

Kathleen M. Shannon, Professor  
Department of Mathematics and Computer Science  
Salisbury University  
Salisbury, MD 21801  
Voice: (410)543-6476 Fax: (410)548-5559  
E-Mail: [KMShannon@salisbury.edu](mailto:KMShannon@salisbury.edu)  
Web Site: <http://faculty.salisbury.edu/~kmshannon/>

**Education:**

**Ph.D.** in applied mathematics from Brown University: August, 1984

**M.Sc.** in applied mathematics from Brown University: June, 1981

**B.A.** in mathematics and physics from the College of the Holy Cross: May, 1980

**Thesis advisor:** P.J. Davis, Ph.D., Brown University

**Teaching and related work experience:**

2010-present	Director, Center for Applied Mathematics and Science at Salisbury University(CAMS)
1999 - present	Professor of Mathematics, Salisbury University*
1999 - 2009	Chair, Department of Mathematics and Computer Science, (except sabbatical leave for 2002-2003 academic year) Salisbury University*
2015 -	Mathematics Education Subject Editor for Problems, Resources, and Issues in Undergraduate Mathematics Studies (PRIMUS).
2007 - present	Editorial Board for Problems, Resources, and Issues in Undergraduate Mathematics Studies (PRIMUS).
1992 - 1999	Associate Professor, Salisbury State University
1992 - 1995 1996 - 1999	Associate Chair, Department of Mathematics and Computer Science, Salisbury State University
1993 - 2001	Director, Department of Mathematics and Computer Science Tutoring Program, Salisbury State University
1989 -1992	Assistant Professor, Salisbury State University
1984 -1989	Assistant Professor, Stockton State College
1988 -1989	Mathematics Program Coordinator
Summer 1985	Visiting Scholar at Cambridge University, Department of Applied Mathematics and Theoretical Physics.
1982-1984	Teaching Assistant.

**Courses taught:** Advanced Calculus, Advanced Scientific Computing, Algebra and Elementary Functions, Analysis I&II, Applied Calculus, Calculus I&II, College Algebra, Differential Equations, Discrete Mathematics, Elementary Probability & Statistics, History of Mathematics, Honor's Core IV: Scientific Knowledge, Introduction to Abstract Mathematics, Liberal Arts Mathematics, Linear Algebra, Mathematics and Culture, The Mathematical Experience, Numerical Analysis, Operations Research, Precalculus, Scientific Computing, Trigonometry. **Graduate Courses:** Writing to Learn Mathematics, Topics in Mathematics.

\*Salisbury State University became Salisbury University in July 2001

### National Science Foundation Grants and Awards:

- *The PascGalois Project: Visualization in Abstract Mathematics*, effective Jan. 1, 2004 and extended through December 31, 2007 with Co-Principle Investigators Michael J. Bardzell and Eirini Poimenidou \$179,157 .
- *The PascGalois Project: Visualizing Abstract Algebra* Effective January 1, 2001 - December 31, 2003 with Co-Principle Investigator Michael Bardzell; \$74,990 . The final report was submitted to and approved by NSF in spring 2004. (award #DUE-0087644)
- 2005 Salisbury University Distinguished Faculty Award
- 2012-2013 President's Appreciation Award

### Publications & Presentations:

- January 2014: *It's Not the Moore Method But...: A Student Driven Textbook supported Approach to Teaching Real Analysis* Presented at the Joint Mathematics meetings in Baltimore, MD
- January 2012: *The Center for Applied Mathematics and Science* joint paper with Veera Holdai, Brian Hill and Steve Hetzler presented at the Joint Mathematics Meetings in Boston, MA.
- August 2010: *Successful Strategies for Getting Students Involved in Proof Writing at Multiple Levels* presented at MathFest, Pittsburgh, PA
- January 2006 - 2009 *The PascGalois Project: Visualization in Abstract Mathematics* Joint work with Michael Bardzell and Donald Spickler, presented in a CCLI Poster session at the Joint Mathematics Meetings in San Antonio, New Orleans, San Diego, and Washington, DC.
- January 2005 Joint Meetings of the American Mathematical Society and the Mathematical Association of America, Atlanta, GA.
  - *A Discrete Mathematics Course for lower-division majors in Mathematics, Computer Science and Education.* joint paper with Homer Austin
  - Poster: *The PascGalois Project: Visualizing Abstract Mathematics* with Michael J. Bardzell
- *The PascGalois Project: Visualization in Abstract Mathematics*, joint work presented by Mike Bardzell at the NSF CCLI conference Invention and Impact: Building Excellence in Undergraduate STEM Education, Crystal City, VA. April 16, 2004; presented with Mike Bardzell NSF CCLI SIGCSE Showcase 04, Norfolk, Va. March 5, 2004; presented at the Mid Atlantic Consortium for research in the Mathematical Sciences 2004 Conference May 26.
- January 2004 Joint Meetings of the American Mathematical Society and the Mathematical Association of America, Phoenix, AZ *The PascGalois Project: Visualizing Abstract Algebra*, presented with Michael Bardzell at the MAA Poster Session: Projects Supported by the NSF Division on Undergraduate Education
- *Searching for Patterns in Pascal's Triangle With a Twist* with Mike Bardzell the Journal of Online Mathematics. See:  
<http://www.mathdl.org/mathDL/4/?pa=content&sa=viewDocument&nodId=493>
- April 2003 Invited Address: The Sulski Lecture *Pascal's Triangle, Cellular Automata and Serendipity* co-sponsored by the College of the Holy Cross and the New England Section of the Mathematical Association of America.
- Salisbury University Internal Publication: *A Discrete Mathematics Primer for First Year College Students*. Under review for publication by McGraw Hill and Addison Wesley.
- March 2003 "Women in Mathematics" joint presentation with Jennifer Bergner as part of the Women's History Month celebration at Salisbury University.
- January 2003 Joint Meetings of the American Mathematical Society and the Mathematical Association of America, Baltimore Maryland.
  - *The PascGalois Project: Visualization Projects for Abstract Algebra* - Joint Paper with Michael J. Bardzell and Cynthia Woodburn.
  - Poster: *The PascGalois Project: Visualizing Abstract Algebra* with Michael J. Bardzell
  - "Using Groups to Generate Automata" with Michael J. Bardzell.

- "Visualization Projects for Abstract Algebra", with Michael J. Bardzell. From the PascGalois Project. Booklets and corresponding CD with PascalGT software funded by NSF award #DUE-0087644.
- May 2002 Invited Address at Towson University "*The Geometry of Group Generated Cellular Automata*" with Michael J. Bardzell.
- "The PascGalois Project: Visualizing Abstract Algebra", with Michael J. Bardzell, March issue MAA news letter FOCUS, 2002.
- "The PascGalois Project: Visualizing Abstract Algebra", presented with Michael J. Bardzell at the MAA Workshop for NSF PI's, NSF Headquarters, March 2002. ; presented with Michael J. Bardzell at the MAA Poster Session: Projects Supported by the NSF Division on Undergraduate Education, Joint AMS/MAA National Meetings, San Diego, CA., Jan. 8, 2001.
- January 2000 Joint Meetings of the American Mathematical Society and the Mathematical Association of America, New Orleans, LA:
  - *Groups, Fractal Patterns, and the Dynamics of Cellular Automata* -Joint paper with Michael Bardzell
  - *PascalGT: Conjectures, Explorations, and Reasoning in Abstract Algebra* Joint paper with Michael Bardzell
- In *MAA Notes #60: Innovations in Teaching Abstract Algebra* *The PascGalois Triangle: a Tool for Visualizing Abstract Algebra* - Joint paper with Michael Bardzell
- Spring 2000
  - 11th Annual Eastern Shore Computer Bowl, Salisbury State University, " Life, Death, and the Six States In-Between " - Joint paper with Michael Bardzell
- January 2000
  - Joint Meetings of the American Mathematical Society and the Mathematical Association of America " Fractal Dimensions For Group Generated Cellular Automata ", Joint paper with Michael Bardzell
- Fall 1999
  - Fall Meeting of the MD/DC/VA section of the Mathematical Association of America "Fractal Dimensions in the PascGalois Triangle" Joint paper with Michael Bardzell
  - Faculty Week Series in the Bell Atlantic Studio, Salisbury State University "Planned Projects Using 3-D Rendering Software " - Joint paper with Michael Bardzell
  - Henson School Seminar Series, Salisbury State University " The PascGalois Project: Computer Visualizations " - Joint paper with Michael Bardzell
- Summer 1999
  - *Teaching Statistics* Volume 21 Number 2 pps 42-45 *Who's the Winner: an Exercise in Measuring Deviations* joint Paper with William Weber, Eastern Arizona College
- January 1999
  - Joint Meetings of the American Mathematical Society and the Mathematical Association of America Introducing Liberal Arts Students to the Beauty of Abstract Mathematics via Computer Graphics, Groups, and Pascal's Triangle. -joint paper with Michael Bardzell
  - Joint Meetings of the American Mathematical Society and the Mathematical Association of America Using Pascal's Triangle to Visualize Abstract Algebra Concepts -joint paper with Michael Bardzell
- Fall 1998
  - Association for General and Liberal Studies "Meet me in St. Louis" conference on Overarching Principles in General Education: *Mathematics in General Education: Skills or Mode of Inquiry?* Joint Paper with Steven Hetzler
  - Mathematics Association of America, MD/DC/VA section Fall Meeting: *Using Computer Graphics to Investigate Group Structure* - joint paper with Michael Bardzell
- January 1998:
  - Joint Meetings of the American Mathematical Society and the Mathematical Association of America *A Tale of Three Numbers: an Application of Mathematics to the Psychology of Aesthetics* -joint paper with J. Craig Clarke
- Fall 1997
  - *Empirical Studies of the Arts* Volume 15, Number 2 -- 1997 *The Shape of Things: But Not the Golden Section* George K. Shortess, J. Craig Clarke, and Kathleen Shannon
  - PRIMUS Volume 7 pp. 222-234 – 1997 *Mathematics & Culture: A Unique Liberal Arts Experience* Carla N. Schultes and Kathleen M. Shannon.

- January 1997 Joint Meetings of the American Mathematical Society and the Mathematical Association of America
  - *The Richard A. Henson School of Science and Technology Undergraduate Research Symposium: Six Years of Success*
  - *Student Poster sessions at Section Meetings: One more Way to get Student Chapters Involved*
  - *Who's the Winner? An Exercise in Measuring Deviations.* joint paper with William Weber from Eastern Arizona College
- December 1996: *THE HENSON SCHOOL UNDERGRADUATE RESEARCH SYMPOSIUM* joint article with Paul Greccay published in Salisbury State University's *Academically Speaking* .
- Summer 1996:
  - Internal SSU publication, used as a text or supplemental text in Mathematics & Culture, History of Mathematics, Analysis and Calculus: *What is Calculus? Where Did it Come From and Why Should I Care?*
- April 1996:
  - Spring Meeting of the Mathematical Association of America, Maryland/DC/Virginia Section. "Pascal's Triangle, Cyclic Groups, Tilings and Computer Graphics".
- January 1996:
  - Joint Meetings of the American Mathematical Society and the Mathematical Association of America "Calculus for Liberal Arts: a Humanistic Approach"
- November 1995:
  - International Conference on Technology in Collegiate Mathematics "Chaos: an Introduction to Spreadsheets"
- April 1995
  - Maryland Council of Teachers of Mathematics, Salisbury State University "Writing to Learn Mathematics"
- January 1995:
  - Joint Meetings of the American Mathematical Society and the Mathematical Association of America "Mathematics in Culture; Culture in Mathematics: Broadening the Horizons of Future Mathematics Teachers" and "Activities and Topics to Excite Future Teachers." Joint papers with Carla Schultes.
  - Joint Meetings of the American Mathematical Society and the Mathematical Association of America "Reflections on the First Five Years of a Student Chapter or What to Do When Your Officers Graduate"
  - Calculus Workshop Salisbury State University "DERIVE Introduction"
- November 1994:
  - International Conference on Technology in Collegiate Mathematics "Using Spreadsheets and DERIVE to teach Differential Equations."
  - Salisbury State University High School Mathematics Contest Presentation "Mathematical Mind Reading: the Chinese Remainder Theorem"
  - Faculty Development Workshop at Hillsborough Community College. "Using Spreadsheets and DERIVE to Teach Mathematics"
- Fall 1994: Writing Across the Curriculum Fall Conference Salisbury State University "Using Writing to Help Solve Problems" (presented by Carla Schultes)
- January 1993: Joint Meetings of the American Mathematical Society and the Mathematical Association of America. "Empowering Students to Learn From and With Each Other."
- December 1993: Bennett Senior High School Mathematics Honor Society "What's Bigger than Infinity?"
- January 1992: Joint Meetings of the American Mathematical Society and the Mathematical Association of America. "Mathematics and Culture: A Liberal Arts Mathematics Course."
- Fall 1992: International Journal of Mathematical Education in Science and Technology 1992 Vol. 23, No. 4, pgs 543-547: "A Problem to Foster Critical Thinking in Mathematics."
- June 1991:
  - Montclair State College. Full Day Workshop on: "Using Writing to Encourage Students to Think Critically About Mathematics and Science"
  - Wicomico County Mathematics Teachers. "Using Writing to Teach Mathematics"
- April 1991:
  - Salisbury State University, Henson School of Science and Technology, Spring Workshop on Critical Thinking Workshop on: "Using Writing to Encourage Students to Think Critically About Mathematics and Science"
  - Spring Meeting of the Mathematical Association of America, Maryland/DC/Virginia Section. "Writing Assignments for Mathematics Instruction."

- January 1991: Joint Meetings of the American Mathematical Society and the Mathematical Association of America. Joint paper with Elizabeth Curtin Assistant Professor of English, Salisbury State University "Special Problems: An Alternative to Journals in Mathematics Courses." Primus: Volume II Number 3 September 1992.
- October 1990: Institute for Critical Thinking Conference, Critical Thinking: Focus on Science and Technology: "Using Writing to Encourage Students to Think Critically About Mathematics and Science" Proceedings Published.
- January 1990: Joint Meetings of the Mathematical Association of America and the American Mathematical Society: "An Argument for Increasing the Scope of the Mathematics Core." PRIMUS Volume I Number 1 March 1991.
- March 1990: Salisbury State University High School Math Contest: "What's Bigger than Infinity"
- 1989: Stockton State College Physics Department Seminar: "Approximation of Functions and Data"

***Selected Professional and Community Activities:***

1997 - present: Mathematical Contest in Modeling Judge (International Contest)(except 2002)  
2008 - Present: Moody's Mega Mathematics Challenge Head Judge fo SU Triage and Finals Judge.  
2003 - present; 2013-14 Faculty Senate Vice President; 2014-15 Faculty Senate President 1996 -2002 :  
Faculty Senate -- 1997-2000 Faculty Senate Webmaster. 1998-99 Faculty Senate, Secretary.  
2010-Present Faculty Welfare Committee  
2010 - Present ;1990-1999 Faculty Advisor to the Math CS Club a.k. MAA Student Chapter a,k.a. Math Club  
2002-2003: Mathematics Association of America MD/VA/DC Section Student Activities Coordinator  
Spring 2002: External reviewer for Frostburg State University's degree programs in Mathematics and Actuarial Science.  
2008 Chair, Search Committee for the Dean of the Henson School of Science and Technology, SU  
1997, 2001 and 2009 Provost Search Committees. SSU, SU  
1997 - 2000: SSU General Education Task Force  
1997 - 1998: SSU NCUR Organizing Committee  
1997: Biology Department Promotions Committee for Dr. Paul Greycay  
1996- 1997: Salisbury State University High School Mathematics Contest Committee, co-chair.  
1996: Department Promotions Committee  
1995: University Promotions Committee  
1993 - 1995: Department Calculus Committee and Department Core Curriculum Committee.  
1993 - 1995: Chair, Ad Hoc Committee on Teaching, Salisbury State University.  
1992 - 2001: Mathematical Association of America Ad Hoc Committee on Student Hospitality Centers.  
1992 - 1995: Mathematical Contest in Modeling Triage Judge.  
1991 - 1998 Henson School of Science and Technology Undergraduate Research Symposium Organizing Committee. Chair, 1992-1995; Co-chair 1995 - 1998.  
1991 - 1999: University Committee on Academic Policies (except (1993-94)) Chair 96-1999  
1990 - 1995: Secretary, Wicomico Environmental Trust  
1990 - 1999: Departmental Committee on Mathematical Environment, Chair, 1990-1991 Salisbury S. Univ.  
1993-1994; 1996-1998: Second Vice Chair, Executive Committee of the University Forum, S.S.U.  
1990 - 1991: Departmental Committee on Core Curriculum and Education, S.S.U.  
1989 - 1990: Search Committee for the Dean of the Henson School of Science, S.S.U.  
1989 - 1990: Departmental Curriculum Committee, S.S.U.  
1988 - 1989: College Outcomes Evaluation Program committee on General Education, Stockton S. College  
1988 - 1989: Chair, College Outcomes Evaluation Program committee on Research, Scholarship and Creative Expression, Stockton State College  
Spring 1988: Search Committee for Dean of the Division of Natural Sciences and Mathematics (Internal Search), Stockton State College  
1986 - 1989: General Studies Committee, Convener for General Studies in Natural Sciences and Mathematics, Stockton State College  
1985 - 1989: Academic Policies Committee, Stockton State College, chair for 1988-1989  
1985 : Cardiopulmonary Resuscitation (CPR) Instructor  
Spring 1985: Faculty Review Committee, Stockton State College