-2007, 2011-2012, 2013-2014, 2015-2016)
Member, UW-Stout Science Education Program Committee (2006-2015)
Member, UW-Stout Women & Gender Studies Committee (2004-2012)
Member, Search Committee for UW-Stout STEM Dean (2007-08, 2008-09)
Member, Search Committee for UW-Stout Chemical Hygiene Officer (2010)
Faculty discussion leader for Honors Colloquium (Fall 2003, Spring 2013, Spring 2014, Fall 2014)

Judge, Sheri Nero Award for best undergraduate project involving gender (Spring 2005, 2006, 2007)

Selected service to profession and community:
Delegate, US delegation to the 6th International Conference on Women in Physics (2017)
Member, American Physical Society Committee on the Status of Women in Physics (2016-present)
Co-editor, Proceedings of the Physics Education Research Conference (2005-2007)
Reviewer for Journal of College Science Teaching, American Journal of Physics, The Physics Teacher, Physical Review Special Topics: Physics Education Research (2001-present)
Member, UW-System Women & Science Advisory Board (2002-present)
External evaluator, Marquette University Noyce Scholars Program (2016-present)
Member, Advisory Board for NSF grant at UW-River Falls: Great Falcon Project (2013-2015)
Member, Advisory Board for NSF grant: WIDER: EAGER: Increasing Faculty Use of Formative and Summative Assessment through Online Resources and Faculty Development (2013-2015)
Member, American Association of Physics Teachers (AAPT) Committee on Professional Concerns (2012-2015; vice-chair 2013-14, chair 2014-15)
Member, AAPT Meeting Committee (2014-2016)
Member, AAPT Publications 5-year review committee (2012)
External evaluator, Marquette University Noyce Scholars Program (2009-2015)
Member, AAPT Research in Physics Education Committee (2003-2006)
Member, Physics Education Research Leadership Organizing Council (2011-2013)
Treasurer, Physics Education Research Leadership Organizing Council (2012-2013)
External reviewer, Winona State University (MN) five year program review of physics department (2012)
External evaluator, Slippery Rock University physics curriculum implementation (2002)
Reviewer for Fulbright Specialist Program (2011-present)
Member, planning committee for UW-System Women's Studies Conference at UW-Stout (2003)
Co-chair, UW-System Women & Science Advisory Board (2003-2005, 2016-18)
Physics instructor, STEPS summer camp program for 6th-grade girls (Summer 2001, 2002, 2003, 2004, 2006, 2007)
Director, STEPS summer camp program for 6th-grade girls (Summer 2001)
Event supervisor for Regional Science Olympiad at Menomonie High School (2003-2005)
Event supervisor for Wisconsin State Science Olympiad (2003-2005)
Board member, Wisconsin Science Olympiad (2005-2006)

Presentations

The majority of my presentations have been in gender and science, focused on the physics classroom and assessment.

I have been invited to give presentations at schools all over the country, including Minnesota, Ohio, Illinois, and Texas. I have given more than 30 invited presentations since 2000. I have also given more than 30 contributed presentations across the country in that same time. Full list available on request. Many presentations are available for download at http://lauramccphd.com/index.php/home/research/selected-presentations/.

Recognition & Awards

1993 Emma K. Malmstrom Research Award, Hamline University physics department
1996 Outstanding Teaching Assistant recognition, University of Minnesota physics department
2003 Outstanding Educator of the Year, University of Wisconsin-Stout
2003 Teacher of the Year, University of Wisconsin-Stout, College of Arts & Sciences (student choice)
2003 Nelva G. Runnalls Research Support Recognition Award to the Research Advisory Council
2004 Nelva G. Runnalls Research Support Recognition Award to the Institutional Review Board (I was chair of the IRB at the time the award was given)
2006 Merle Price Faculty Award of Excellence

2009 UW-Stout Sabbatical (one semester)
2015 Outstanding Teacher Award, University of Wisconsin-Stout, College of STEM (student choice)
2017 Research Fellowship, University of Wisconsin-Stout (25% reassigned time for one semester)

Grants

While most of my research has been conducted without funding, I have numerous grant proposals submitted and multiple successful grants awarded.

2018 UW-Stout Professional Development Grant: PI
2011 NSF Research in Disabilities Education: co-PI ($440,000, 3 years)
2010 UW-Stout Professional Development Grant: PI
2010 UW-Stout Research Incubator Grant: co-PI
2009 NSF Noyce Scholarship Program: External Evaluator
2009 UW-Stout Professional Development Grant: PI
2008 UW-Stout Chancellor's Leadership Development Program for Women: PI
2008 UW-Stout Curricular Incubation Center: co-PI
2007 UW-Stout Professional Development Grant: PI
2006 UW-Stout Curricular Incubation Center: co-PI
2005 UW-Stout Professional Development Grant: PI
2003 UW-Stout Professional Development Grant: PI
2001 UW-Stout Professional Development Grant: PI
2000 UW-System Women and Science Program: PI
2000 UW-Stout Faculty Research Initiative: PI
2000 UW-System Undergraduate Teaching & Learning Grant: PI

Advising

I have advised from 2-9 Applied Science students almost every semester since 2001. I have advised one M.S. in Education student, served on one master's committee, and have been a project advisor for Honors projects for two students. I served as faculty advisor for the Stout Macintosh Users Group and as the physics minor advisor for four years, with 1-4 students each semester. (UW-Stout does not have a physics major.)

Program and course development

Science Education licensure program, Applied Science concentration: I developed a new licensure program for the UW-Stout community. I worked alone with occasional input from members of the sciences, education, and the Wisconsin Department of Public Instruction. The process took approximately a year from beginning to create a program to getting approval by UW-Stout and the Wisconsin DPI. The program had to meet all of Stout's requirements and all of the DPI licensure requirements. I am very proud of this program, which was initially designated a concentration within the Applied Science program. As part of this process, I developed six SCIED courses for the program. The program has since been approved as a full stand-alone major, work done by the program director who took over after I stepped down.

I also have developed a Gender and STEM (Science, Technology, Engineering, and Mathematics) course as part of the Women & Gender Studies Program.

Professional Memberships

American Association of Physics Teachers
Wisconsin Area Physics Teachers
American Physical Society
APS Forum on Education
National Assn. of Research in Science Teaching
National Science Teachers Association
American Association of University Women
Association of Women in Science

I have a strong record of teaching, research, and service. I enjoy all three of these, and keep up to date via numerous professional development opportunities. My primary focus is teaching, particularly the introductory physics courses. I also have focused a great deal on service at all levels, a duty I take pleasure in. These activities have not kept me from doing research, and I continue to be invited to give talks on a variety of topics, at institutions and conferences across the US.