

VITA

## CYNTHIA HUFFMAN

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### EDUCATION:

1994 Ph.D. in Mathematics, New Mexico State University, Las Cruces, New Mexico

1987 M.S. in Mathematics, Pittsburg State University, Pittsburg, Kansas (Graduate Dean's Scholastic Honors, 4.00)

1986 B.S.Ed. in Mathematics, Pittsburg State University, Pittsburg, Kansas (Summa cum laude, 4.00)

### WORK EXPERIENCE:

2013 – present University Professor (competitive rank), Pittsburg State University

2006 – 2013 Professor, Pittsburg State University

2002 – 2008 Assistant Coordinator of the PSU Writing Across the Curriculum Program

1999 – 2006 Associate Professor, Pittsburg State University

1994 – 1999 Assistant Professor, Pittsburg State University

1993 – 1994 Teaching Associate, Cornell University

1988 – 1993 Graduate Assistant, New Mexico State University

1992 – 1993 Senior Support Staff, National Science Foundation Young Scholars Mathematics Workshop in the Rockies

1986 – 1987 Graduate Assistant, Pittsburg State University

### RESEARCH INTERESTS:

Mediated and Online Instruction

History of Mathematics

Computational Commutative Algebra

Undergraduate Mathematics Education

### MEMBERSHIPS:

American Mathematical Society

Kappa Mu Epsilon (Faculty Advisor 1995-96, 2003 - 2015,

Corresponding Secretary 1996-99, Regional Director 2001- 2008,

National Treasurer 2007 - 2015, National Historian 2017 - 2021)

Mathematical Association of America

MOKAN Chapter of the National Council of Teachers of Mathematics

Phi Kappa Phi Honor Society (Chapter VP, 1985-87)

Phi Delta Kappa Honor Society

### DISTINCTIONS AND HONORS:

Presidential Award for Excellence in Science, Mathematics & Engineering Mentoring Nominee (2021)

Mathematical Association of America (MAA) Deborah and Franklin Haimo Award for Distinguished

College or University Teaching of Mathematics Nominee (2016)

KSMAA Award for Distinguished College or University Teaching of Mathematics (2015)

PSU Outstanding Faculty Award (2010, 2014)

PSU Outstanding Faculty Award Nominee (2000, 2007, 2010, 2014)  
 PSU College of Arts & Sciences Excellence in Teaching award (2003, 2016)  
 PSU College of Arts & Sciences Excellence in Service award (2019)  
 PSU Athletic Council Outstanding Faculty Recognition (2017)  
 Mathematical Association of America (MAA) Certificate of Meritorious Service (2002)  
 PSU Center for Teaching, Learning, and Technology Faculty Spotlight (2019)  
 PSU OpenPITT Open Resource Materials Development Grant (2018)  
 PSU Summer Teaching Innovation Grant (1998, 2003, 2013, 2017)  
 Linda Hall Library of Science, Technology and Engineering Research Fellowship (2015)  
 PSU grant for Stipend for Undergraduate Student Research (2019)  
 PSU Leadership Class (2008)  
 PSU Outstanding Alumni Award (2002)  
 American Association for the Advancement of Science (AAAS) Women's International Science Collaboration travel grant (2001)  
 National Research Council (NRC) Collaboration in Basic Science and Engineering travel grant (2001)  
 Association for Women in Mathematics (AWM) travel grant (1996, 2000)  
 National Science Foundation (NSF) Educational Materials Development grant (support personnel 2001-2003, sub-contractor 2004-2007)  
 PSU Faculty Development Curriculum Grant for Internationalization (2009, 2010)  
 PSU Research grant (2000, 2001, 2002)  
 PSU College of Education Enhancement of Multicultural Education minigrant (2000, 2004)  
 VIP listee with Marquis Who's Who (2019, 2020, 2021)  
 International Who's Who of Professional and Business Women (2000, 2002, 2003)  
 Who's Who Among America's Teachers (2000, 2004, 2005)  
 Who's Who of American Women, 25<sup>th</sup> Silver Anniversary Edition (2005)  
 Who's Who of American Women (2007, 2008-2009, 2010-2011)  
 Who's Who in American Education (2006-2007, 2007-2008)  
 Who's Who in Science and Engineering (2006-07, 2007-2008)  
 Who's Who in America (2007, 2013, 2014, 2015, 2016, 2019)  
 Cambridge Who's Who (2007-2008), Honor Edition (2008)  
 MAA Project NExT Fellow (1994-95), Consultant (2006 – present)

## PROFESSIONAL SERVICE:

- MAA Classroom Resource Material Book Series Editorial Board (Associate Editor 2011 – 2019, Editor in Chief 2019 – present)
- Secretary/Treasurer, History of Mathematics Special Interest Group of the Mathematical Association of America (2018 – present)
- National Historian, Kappa Mu Epsilon Mathematics Honor Society (2017 – 2021)
- National Treasurer, Kappa Mu Epsilon Mathematics Honor Society (2007 – 2015)
- Regional Director, Kappa Mu Epsilon Mathematics Honor Society (2001 – 2008)
- Mathematical Association of America (MAA) Board of Governors (2012 – 2015)
- Chair-Elect (2008 – 2009), Chair (2009-2010), Kansas Section of the MAA
- Information Coordinator and Webmaster and Newsletter Editor, Kansas Section of the Mathematical Association of America (1996 – present)
- PSU eLearning Academy Steering Committee and Course Reviewer (2012 – present)
- Directed over 65 Masters Research Projects
- Numerous (over 325) presentations at local, state, national, and international levels on research, teaching, mediated instruction, mathematics and business, mathematics and music, mathematics and puzzles, ...
- Published Open Educational Resource Materials – over 20 learning activities and one course, <https://digitalcommons.pittstate.edu/oer-math/>, over 6800 downloads in over 120 countries

**COMMUNITY SERVICE:**

- Loan Supervisory Committee for the Kansas Teachers Community Credit Union Executive Board (2005 - 2015)
- Habitat for Humanity of Crawford County Executive Board (2008-2012)
- Dozens of programs for civic and social groups on mathematics, handbell solo ringing, and international travel

**PUBLICATIONS:**

1. *An Algorithmic Proof of Suslin's Stability Theorem for Polynomial Rings*, with H. Park, *Journal of Algebra* **178**, (1995), p. 277-298.
2. *An Algorithm for the Quillen-Suslin Theorem for Monoid Rings*, with R. Laubenbacher, *Journal of Pure and Applied Algebra* **117-118**, (1997), p. 395-429.
3. *Review of An Introductory Course in Commutative Algebra. by A. W. Chatters & C. R. Hajarnavis and Introduction to Algebra. by Peter J. Cameron*, *The American Mathematical Monthly*, **106** No. 5, (May 1999), p. 481-483. (Article DOI: 10.2307/2589171; Stable URL: <http://library.pittstate.edu:2091/stable/2589171>)
4. *A New Algorithm for the Quillen-Suslin Theorem*, with R. Laubenbacher, *Contributions to Algebra and Geometry* **41**, (2000), p. 23-32.
5. *Factoring Multivariate Polynomial Matrices*, *Proc. Digital Signal Processing & Appl's* **2**, (2000), p. 291-293.
6. *The Quillen-Suslin Theorem and the Design and Implementation of Multi-Dimensional Filter Banks*, with M. Tchobanou, *Proc. Digital Signal Processing and Its Applications* **2**, (2000), p. 314-315.
7. *Formulating a Plan for Your Professional Future*, with G. Ashline, J. Case, and K. Pearson, *MAA Focus*, (May/June 2001), p. 7-9.
8. *Design of M-D Filter Banks by Factorization of M-D Polynomial Matrices*, with M. Tchobanou, *Proc. Intl. Conf. on Information, Communications, and Signal Processing*, (2001).
9. *Gröbner Bases – A Powerful Tool for Solving DSP Tasks*, *Proc. Digital Signal Processing and Its Applications* **1**, (2002), p. 163-165.
10. *Factorization of M-D polynomial matrices for design of M-D multirate systems*, with M. Tchobanou, *Proc. Intl. Symposium on Mathematical Theory of Networks and Systems*, (2002).
11. *Design and Implementation of 2-D and 3-D Multirate Systems*, with O. Bolshakova, V. Klyushkin, V. Mironov, S. Stephachew, M. Tchobanou, *Proc. Intl. TICSP Wkshp on Spectral Methods and Multirate Signal Processing*, (2002).
12. *Implementation Issues in 2-D Filter Bank Design Based on Matrix Factorization*, with M. Tchobanou, *Proc. XI European Signal Processing Conf.*, (2002).
13. *Effective implementation of M-D multirate systems by factorization of M-D polynomial polyphase matrices*, with M. Tchobanou, *Proc. Digital Signal Processing and Its Applications*, (2003), p. 156-158.
14. *The Algebra Underlying Account Rules: A Teaching Note*, with R. Casey and D. O'Bryan, *Accounting Instructors' Report*, (2003).
15. *Writing to Learn for Elementary Statistics*, with A. Jayawardhana, *Proc. Joint Statistical Meetings*, (2005).
16. *PascGalois Classroom Resources: Mathematics for Elementary Education*, with N. Zumoff, published online in 2007 by the PascGalois Project at <http://www.pascgalois.org/>.
17. *PascGalois Mathematics for Elementary Education Classroom Resources*, with N. Zumoff, *Loci* (July 2008), DOI: 10.4169/loci002638.
18. *MAA 2009 Study Tour of Egypt*, with S. McCracken, S. Riehl, P. Schumer, B. Warren, *MAA Focus*, Vol. 29, No. 6, (Dec. 2009/Jan. 2010), p. 14-15.
19. *Roman Road Trip: Study Tour*, with Jackie Dewar, *MAA Focus*, Vol 32, No 6, (Dec. 2012/Jan. 2013), p. 29-30.

**PUBLICATIONS continued:**

20. *Maya Geometry in the Classroom*, with J. Diamantopoulos, Loci Convergence (August 2013) - <http://www.maa.org/publications/periodicals/convergence/maya-geometry-in-the-classroom>.
21. *Inside Passage Alaska*, with Jackie Dewar, MAA Focus, Vol. 33, No. 6, (Dec. 2013/Jan. 2014), p. 20-23.
22. *The Greek Streaker and the Secret of the Prayer Book*, video, (April 2014), <http://libguides.pittstate.edu/history-of-math>.
23. *Making a Right Angle the Maya Way*, with J. Diamantopoulos, Plus Magazine, (Sept. 2014), <http://plus.maths.org/content/making-right-angle-maya-way>.
24. *Napoleon and Mathematics: A Case Study of the Interplay between Mathematics and History*, with C. Childers, The Midwest Quarterly, Vol. 56, No. 3 (Spring 2015), p. 209-216.
25. Translation of *A solution of certain Diophantine problems* by Leonhard Euler from Latin to English, *Euler Archive* (peer-reviewed), <http://eulerarchive.maa.org/pages/E474.html>.
26. *Ancient Indian Rope Geometry in the Classroom*, with S. Thuong, Convergence (October 2015) - <http://www.maa.org/press/periodicals/convergence/ancient-indian-rope-geometry-in-the-classroom>.
27. *Mathematical Treasures at the Linda Hall Library*, Convergence (January 2017, July 2017, June 2018, September 2019, December 2019, June 2020), DOI:10.4169/convergence20170101, <https://www.maa.org/press/periodicals/convergence/mathematical-treasures-at-the-linda-hall-library> (introductory article plus 39 Mathematical Treasure articles)
28. *More Classroom Activities Based on Ancient Indian Rope Geometry*, with S. Thuong, Convergence (May 2018) - <https://www.maa.org/press/periodicals/convergence/more-classroom-activities-based-on-ancient-indian-rope-geometry>.
29. Translation of *A problem of a certain construction of Pappus of Alexandria* by Leonhard Euler from Latin to English, with Cameron Friend, (peer-reviewed), <http://eulerarchive.maa.org/pages/E543.html>.
30. "Euler Archive Spotlight – Popular Downloads," *Euleriana*: 1(1), 2021, p. 141, Article 9. Available at: <https://scholarlycommons.pacific.edu/euleriana/vol1/iss1/9>
31. *Mathematical Mysteries of Rapa Nui with Classroom Activities*, joint with X. Catepillan and S. Thuong, Convergence (March 2021), also published in Spanish (September 2021), <https://www.maa.org/press/periodicals/convergence/mathematical-mysteries-of-rapa-nui-with-classroom-activities-mathematical-mystery-1-rongorongo> and <https://www.maa.org/press/periodicals/convergence/misterios-matem-ricos-de-rapa-nui-con-actividades-para-el-aula-de-clases>
32. *Review of Proving It Her Way: Emmy Noether, a Life in Mathematics*, MAA Reviews, July 2021, <https://www.maa.org/press/maa-reviews/proving-it-her-way-emmy-noether-a-life-in-mathematics>
33. *Review of Emmy Noether – Mathematician Extraordinaire*, MAA Reviews, July 2021, <https://www.maa.org/press/maa-reviews/emmy-noether-mathematician-extraordinaire>
34. "Euler Archive Spotlight – Tribute to C. Edward Sandifer," *Euleriana*: 1(2), 2021, p. 168, Article 4. Available at: <https://scholarlycommons.pacific.edu/euleriana/vol1/iss2/4/>
35. *An Ancient Egyptian Mathematical Photo Album - Hieroglyph Numerals and More*, Convergence (April 2022) - <https://www.maa.org/press/periodicals/convergence/an-ancient-egyptian-mathematical-photo-album-hieroglyph-numerals-and-more>
36. *Agnesi vs. Colson: Did Place Matter?*, submitted to the Canadian Society for History and Philosophy of Mathematics Annals, accepted and to appear
37. "Euler Archive Spotlight – The Basel Problem," *Euleriana*: 2(1), p. 56, Article 8. DOI: <https://doi.org/10.56031/2693-9908.1024> Available at: <https://scholarlycommons.pacific.edu/euleriana/vol2/iss1/8>
38. "Euler Archive Spotlight – The Translations of Jordan Bell," in progress for *Euleriana*: 2(2), 2022

**PUBLICATIONS continued:**

- 39. *Mentoring a Math Ed Statistical Project*, in progress, joint with Ananda Jayawardhana
- 40. *Investigating foundations of ancient Rapa Nui houses*, joint with Ximena Catepillan, requested for submission to an MAA Notes publication, Cross-Curricular Applications for Pure Mathematics Courses, accepted and to appear

**SELECTED INVITED TALKS:**

- 3/22 *Ringling Math*, South-Central Kappa Mu Epsilon (national mathematics honor society) Regional Convention, virtual, March 5, 2022 <https://www.youtube.com/watch?v=RKeZlvXErEM>
- 12/21 *Cosets in the Belfry*, invited presentation for the History of Math Special Interest Group of the Mathematical Association of America's First Wednesday Virtual Speaker Series, [https://youtu.be/JnaHuG\\_2q\\_s](https://youtu.be/JnaHuG_2q_s)
- 4/21 *Emilie du Chatelet and Original Sources at the Linda Hall Library*, invited presentation for the Linda Hall Library President's Circle, <https://vimeo.com/643587407>
- 4/18 *A Mathematical Treasure Trove in Our Own Backyard (A Look at Primary Sources in Mathematics at the Linda Hall Library)*, invited keynote address, Kappa Mu Epsilon (Mathematics Honor Society) North Central/South Central Regional Convention, Emporia, KS
- 3/17 *Bell-y Math: Connections between Mathematics and Change Ringing*, faculty-led workshop, Kappa Mu Epsilon (Mathematics Honor Society) National Convention, Springfield, MO
- 10/15 *Influential Books in the Development of Arithmetic and Algebra in the 15th and 16th Centuries*, Linda Hall Library Research Fellow Lecture, Linda Hall Library, Kansas City, MO, <https://vimeo.com/142256343>
- 1/13 *Geometry and Baroque Architecture in Turin, Italy*, special presentation, History of Math Special Interest Group of the MAA annual meeting, San Diego, CA
- 10/08 *Mathematical Rhythms: the nature of rhythm and pattern from a mathematical perspective*, invited lecture for the opening reception of the exhibit "The Art of Rhythm" at the Little Room Gallery in Pittsburg, Kansas
- 2/02 *Gröbner Bases – A Powerful Tool for Solving DSP Tasks*, plenary talk, Fourth International Conference and Exhibition, Digital Signal Processing and Its Applications, Moscow, Russia
- 11/00 *Factoring Polynomial Matrices*, Third International Conference and Exhibition, Digital Signal Processing and Its Applications, Moscow, Russia
- 10/99 *Computational Methods in Commutative Algebra*, Colloquium, University of Missouri-Rolla
- 9/98 *A Computational Proof of Gubeladze's Theorem*, Colloquium, University of Kansas
- 1/97 *Trivializing Vector Bundles Over Affine Toric Varieties*, AMS Special Session on Computational Algebraic Geometry, Joint Mathematics Meetings, San Diego
- 10/96 *An Algorithm for the Quillen-Suslin Theorem for Monoid Rings*, AMS Special Session on Commutative Algebra, Lawrenceville, NJ

For more information, including a complete list of professional presentations (over 325), Master's Research Problems supervised (over 65), Courses Taught (over 40), and Open Educational Resource Materials (over 20 + 1 course), see <https://www.pittstate.edu/math/faculty-pages/cynthia-huffman.html> .