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Education

- Ph.D., Mathematics, Rutgers University, October 1995.
    - Thesis Title: *Multiplicity Free Representations.*
    - Thesis Advisor: Professor Friedrich Knop.
    - Studies include advanced courses in geometry, algebra, and analysis.
- B.A., *summa cum laude*, St. Olaf College, 1989.
    - Majors in Mathematics, Philosophy, and Latin.
    - Studies include the year 1987-1988 at the University of East Anglia in Norwich, England.

Work Experience

- Professor of Mathematics, Knox College (2019-).
- Associate Professor of Mathematics, Knox College (2002-2019).
- Assistant Professor of Mathematics, Knox College (1996-2002).
- Visiting Assistant Professor of Mathematics, Knox College (1995-1996). I held a visiting appointment for one year.
- Graduate Research Assistant, Rutgers University (1993-1994)
- Instructor of Mathematics/Teaching Assistant, Rutgers University (1989-1995).

Research Interests

- Theory and application of neural networks: mathematical development, applications to speech and natural language processing
- The history of mathematics: the historical development of calculus, applications to teaching, Latin translation.

- Technology in mathematics education: high performance computing in teaching college-level mathematics, enhancing student interaction with technology
- Representation theory: finite-dimensional representations of semisimple lie algebras, applications of multiplicity free representations.

Publications

- “The Method of Archimedes in the Seventeenth Century”. *The American Mathematical Monthly* 125:3, 267-272, doi.org/10.1080/00029890.2018.1413857
- “A Fourth Century Theorem for Twenty-First Century Calculus”. *The College Mathematics Journal* **49:**2, 103-108 (2018), doi.org/10.1080/07468342.2018.1421817
- “A Translation of Evangelista Torricelli's *Quadratura parabolae per novam indivisibilium Geometriam pluribus modis absoluta*”. *Convergence* (2017). DOI:10.4169/convergence20170201
- “William Neile's Contribution to Calculus”. *The College Mathematics Journal* **47** (2016). doi: 10.4169/college.math.j.47.1.42
- “Evangelista Torricelli and the 'Common Bond of Truth' in Greek Mathematics.” Math. Mag. 87 (2014) 174–184. doi:10.4169/math.mag.87.3.174.
- "James Gregory and the Pappus-Guldin Theorem". *Convergence Loci, the online publication of the Mathematical Sciences Digital Library* http://mathdl.maa.org/mathDL/46/.
- "A Euclidean Approach to the FTC". *Convergence* **1** (2004). http://www.mathdl.org/convergence/1/.
- "An Introduction to James Gregory's *Geometriae Pars Universalis*". *Proceedings of the Eighth Midwest History of Mathematics Conference (2000)*.
- "History of Mathematics on the Web" *Focus* **22:2** (2002) 12.
- "A Classification of Multiplicity Free Representations". *Journal of Lie Theory* **8** (1998) 367-391.

Grants, Awards, and Honors

- Knox Immersive Learning Experience Grant “Mapping the Rural-Urban Divide”, 2023.
- Knox Way-Geer Research Award “A GPU for Neural Network Training”, 2022.
- ACM FaCE Grant “Engaging the Community of Mathematicians”, 2017.
- Distinguished Service Award. Illinois Section of the Mathematical Association of America. 2009.
- Philip Green Wright/Lombard College Award for for Distinguished Teaching. Knox College, 2003.
- NSF/CCLI grant (#0089045), "Distributed Computation, Numerical Methods, and Scientific Computing for Mathematics and Science Students in an Undergraduate Mathematics Department", 2000-2004. (Co-principal investigator.)
- NSF/ILI grant (#9751141), "Enhancing the Educational Impact of Technology", 1997. (Co-principal investigator.)
- National Needs Fellowship, 1990-1991.

- Elected *Phi Beta Kappa*, May, 1989.

Presented Papers

- “A Climate Data Set in Applied Calculus” at the contributed paper session on Plug and Play Data Science Lessions at *Mathfest: The Annual Summer Meeting of the Mathematical Association of America*, Cincinnati, Ohio, August 1, 2019.

- “Geometrical Approaches to Calculus Problems” at the contributed papers session on teaching undergraduate mathematics with primary historical sources at *Mathfest: The Annual Summer Meeting of the Mathematical Association of America*, Denver, Colorado, August 1-4, 2018.

- “Bring Back the Pappus-Guldin Theorems” at the contributed papers session on Euclid and the Mathematics of Antinquity in the 21st Century at *Mathfest: The Annual Summer Meeting of the Mathematical Association of America*, Chicago, Illinois, July 26-29, 2017.

- “The Central Role of Centers of Gravity in Early Modern Mathematics” at the general contributed paper session on history of mathematics at *Mathfest: The Annual Summer Meeting of the Mathematical Association of America*, Columbus, Ohio, August 3-6, 2016.

- “William Brouncker's Rectification of the Semi-Cubical Parabola” at the contributed paper session on History and Philosophy of Mathematics at *Mathfest: The Annual Summer Meeting of the Mathematical Association of America*, Washington, D.C., August 5-8, 2015.

- “Some Early Results on Centers of Gravity” at the *Midwest History of Mathematics Conference*, Wabash College, Crawfordsville, Indiana, October 17-19, 2014.

- “Evangelista Torricelli's Quadratura Parabolae” with Kasandara Sullivan at the general contributed paper session at *Mathfest: The Annual Summer Meeting of the Mathematical Association of America*, Madison, Wisconsin, August 2-5, 2012.

- “Using SMS Texts to Communicate with Students in Mathematics Courses” at the annual meeting of the Illinois Section of the Mathematical Association of America, Normal, Illinois, March 29-31, 2012.

- “An Early Approach to Finding Surfaces of Revolution” at the contributed paper session on History of Mathematics and its Uses in the Classroom at *Mathfest: The Annual Summer Meeting of the Mathematical Association of America*, Lexington, Kentucky, August 4-7, 2011.

- "Youtube in the Classroom" at the Contributed Paper Session on Technology in Mathematics at *Mathfest: The Annual Summer Meeting of the Mathematical Association of America*, Madison, Wisconsin, July 31 - August 2, 2008.

- "James Gregory and the Pappus-Guldin Theorem" at the general contributed paper session at *Mathfest: The Annual Summer Meeting of the Mathematical Association of America*, San Jose, California, August 2-5, 2007.

- "James Gregory's Proof of the FTC" at the annual meeting of the Illinois Section of the Mathematical Association of America, Galesburg, Illinois, April 8-9, 2005.

- "Distributed Computing in the Numerical Analysis Curriculum" at the annual meeting of the Illinois Section of the Mathematical Association of America, Schaumburg, Illinois, April 2-3, 2004.

- "Turning your Computing Lab into a Supercomputer" with Dennis Schneider, at the contributed paper session on "The Creative Use of Technology in Teaching Mathematics," *Mathfest: The Annual Summer Meeting of the Mathematical Association of America*, the University of Colorado-Boulder, July 31, 2003.

- "A Student-Centered History Course Taught Through Original Sources" at the Contributed Paper Session on The Use of History in the Teaching of Mathematics at *Mathfest: The Annual Summer Meeting of the Mathematical Association of America*, Madison, Wisconsin, August 2-4, 2001.

- "An Introduction to the Geometriae Pars Universalis" at the Midwest History of Mathematics Conference, Northern Kentucky University, October 13-14, 2000.

- "A senior project on the geometric construction of tangents" at the Pew Consortium Workshop on Using History in the Teaching of Mathematics, Colorado College, Colorado Springs, Colorado, September 18-20, 1998.

- "Prelude to the Hilbert Basis Theorem (or how abstract algebra became abstract)" at the annual meeting of the Illinois state section of the Mathematical Association of America, Lebanon, Illinois, March 27-28, 1998.

- "Barrow's Geometrical Methods for Finding Tangents" at the AMS-MAA Special Session on The Uses of History in the Teaching of Mathematics at the Joint Meeting of the American Mathematical Society and Mathematical Association of America, Baltimore, Maryland, January 7-10, 1998. (Presented jointly with Knox College student Nahyan Fancy.)

- "What I didn't teach in the history seminar" at the *Institute on the History of Mathematics and Its Use in Teaching*, Washington, D.C., June 2-20, 1997.

- "The History of Mathematics and its Use in Teaching: A Report on the IHMT" at the annual meeting of the Illinois state section of the Mathematical Association of America, Rockford, Illinois, March 21-22, 1997. (Presented jointly with Herb Kasube of Bradley University and Diann Porter of the University of Illinois at Chicago.)

- "Cayley's Invariant Theory: The Impact of Group Theory?" at the *Institute on the History of Mathematics and Its Use in Teaching*, Washington, D.C., June 3-21, 1996.

- "Orbit Structures on Multiplicity Free Representations" at the Special Session on Representation Theory and Harmonic Analysis of Topological Groups at the *Joint Meeting of the American Mathematical Society and the Mathematical Association of America*, Orlando, Florida, January 10-13, 1996.

- "The Classification of Multiplicity Free Representations" in the Lie Groups Seminar, Rutgers University, Mathematics Department, October 20, 1994.

Book Reviews

- "*Statisticians of the Centuries* edited by C.C. Heyde and E. Seneta." *MAA Online*. http://www.maa.org/reviews/statcent.html (January 2002).

- "*Einstein in Love: A Scientific Romance* by Dennis Overbye." *MAA Online*. http://www.maa.org/reviews/einstlove.html (March, 2001).

- "*Pioneers of Representation Theory: Frobenius, Burnside, Schur, and Brauer* by Charles W. Curtis." *MAA Online*. http://www.maa.org/reviews/pioneers.html (September, 2000).

- "*Zero: The Biography of a Dangerous Idea* by Charles Seife." *MAA Online*. http://www.maa.org/reviews/zero2.html (March, 2000).

- "*The Nothing That Is: A Natural History of Zero* by Robert Kaplan." *MAA Online*. http://www.maa.org/reviews/nothing.html (October, 1999).

- "*Indiscrete Thoughts* by Gian-Carlo Rota edited by Fabrizio Palombi." *MAA Online*: http://www.maa.org/reviews/indiscthots.html (June, 1998).

- "*The Contest Problem Book V*, by George Berzsenyi and Stephen B. Maurer and *Critical Thinking Puzzles*, by Michael A. DiSpezio." *MAA Online*: http://www.maa.org/reviews/problembooks.html

Courses taught at Knox College:

(ordered by level)

- *Fundamentals of Mathematics/Mathematical Ideas (Math 121)*. A mathematics course for students in the liberal arts, different implementations based on *The Heart of Mathematics* by Burger and Starbird, *Mathematics: A Practical Odyssey* by Mowry and Johnson, or *For All Practical Purposes* by COMAP.

- *Mathematics for Quantitative Disciplines (Math 123)*. A gateway course for students with weak academic preparation.

- *Mathematics for Elementary School Educators* (Math 125). A mathematics course for pre-service elementary teachers.

- *Functions (Math 131)*. A pre-calculus course. I made use of *Mathematica* for lectures and assignments. One section of the course was taught using a collaborative-learning approach based on *Precalculus: Concepts in Context*.

- *Functions and Calculus I and II (Math 140-141)*. An integrated calculus-precalculus sequence: the first term reviews equation-solving techniques and polynomial and rational functions followed by an introduction to differential calculus and its applications; the second term reviews trigonometric, logarithmic, and exponential functions and their derivatives as well as basic integration theory.

- *Introduction to Computer Science (CS 141).* An introductory course (CS1) in computer science, taught in the Java programming language.

- *ACM Calculus*. An online course course at the level of applied calculus taught to students from colleges across the ACM (Summary 2017).

- *Applied Calculus I and II (Math 145-146).* An applied calculus course covering 1- and 2-variable functions and their derivatives, optimization of functions of one and several variables, elementary integration and differential equations.

- *Calculus I and II (Math 151-152)*. An introductory calculus sequence which depended heavily on the use of *Mathematica*. I used *Mathematica* for class lectures and wrote *Mathematica* notebooks for computer-based exercises.

- *Discrete Mathematics (Math 175)*. An introductory discrete mathematics course based on the ACM discrete structures syllabus.

- *Introduction to Linear Algebra (Math 185)*. An introductory course in linear algebra.

- *Statistics (Math 160/Stat 200)*. An introductory statistics course (non-calculus based).
- *Calculus III (Math 205)*. A multivariable calculus course with a strong *Mathematica* component.
- *Introduction to Numerical Mathematics (Math 214)*. An elementary numerical methods course targetted at sophomore-level mathematics students. (Calculus II pre-requisite.)
- *Foundations of Geometry (Math 216).* A course for advanced mathematics students on Euclidean and non-Euclidean geometry.
- *History of Mathematics (Math 218)*. A history of mathematics course for students with an understanding of mathematics up to the level of calculus.
- *Applied Analytics (Stat 223).* A study of regression and classification models using traditional and modern techniques in python
- *Introductory Financial Mathematics (Math 227)*. An introductory course in financial mathematics covering interest and bonds, stocks and options.
- *Differential Equations (Math 230)*. An introductory course in differential equations.
- *Game Theory (Math 295B)*. An introduction to the mathematical theory of non-cooperative games.
- *Mathematical Structures (Math 300)*. A course aimed at familiarizing students with the foundations of set theory, while honing their skills in mathematical proof.
- *Numerical Analysis (Math 311)*. An introductory course in numerical analysis. I developed material for explaining the use of parallel algorithms for solving numerical problems.
- *Mathematical Statistics I and II (Math 321-322)*. A two-term advanced probability and statistics sequence for mathematics majors.
- *Machine Learning (CS/Stat 323)*. An advanced course in machine learning, covering techniques in unsupervised and supervised learning, including an introduction to neural networks
- *Analysis I and II (Math 331-332)*. A two-term advanced sequence covering algebraic and topological properties of the real number line, function spaces and abstract topological spaces, and differentiation and integration of functions of a real variable.
- *Complex Analysis (Math 333)*. An introductory complex analysis course.
- *Abstract Algebra I and II (Math 341-342)*. A two-term introductory sequence in abstract algebra. Topics included modules and Lie groups and algebras.
- *Senior Seminar (Math 399)*. A capstone course for mathematics majors. Two iterations: The first course was on Euclid's *Elements*. The second course was on partial differential equations. Students were required to give class lectures, write a research paper with a significant mathematical content in the history of mathematics, and give a presentation to the department on the results of their research.
- *First-Year Preceptorial (Prec 100 ,Prec 115)*. A first-term liberal arts seminar for all incoming students centered around questions concerning human identity. I led daily discussions, developed writing assignments for students, and worked with students to improve their writing and communicating skills.

- *Advanced Preceptorial: Science, Science Fiction, and the Future (Prec 334)*. An interdisciplinary seminar for students in their senior year with an emphasis on science fiction and issues in science.

Independent Study/Student Research Topics at Knox College:

In recent years, I have supervised student independent studies and senior research projects on the following topics:

- Digital Signal Processing and Neural Networks
- Financial Time Series and Stock Price Forecasting
- Lie Algebras and Quantum Mechanics
- M.C. Escher and Wallpaper Groups
- The Finite Element Method
- Principle Component Analysis
- Recurrent Neural Networks
- Recommender Systems
- Machine Learning and EEG Systems
- Machine Learning and Fraud Detection
- LLM and RAG systems
- Mathematical Theory of Back Propagation in Feedforward Networks
- Classification in Machine Learning: Support Vector Machines
- Statistical Methods for Survival Data Analysis

Computer Experience

- **Programming Experience.** I have experience with Python, R, Bash/shell, PHP, Perl, and C. Some projects include:
  - *Python programming*, including experienece with pandas/numpy, matplotlib/seaborn, statsmodels, scikit-lear, tensorflow/keras, and pytorch libraries, primarily using Jupyter notebooks
  - *R programming for introductory statistics*, including ggplot2/tidyverse, sf, tidycensus, primariliy using Rstudio and Jupyter notebooks
  - *Developing LAMP web applications,* including
    - a Perl, LDAP, Bash, and MySQL application for collecting and returning student electronic work

        - PHP, SAML, Bash, and SQLite application for interacting with student work
        - a Web to SMS Interface using the Twilio PHP Telephony API
    - *C programming using MPI*. In conjunction with student research projects, I have written miscellaneous programs using MPI to implement numerical algorithms in distributed computing clusters.
    - Bash scripting for file manipulation, maintaining backups, and other tasks
- **System administration.** I have administered a network of Linux computers for the mathematics and computer science departments at Knox College, including departmental file and web servers and several students and faculty desktop systems. Duties include:
    - *Installing and Administering third-party web-based apps,* including
        - RStudio server (statistical software)
        - Jupyterhub server (notebook/computational server with many kernel options)
        - WebWork server (online mathematics homework application)
        - Docker server (for student computational work)
        - Moodle LMS server
        - Squirrelmail IMAP server
    - *Administering departmental Linux servers*, including several multi-user Fedora and Ubuntu systems with RAID filesystems offering
        - NFS and SMB file servers with development libraries and ssh and vnc access
        - LDAP identification (RCS2307bis) and Kerberos authentication
        - SSH shell accesss for Linux software and programming libraries
        - GPU computational server for neural networks and other computational tasks
        - Mariadb database server
        - Hosting virtual servers using KVM/QEMU
        - Apache web server with multihoming and virtual web apps hosted via reverse proxy
        - (Historical) Administration of a departmental Beowulf cluster and departmental teaching lab
        - Managing an internal network using DHCP and routing network traffic with IPTABLES

Institutes, Seminars, and Other Significant Off-Campus Work

- *The Scientific Revolutions of the XVI and XVII century* intensive course on "Indivisibles: from the Archimedian Tradition to the Birth of Differential Calculus" at the Centro di Ricerca Matematica

Ennio De Giorgi, Scuola Normale Superiore, Pisa, Italy, October 17-22, 2005.

- *Oak Ridge National Laboratory*, visiting scientist and Resident Faculty Director of the Oak Ridge Science Semester. Fall 2002 (five months).
- *Park City Mathematics Institute*, Undergraduate Faculty Program participant. Summer 1998 (three weeks).
- *Institute on the History of Mathematics and Its Use in Teaching*. Summer 1996-1997 (three weeks each summer).
- AMS-SIAM Summer Seminar in Applied Mathematics, *The mathematics of tomography, impedance imaging, and integral geometry*. Summer 1993 (two weeks).

Conferences Attended

- *Mathfest: The Annual Summer Meeting of the Mathematical Association of America,* Denver, Colorado, August 1-4, 2018.
- *Mathfest: The Annual Summer Meeting of the Mathematical Association of America,* Chicago, Illinois, July 26-29, 2017.
- *ACM Mathematicians Meeting: Engaging the Community of Mathematicians,* Chicago, Illinois, July 24-25, 2017.
- *Mathfest: The Annual Summer Meeting of the Mathematical Association of America,* Columbus, Ohio, August 3-6, 2016.
- *Mathfest: The Annual Summer Meeting of the Mathematical Association of America,* Washington, D.C., August 5-6, 2015.
- *Midwest History of Mathematics Conference,* Wabash College, Crawfordsville, Indiana, October 17-19, 2014.
- *ACM Institute on College Futures: Opening Seminar,* Chicago, Illinois June 19-21, 2013.
- *Mathfest: The Annual Summer Meeting of the Mathematical Association of America,* Madison, Wisconsin, August 2-5, 2012.
- *Annual Meeting of the Illinois Section of the Mathematical Association of America,* North Central College, Normal, Illinois, March 29-31, 2012.
- *Mathfest: The Annual Summer Meeting of the Mathematical Association of America,* Lexington, Kentucky, August 4-7, 2011.
- *Annual Meeting of the Illinois Section of the Mathematical Association of America*, North Central College, Naperville, Illinois, April 8-9, 2011.
- *Annual Meeting of the Illinois Section of the Mathematical Association of America*, Augustana College, Rock Island, Illinois, April 9-10, 2010.
- *The Teagle Conference on The Many Levels of Assessment: Making Connections.* Ripon College, Ripon, Wisconsin, September 11-12, 2009. Participant in the panel on Quantitative Reasoning.

- *Annual Meeting of the Illinois Section of the Mathematical Association of America*, Bradley University, Peoria, Illinois, April 3-4, 2009.
- *PKAL/QuiRK Quantitative Reasoning Workshop*, Carleton College, Northfield, Minnesota, October 10-12, 2008.
- *Mathfest: The Annual Summer Meeting of the Mathematical Association of America*, Madison, Wisconsin, July 31-August 2, 2008.
- *Annual Meeting of the Illinois Section of the Mathematical Association of America*, Eastern Illinois University, Charleston, Illinois, April 4-5, 2008.
- *Mathfest: The Annual Summer Meeting of the Mathematical Association of America*, San Jose, California, August 2-5, 2007.
- *Annual Meeting of the Illinois Section of the Mathematical Association of America*, Western Illinois University, Macomb, Illinois, March 30-31, 2007.
- *Annual Meeting of the Illinois Section of the Mathematical Association of America*, North Central College, Naperville, Illinois, April 7-8, 2006.
- *Annual Meeting of the Illinois Section of the Mathematical Association of America*, Knox College, Galesburg, Illinois, April 8-9, 2005.
- *Annual Meeting of the Illinois Section of the Mathematical Association of America*, Roosevelt University, Schaumburg, Illinois, April 2-3, 2004.
- *Mathfest: The Annual Summer Meeting of the Mathematical Association of America*, Boulder, Colorado, July 29-31, 2003.
- *Annual Meeting of the Illinois Section of the Mathematical Association of America*, Illinois College, Jacksonville, Illinois, March 28-29, 2003.
- *Annual Meeting of the Illinois Section of the Mathematical Association of America*, McKendree College, Lebanon, Illinois, April 5-6, 2002.
- *Mathfest: The Annual Summer Meeting of the Mathematical Association of America*, Madison, Wisconsin, August 2-4, 2001.
- *Linux Clusters: The High Performance Computing Revolution* (sponsored by NCSA: The National Center for Supercomputing and its Applications), Urbana, Illinois, June 26-27, 2001.
- *Annual Meeting of the Illinois Section of the Mathematical Association of America*, University of Illinois, Urbana, Illinois, March 23, 2001.
- *ACM Conference: Information Literacy and Liberal Education*, Lake Forest College, Lake Forest, Illinois, March 9-10, 2001.
- *VIP Seminar: webMathematica* (sponsored by Wolfram Research), Chicago, Illinois, March 9, 2001.
- *Midwest History of Mathematics Conference*, Northern Kentucky University, October 13-14, 2000.
- *Annual Meeting of the Illinois Section of the Mathematical Association of America*, North Central College, Naperville, Illinois, March 31, 2000.

- *Strengthening Faculty Development at Liberal Arts Colleges*, Rollins College, Winter Park, Florida, March 2-3, 2000.
- *GLCA/ACM Mathematicians Meeting*, Lake Forest College, Lake Forest, Illinois, April 10, 1999.
- *Annual Meeting of the Illinois Section of the Mathematical Association of America*, Augustana College, Rock Island, Illinois, April 9, 1999.
- *Pew Consortium Workshop on Using History in the Teaching of Mathematics*, Colorado College, Colorado Springs, Colorado, September 18-20, 1998.
- *Annual Meeting of the Illinois Section of the Mathematical Association of America*, McKendree College, Lebanon, Illinois, March 27-28, 1998.
- *Joint Meeting of the American Mathematical Society and the Mathematical Association of America*, Baltimore, Maryland, January 7-10, 1998.
- *Annual Meeting of the Illinois Section of the Mathematical Association of America*, Rockford College, Rockford, Illinois, March 21-22, 1997.
- *Pew Workshop on General Education Mathematics and Science Courses*, Hope College, Holland, Michigan, March 7-9, 1997.
- *Connections in Science: A Workshop on Undergraduate Science and Mathematics Education*, University of Chicago, Chicago, Illinois, April 12-14, 1996.
- *Joint Meeting of the American Mathematical Society and the Mathematical Association of America*, Orlando, Florida, January 10-13, 1996.
- *Third International History, Philosophy, and Science Teaching Conference*, University of Minnesota, Minneapolis, Minnesota, October 29-31, 1995.
- *Joint Meeting of the American Mathematical Society and the Mathematical Association of America*, San Francisco, California, January 11-14, 1995.

Other Professional Activity

- Illinois Section of the Mathematical Association of America (ISMAA). Extensive involvement:
    - Chair. 2005-2008. (Responsible for coordinating the activities of the governing board of this 1000+ member statewide organization.)
    - Programming Committee Chairman, 2004 and 2005. (Responsible for coordinating all aspects of the annual meeting of the statewide organization.)
    - Director for Private Universities. 2001-2004.
    - Two-Year College Committee member. 1998-2001.
    - Illinois Section Project NExT Fellow, 1998-1999.
    - Developed software for online registration and submission of abstracts for annual meetings.
- AP Calculus Reader, 2005-2010.

- AP Calculus Table Leader, 2011-2016.
- Pre-publication review of Chapters 5-6 of *Precalculus: A Graphing Approach* by Barnett, Ziegler, and Byleen (McGraw-Hill). November 1999.
- NSF/CCLI Grant Review Panelist. June 26-29, 1999.
- Grader for the *American Regions Mathematics League (ARML)* high school mathematics competition, May 30, 1998.

Departmental Service

- Department of Mathematics Chair, 2008-2013 (includes supervision of external review 2012-2013).
- Various mathematics department faculty search committees.
- Administrator for various mathematics and computer science department computer systems.
- Putnam Exam coordinator (various years)
- Stephens Prize Exam coordinator, (various years)
- Carr Prize Exam coordinator (various years)

College Service

- Curriculum Committee—Assessment Subcommittee, 2019+, includes being Chair of the Curriculum Committee 2020-2021
- Faculty Representative to Board of Trustees committee, elected term 2016-2018.
- Faculty Budget and Planning Committee, elected term 2015-2018.
- Dean of the College Search Committee, 2012-2013.
- Chair pro tem of the Knox Faculty, elected terms 2006-2008, 2012-2015.
- Executive Committee/FASCOM, elected term 2008-2011.
- Faculty Observer to the Board of Trustees, elected term 2006-2008.
- Faculty Budget and Development Committee, 2002-2005, 2011-2015 (Chair 2012-15).
- Computer Science Tenure Review Committee (chair), Spring 2004.
- Instructional Support Committee, 2001- (Chair, 2001-2002.)
- Computer Science Search Committee, Spring 2001.
- Life after Knox Working Group (facilitator), Spring 2001.
- Computer Science Search Committee, Spring 2000.
- ACE/Kellogg Working Group on Faculty Development, Fall 1999.
- Instructional Technology Committee, 1999-2001 (Convenor, 2000-2001).

- Bookstore Task Force, Spring 1999-Fall 2000.
- Lectures and Concerts Committee, 1998-1999.
- Computer Science Search Committee, Spring 1998.

Other Campus Involvement

- COMPASS Exam coordinator, 2011-2016.
- Admissions work: numerous individual student contacts and classroom visitations; attended several luncheons; participated in day-long St. Louis Informational Programs (September 1996 and 1998).
- Honors committees: I have served on college honors committees for the following students:
    - Haining Wei, 2012-2013
    - Stefen Showers, 2006-2007.
    - Hari Ramanan, 1999-2000.
    - Ryan Stuffelbeam, 1997-1998.
    - Anton Kamenov, 1997-1998.
    - Nate Bode, 1996-1997 (Chair).
    - Leonard Blackburn, 1996-1997.
- McNair Research Program: I directed a McNair summer research program undertaken by Michelle Hackman entitled "The Mathematics of Louis Lagrange: Calculus of Variations".
- ISMAA student mathematics contest supervisor: I brought groups of 2-5 students to the annual ISMAA meetings to participate in the student mathematics contests (1997-1999 annually).
- Math Club talks: “Archimedes' Other Way of Finding the Area inside a Parabola”, October 2015, “Geometrical Approaches to Solving Calculus Problems”, February 2013; "The Brachistochrone Problem", October 1998.
- Math Colloquium lectures: “This talk is brought to you by the letters R, C, and H, and by the number 3”, 2013, "Introduction to webMathematica", 2002; "The Mathematics of Data Compression", 2000 (3 lectures total);"Fourier Transforms for Finite Groups", 1997 (4 lectures total); "The Mathematics of Computer-Aided Tomography", 1998.
- Phi Beta Kappa, Chapter President, 2001-2003.

Community Service

- Galesburg Telecommunications Commission. Appointed by the city council. November, 2000-3. (Elected Chair, 2001-3.)