

JUDY A. HOLDENER

Department of Mathematics, Kenyon College
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RESEARCH INTERESTS

Number Theory, Algebra, Dynamical Systems, Mathematical Biology

EDUCATION

UNIVERSITY OF ILLINOIS, Urbana, Illinois
Ph.D. in Mathematics (Algebraic K-theory), May, 1994
M.S. in Mathematics, May, 1989

KENT STATE UNIVERSITY, Kent, Ohio
B.S. in Mathematics, 1987, Summa cum Laude, Phi Beta Kappa

EMPLOYMENT

2010 - present: Full Professor, Kenyon College
2012 – 2013: Shelly Visiting Full Professor, Carnegie Mellon University
Summer, 2012: Instructor, Harvard Kennedy School of Government
2008 - 2011: Chair of Mathematics, Kenyon College
2007 - 2011: John B. McCoy Distinguished Teaching Chair, Kenyon College
2003 - 2010: Associate Professor, Kenyon College
2004 - 2005: Visiting Associate Professor, University of Colorado, Boulder
1997 - 2003: Assistant Professor, Kenyon College
1994 - 1997: Assistant Professor, United States Air Force Academy
1987 - 1994: Teaching/Research Assistant, University of Illinois
1989 - 1990: Consultant, Wolfram Research, Inc., Urbana, Illinois

AWARDS AND HONORS

Inducted into the Ravenna Hall of Fame, Ravenna, OH (2013)
Eugene P. Shelly Visiting Endowed Chair, Carnegie Mellon University (2012-2013)
Distinction in Faculty Mentoring Award, Kenyon College (2011)
Mathematical Association of America Ohio Section Teaching Award (2008)
John B. McCoy Distinguished Teaching Chair, Kenyon College (2007-2011)
Tomsich Science Award, Kenyon College (2003)
Board of Trustees Junior Teaching Award, Kenyon College (2003)
Project NExT Fellow (1995-1996)
Tony M. Johnson Excellence in Teaching Award, Air Force Academy (1995)
Instructor of the Year in Mathematics, U.S. Air Force Academy (1995)
Outstanding Teacher Award, University of Illinois (1994)
Phi Kappa Phi, University of Illinois (1990)
Phi Beta Kappa, Kent State University (1986)
Pi Mu Epsilon, Kent State University (1986)

COURSES TAUGHT

Calculus I (Differential Calculus)
Calculus II (Integral Calculus)
Calculus III (Multivariable Calculus)
Vector Analysis
Models of Life (A math course for the general liberal arts student)
Foundations (An Introduction to Proof course)
Number Theory
Complex Functions

Linear Algebra
 Abstract Algebra I (Group Theory)
 Abstract Algebra II (Ring and Field Theory)
 Quantitative Methods (Covered topics from Calculus, Probability and Statistics for the Master of Public Policy Program at the Harvard Kennedy School of Government)
 Elliptic Curves (Carnegie Mellon University)
 Algebraic Geometry (Carnegie Mellon University)
 Independent Studies in: Topology, Algebraic Topology, Galois Theory, and Analytic Number Theory

RECENT PUBLICATIONS

(* designates an undergraduate co-author)

Holdener J. A. and M. Snipes. "Sources of Flow as Sources of Symmetry: Divergence Patterns of Sinusoidal Vector Fields" to appear in the *Bridges 2014 Proceedings*

Uhl J.J., and J. Holdener. "BioCalc at Illinois," *Undergraduate Mathematics for the Life Sciences: Models, Processes and Directions*, edited by G. Ledder, J. Carpenter, and T. Comar. MAA Notes (2013)

Rafferty K.* and J. Holdener. "On the Form of Multiperfect Numbers," *Pi Mu Epsilon Journal* (Spring, 2012)

J.A. Holdener. Computational science education module: "Exploring the Primes," developed under the support of NSF-CCLI grant #9952806, Computational Science across the Curriculum (peer-reviewed and published on-line 2012)

J.A. Holdener. "Two Sums of Sines and Cosines," *Mathematics Magazine*, 82(2) (Apr., 2009) pp. 126

J.A. Holdener. Computational science education module: "Modeling Seashell Form," developed under the support of NSF- CCLI grant #9952806, Computational Science across the Curriculum (peer-reviewed and published on-line 2009)

Kennard L.* and M. Zaremsky*, J. Holdener. "Generalized Thue-Morse sequences and the von Koch Curve," *International Journal of Pure and Applied Mathematics*, **37** (3) (2008)

Stanton W.* and J. Holdener. "Abundancy `outlaws` of the form $(\sigma(N)+t)/N$," *The Journal of Integer Sequences*, **10** (2007), Article 07.9.6

Holdener J.A. and E.J. Holdener. "A Cryptographic Scavenger Hunt" *Cryptologia*, **31** (2007) 316-323

J.A. Holdener. "Conditions Equivalent to the Existence of Odd Perfect Numbers," *Mathematics Magazine* **79**(5) (2006) 389-391

Ma J.* and J.A. Holdener. "When Thue-Morse meets Koch," *Fractals: Complex Geometry, Patterns, and Scaling in Nature and Society*, **13** (2005) 191-206

J.A. Holdener. "Product-free Sets in the Card Game Set," *PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies*, **15**(4) (2005) 289-297

J. Holdener. "Visualizing Patterns in the Integers relating to the Abundancy Index," *Proceedings of the `Art and Math = X` Conference*, Univ. of Colorado, Boulder (2005)

Holdener J.A. and K. Howard. "Parametric Plots: A Creative Outlet," *The Journal of Online Mathematics and its Applications*, **4** (2004)

J.A. Holdener. "Art and Design in Mathematics," *The Journal of Online Mathematics and its Applications*, **4** (2004)

Holdener J.A. and A. Wagaman.* "A Classification of Periodic Turtle Sequences," *The International Journal of Mathematics and Mathematical Sciences*, **34** (2003) 2193-2201

J.A. Holdener. "A Theorem of Touchard and the Form of Odd Perfect Numbers," *The American Mathematical Monthly*, **109** (2002) 661-663

**SUMMER
SCIENCE
WORK**
(Research with
Undergraduates)

2014- "Searching for and Characterizing Abundancy Outlaws"
Zach Weiner '16

2011- "Characterizing Abundancy Outlaws"
Katherine Moore '12
(Won "best talk" award for this research at MAA's Mathfest in Lexington, KY, 2011; Pursuing PhD in Mathematics at Dartmouth)

2010- "Modeling the *Manduca sexta* midgut"
Jennifer Garbett '11
(Won "best poster" award for this research at AMS/MAA joint winter meetings in New Orleans, LA, 2011; Pursuing PhD in Mathematics, Notre Dame)

2009- "Interesting Problems involving Triangular Numbers"
Daniel Franz '10
(Received Goldwater Fellowship; Pursuing PhD in Mathematics, Univ. of Virginia)

"Modeling the *Manduca sexta* midgut"
Jennifer Garbett '11
(Won "best talk" award for this research at MAA's Mathfest, Pittsburgh, PA, 2010; pursuing PhD in Mathematics at Notre Dame)

2008- "The Abundancy Spiral: Exploring Diagonal Patterns"
Zoey Guo '10
(Pursuing PhD in Mathematics, Northwestern University)

"The Form of Perfect and Multiperfect Numbers"
Kaitlin Rafferty '10
(Teaching high school math in Baltimore, MD)

2007- "Modeling *Manduca Sexta* Caterpillars"
James Boston '10

"The Abundancy Index: Tracking down Outlaws"
Laura Czarnecki '08

2006- "The Search for Abundancy Outlaws"
William Stanton '08
(Received Goldwater Fellowship)

- 2004-** “When Thue-Morse Meets Koch”
Jun Ma ‘05
(Received Tomsich Science Award at Kenyon for this work; PhD in financial engineering, Princeton University)
- 2001-** “Classification of Turtle Sequences”
Amy Wagaman, ‘03
(Received Goldwater Fellowship; PhD in Statistics, Univ. of Michigan; now teaching statistics, Amherst College)
- 2000-** “Modeling the Construction of a Spider Web”
Nkululeko Moyo ‘01
(MS at Boston Univ; now an actuary working in Columbus, OH)
- “Modeling Trees with L-systems and Java3D”
Joshua White ‘01
(PhD in kinesiology, Indiana Univ; now assistant swim coach at Univ. of Michigan)
- 1999-** “Modeling Branching Patterns with L -systems”
Llewellyn Jones ‘01
(MS in computational finance, Carnegie Mellon; started own trading company)
- “Surface Rendering and 3D Graphics”
Atul Varma ‘01
(Employed at Mozilla)
- 2009 -** “Exploring Self-similar Surfaces”
Zackery Blitzer ‘11 and Jon Edwards ‘11
(Jon is pursuing PhD in math at Univ. of Arizona)
- 2008 -** “Generalized Thue-Morse Sequences and the von Koch Curve”
Lee Kennard ‘07 and Matthew Zaremsky ‘07
(Lee earned PhD in math at Univ. of Pennsylvania; now at UC-Santa Barbara)
(Matt earned PhD in math at Univ. of Virginia; now at SUNY-Binghamton)
- 2003 -** “Product-free Sets and the Card Game SET”
Jun Ma ‘05 (PhD in financial engineering, Princeton Univ; working for hedge fund)
- 2002-** “The $3k+1$ Conjecture”
Joanna Guild ‘02
(Currently teaching math at College of Idaho)
- 2000-** “Modeling Trees Using Matrices”
Heather Van Ligten ‘02
(Pursuing PhD in math, University of Texas in Austin)
- “Unraveling TripleCross with Group Theory”
Adam Knapp, ‘01
(Currently the Ritt Assistant Professor of Mathematics at Columbia University)
- 1999-** “Consecutive Perfect Numbers?”
James Riggs, ‘00
(works at Kenyon as systems analyst)

**OTHER
UNDERGRAD
RESEARCH**

GRANTS

NSF: UBM Group - "Investigating the Mathematical Biology of Metabolic Scaling using Manduca InSTaRs (Interdisciplinary Science Training and Research)"; Undergraduate Biology and Mathematics Grant (#0827208). Co-PI. Total Award: \$236,410. Award Period: 2008-11

NSF-CCLI: "Development and Dissemination of Computational Science Educational Materials and Curricula at the Undergraduate Level" - Biomathematics modules (subcontractor). Grantee Institution: Capital University, Columbus, OH. (#9952806). Total Award: \$480,020. Subcontract Amount: \$10,000. Award Period: 2007-10

"Generalized Thue-Morse Sequences and the von Koch Curve," Kenyon College Faculty Development Grant, 2007. Amount: \$1900

"Information Literacy in Number Theory at Kenyon College", an Andrew W. Mellon Information Literacy Grant, 2002. Amount: \$3000

"Hands-on Learning in Calculus via Computer-based Projects", an Andrew W. Mellon Enhanced Learning through Collaboration Grant, in collaboration with Keith Howard (Kenyon College) and Lewis Ludwig, Zaven Karian (Denison University). 2002. Amount: \$12,250

"Increasing Accessibility of Examples in Abstract Algebra Using Computer-based Projects", an Andrew W. Mellon Enhanced Learning through Collaboration Grant, in collaboration with Peter Blanchard (Denison University). 2000. Amount: \$8,134

SELECTED PRESENTATIONS

"Sources of Flow as Sources of Symmetry: Divergence Patterns of Sinusoidal Vector Fields," Bridges Conference, Seoul, South Korea (August, 2014)

"A Mathematical Perspective of Kenyon's Founding," Kenyon College, Gambier, OH Founder's Day Address (October, 2013)

"When Thue-Morse Meets Koch," Carnegie Mellon University, Pittsburgh, PA (March 2013)

"Perfect and Abundant Numbers: A Perfect and Abundant Source for Undergraduate Research Projects" and "Why Math is Fun," Rose Hulman Undergraduate Mathematics Conference, Rose Hulman Institute of Technology, Terre Haute, IN (April, 2012); Keynote Speaker

"Perfect and Abundant Numbers: A Perfect and Abundant Source for Undergraduate Research Projects," Carnegie Mellon University (March, 2012); Invited Speaker

"Characterizing Perfect Numbers," a talk for the Summer Math Program for women (SMP), Carleton College, Northfield, MN (June, 2012)

"Perfect and Abundant Numbers: a Perfect and Abundant Source for Undergraduate Research Projects," Undergraduate Mathematics Day, University of Dayton, Dayton, OH (November, 2011); Invited Address

"Mental Imagery in Mathematics," Calculus Communication Circles, University of Akron, Akron, OH (October, 2011); Invited Speaker

"Technology and Inquiry-based Learning," Legacy of R.L. Moore Conference, Washington D.C. (June, 2011); Invited Speaker

"Why Math is Fun: Convergence, Connections and the Great Unknown," Reunion Weekend, Kenyon College, Gambier OH (May, 2011)

"The Spiraling Art of Mollusks," Sinclair Community College, Dayton, OH (May, 2011); Invited Speaker

"When Thue-Morse Meets Koch" Mathematical Association of America's Allegheny Mountain Section Meeting. Clarion University. Clarion, PA (April, 2011); Invited Address

"Calculus Reform: 25 Years Later," AMS/MAA joint winter meeting. New Orleans, LA (January, 2011); Invited Panelist

"The Spiraling Art of Mollusks" and "Spiraling Integer Patterns via Painting and Proof," two talks for "Math Day" at St. Norbert's College, De Pere, WI (November, 2010); Keynote Speaker

"The Spiraling Art of Mollusks," a talk for the Women in Mathematics Colloquium (funded by the NSF), St. Mary's College, Winona, MN (Nov., 2010)

"Mental Imagery in Mathematics," Workshop on Reasoning and Sense-Making in the Mathematics Curriculum, Mathematical Sciences Research Institute, Berkeley, CA (June, 2010)

"Modeling Seashell Form," Capital University, Columbus, OH (May, 2010)

"When Thue-Morse meets Koch," Klempner Colloquium series, University of Colorado, Boulder, CO (April, 2010)

"Perceptions of Student Respect," Oxford Roundtable: Women in the Academy, Oxford University, England (March, 2010); Invited Speaker

"Conducting Research with Undergraduates," AMS/MAA joint winter meeting. San Francisco, CA (January, 2010); Invited Panelist

"Investigating the Mathematical Biology of Metabolic Scaling using Manduca InSTaRs (interdisciplinary Science Training and Research)," an MAA poster session for projects supported by the NSF. AMS/MAA joint winter meeting. San Francisco, CA (January, 2010)

"Mental Imagery in Mathematics" Mathematical Association of America's Ohio Section Meeting. Kenyon College. Gambier, OH (October 31, 2009); Invited Address

"Patterns of Perfection," a talk for the Summer Math Program for women (SMP), Carleton College, Northfield, MN (June, 2009)

"Understanding Patterns of Perfection within the Integers via Painting and Proof," Cleveland State University, Cleveland, OH (May, 2009)

“Spiraling Seashell Surfaces” and “Spiraling Primes and Primary Spirals,” two talks for “Math Day” at the University of Findlay, Findlay, OH (March, 2009);
Keynote Speaker

“Computer Algebra Systems for Visualization, Unwieldy Computations, and ‘Hands-on’ Learning,” Project NExT panel, Mathfest. Madison, WI (August, 2008)

“Understanding Patterns of Perfection within the Integers via Paintings, Proofs and Undergraduates,” Northern Arizona University, Flagstaff, AZ (April, 2008)

“The Abundancy Spiral,” Mathematical Association of America’s Ohio Section Meeting. Marietta College. Marietta, OH (April, 2008)

"Generalized Thue-Morse sequences and the von Koch Curve," International Conference of Applied Mathematics and Computing. Plovdiv, Bulgaria (August, 2007)

"Understanding Patterns of Perfection within the Integers via Painting and Proof," United States Military Academy, West Point, NY (September, 2006)

"Perfect Numbers and the Abundancy Index," Ohio Wesleyan University, Delaware, OH (November, 2005)

"An Algebraic Formulation of the Card Game SET," Mathematical Association of America’s Ohio Section Meeting. Ashland University. Ashland, OH (October, 2005)

“When Thue-Morse meets Koch, ” American Mathematical Society Eastern Section Meeting, Bard College, Annandale-on-Hudson, NY (October, 2005); Invited Speaker

“Visualizing Patterns in the Integers relating to the Abundancy Index,” Art + Math = X Conference, University of Colorado, Boulder, CO (June, 2005)

“A Glimpse of Mathematics in Quilting,” Boulder Public Library, Boulder, CO (June 5, 2005)

“The Ancient Mystery of Perfect and Multiply Perfect Numbers,” Colorado College, Colorado Springs, CO (April, 2005), Metro State University, Denver, CO (April, 2005), University of Colorado, Boulder, CO (January, 2005)

“When Thue-Morse meets Koch,” a poster presentation; American Mathematical Society national meeting. Atlanta, GA (January, 2005)

“Appropriate Uses of Technology in the Collegiate Mathematics Classroom,” American Mathematical Society national meeting. Atlanta, GA (January, 2005);
Invited Panelist

Sagebrush, Turtles, and Snowflakes,” Mathematical Association of America’s Ohio Section Meeting. University of Cincinnati. Cincinnati, OH (March 26, 2004); Invited Address

“Confessions of a Mutant Mathematician,” a departmental colloquium at The Ohio State University, Columbus, OH (May 21, 2002); Invited Speaker

“On a Theorem of Touchard and the Form of Odd Perfect Numbers,” Mathematical Association of America’s Ohio Section Meeting. Xavier University. Cincinnati, OH (April 5, 2002)

“Undergraduate Research in Mathematics,” American Mathematical Society national meeting. San Diego, CA (January, 2002); Invited Panelist

“Increasing Accessibility of Examples in Abstract Algebra Using GAP,” American Mathematical Society national meeting. New Orleans, LA (January, 2001)

“Models of Life: A Mathematics Course for Nonmajors,” Mathematical Association of America’s Ohio Section Meeting. Wittenberg University. Springfield, OH (October, 2000)

“The Capstone Experience,” a panel discussion at the Mathematical Association of America’s Section Meeting. Huntington, WV (April, 2000)

“Choosing a Way to Teach Calculus,” a panel discussion for the Project NExT workshop at the Mathematical Association of America’s Annual Meeting. Providence, R.I. (July, 1999); Invited Panelist

“Self-Similarity and Spiral Growth,” Youngstown State University. Youngstown, OH (March, 1999)

“Changing the Culture: Case Studies from Project NExT,” Board of Mathematical Sciences Annual Chairs Colloquium: Leading, Innovating, and Succeeding, a national conference sponsored by the National Research Council for department chairs of Mathematics. Washington, DC, (November 13-14, 1998); Invited Panelist

“Odd Shapes and Strange” Surfaces,” a presentation for Sonia Kovalevsky Day (workshop for talented female high school students of Pennsylvania). Clarion University. Clarion, PA (May 15, 1998); Invited Address

“Invariants and Algebraic K-theory,” a talk in coordination with the Five Colleges Speaker Circuit, Oberlin College. Oberlin, OH (March, 1998)

“Undergraduate Mathematics Education: Visions for the Future,” a panel discussion at the American Mathematical Society’s Annual National Meeting. San Diego, CA (January 9, 1997)

“Algebraic K-theory and the Goodwillie Group,” a departmental colloquium at the University of Colorado. Boulder, CO (November 18, 1996); Invited Speaker

**RECENT
CONFERENCE
PARTICIPATION
AND FACULTY
DEVELOPMENT**

International Congress of Mathematicians, Seoul, South Korea, (August, 2014)

Bridges 2014 Conference, Seoul, South Korea, (August, 2014)

American Mathematical Society/Mathematical Association of America national winter meetings in Baltimore, MD (January, 2013)

“Twenty-first Century Liberal Education: A Contested Concept” Faculty Seminar, Transylvania University. Lexington, KY (July, 2013)

MAA PREP Workshop on Sage, (June/July, 2012)

CCICADA Reconnect 2012 program on Game Theory and National Security, Winona State University, Winona, MN (June, 2012)

Legacy of R.L. Moore Conference, Washington D.C. (June, 2011)

Mathematical Association of America’s Allegheny Mountain Section Meeting. Clarion University. Clarion, PA. (April, 2011)

American Mathematical Society/Mathematical Association of America national winter meetings in New Orleans, LA (January, 2011)

Oxford Roundtable – “Women in the Academy: Status and Prospects,” Lincoln College, Oxford, England (March 14-19, 2010)

American Mathematical Society/Mathematical Association of America national winter meetings in San Francisco, CA (January, 2010)

Mathematical Association of America’s Ohio Section Meeting. Kenyon College. Gambier, OH (October 31, 2009)

Park City Math Institute – “Arithmetic of L -Functions and Algebraic Number Theory,” Park City, Utah (June 28-July 18, 2009)

Concepts in Calculus workshop, University of Arizona, Tuscon, AZ (April, 2009)

American Mathematical Society/Mathematical Association of America national winter meetings in Washington D.C. (January, 2009)

Mathfest (the annual national summer meeting sponsored by the Mathematical Association of America) at Madison, WI (August, 2008)

Mathematical Association of America’s Ohio Section Meeting. Marietta College. Marietta, OH. (April 12, 2008)

American Mathematical Society/Mathematical Association of America joint winter meetings. San Diego, CA. (January, 2008)

Thirty-fifth annual Mathematics and Statistics conference - “Number Theory”. Miami University, Oxford, OH. (September 28-29, 2007)

International Conference of Applied Mathematics and Computing. Plovdiv, Bulgaria (August 12-18, 2007)

**OTHER
PROFESSIONAL
EXPERIENCE**

Published Book Reviews:

Roots to Research: A Vertical Development of Mathematical Problems, by Judith and Paul Sally, in the *American Mathematical Monthly* (to appear)
Vector Calculus, by Miroslav Lovric, in *MAA Reviews* (June, 2007)
Prime Numbers: the Most Mysterious Numbers in Math, by David Wells, in *MAA Reviews* (February, 2007)
Sophie's Diary: A Historical Fiction, by Dora Musielak, in the *Read This! MAA Online Book Reviews* (September, 2006)
Math & Bio 2010: Linking Undergraduate Disciplines, edited by Lynn Arthur Steen in the *Read This! MAA Online Book Reviews* (May, 2005)
Mathematical Models in Biology: An Introduction, by Elizabeth Allman and John Rhodes, in the *Read This! MAA Online Book Reviews* (June, 2004)

Reviewing/Refereeing:

Mathematical Reviews

The Journal of Number Theory

Fractals: Complex Geometry, Patterns, and Scaling in Nature and Society

The American Mathematical Monthly

The College Math Journal

PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies

JOMA: The Journal of Online Mathematics and its Applications, (I served on the initial review board for *JOMA* at Swarthmore College in August, 2000)

Editorial Experience: Member of the Editorial Board for *PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies*, (2006-present); Associate Editor of *Mathematica Militaris*, the bulletin of the mathematics departments of the United States military service academies (1995-1996)

Grant Reviews: Reviewed faculty development proposals for Kenyon faculty as part of my service on the Faculty Affairs Committee (2005-08); Reviewed *Enhanced Learning through Collaboration and Technology* grant proposals for the Mellon Foundation (June, 1999); Reviewed *Instrumentation Laboratory Improvement* grant proposals for the NSF (January, 1998); Reviewed *Course and Curriculum Development and Undergraduate Faculty Enhancement* proposals for the NSF (January, 1996)

Faculty Mentoring: Organized a series of teaching discussions/presentations for faculty at Kenyon (topics included: designing and delivering effective lectures, fuzzy grading, the merits and perils of PowerPoint; running successful undergraduate research programs, teaching with the Socratic Method, crazy but effective things teachers do in the classroom, 2007-09); Presented in Kenyon's new faculty orientation program (2002-2004, 2007-08); Served as a mentor for three doctoral students in mathematics at the Ohio State University, as part of the collaborative "Preparing Future Faculty" program (2003-04, 2006-07, 2008-09); Served as a Consultant for Project NExT, a professional development program of the Mathematical Association of America for faculty new to the teaching profession (2004-05)

Service to the Mathematics Community: Member of the MAA's Council on Publications and Communications Committee, which supervises all MAA publications programs (books, journals, and online publications) (2014-17); Member

of the Selection Committee for the MAA's Mary P. Dolciani Award, recognizing a research mathematician in pure or applied mathematics who is making a distinguished contribution to the mathematical education of K-16 students (2012-13); Member of the Selection Committee for the MAA's Deborah and Franklin Tepper Haimo Award for Distinguished College or University Teaching of Mathematics (2012-14) and Chair (2014-15); Member of the MAA's CUPM committee on number theory, formed to define syllabi for model number theory courses as guidance for other instructors (2012-13); Member of CONSACT, the *Committee on Section Activities* for the Ohio section of the Mathematical Association of America (2006-12); Member of CONSTUM, the *Committee on Student Members* for the Ohio section of the Mathematical Association of America (2000-06); List Manager for the Project NExT electronic mailing list, a mailing list for mathematics faculty new to the profession (1997-2011)

SERVICE AT KENYON

Faculty Governance:

Member of Faculty Affairs Committee (2013-present)
Chair of the Mathematics Department (2008-11)
Chair of the Faculty Affairs Committee (2007-08)
Member of the Executive Committee (2007-08)
Member of Faculty Affairs Committee (2005-08)
Member of the Curriculum Policy Committee (2000-04)
- LBIS subcommittee (2002-03)
- Quantitative Reasoning Subcommittee (2000-01)
Member of the Student-Faculty Senate (1998-2000)
- Pledge Review subcommittee (1998-99)
- Sexual Harassment Policy subcommittee (1998-2000)

Search Committee Membership:

Vice President for Student Affairs (2014-15)
Tenure-track faculty position in Political Science (2013-14)
Curator of Education and Interpretive Programs (Spring/Summer, 2011)
Director of the new Art Gallery (Spring/Summer, 2010)
Head Men's Basketball Coach (Spring, 2010)
Chair for the three-year visiting position in Mathematics (2008-09)
Associate Director of the Career Development Center (Spring, 2007)
Visiting faculty position in Philosophy (Spring, 2007)
Head Women's Volleyball Coach (Summer, 2006)
LBIS Library and Technology Consultant position (Fall, 2005)
Associate Director of the Career Development Center (2003-04)
Tenure-track faculty position in Psychology (2002-03)
Co-chair for the tenure-track position in Math/Biology (2001-02)
LBIS Library Technology Consultant and 2 Systems Analysts (Spring, 2001)
LBIS Librarian and Technology Consultant (Spring, 2000)
Visiting faculty positions in Mathematics (Spring, 2000; Fall, 1997; Spring, 2008)
Tenure-track faculty position in Mathematics (Spring, 1999)
LBIS Director of Information Access (Summer, 1998)

Other College Service:

Advisory Board for the Center of Innovative Pedagogy (2013-present)
Kenyon Web Redesign Committee (2007-2008)

Health Professions Advisory Committee (1999-2008)
Chair of the Health Professions Advisory Committee (2002-2003)
Member of the Faculty Lectureships Committee (1998-2004)
Sexual Misconduct Advisor (2000-2003)
Recruiting for Admissions - I participate regularly on panels, presentations and tours for Kenyon visit days; I have also read college applications to help identify top science scholars for potential scholarships, and I have contacted some of our top prospective math students via phone or email (1999-present)
Produced a 50 minute CD: "The Fascination of the Primes" for Kenyon donors
Presented numerous general audience math talks for Kenyon parents and alumni

OUTREACH

Member of the Advisory Board for the very large (\$4,543,465) NSF-funded five-year project "Designing for Equity by Thinking in and about Mathematics" (Debt-M), a collaborative effort of the Pittsburgh Public Schools, Carnegie Mellon University, Education Development Center, the University of Pittsburgh, and Duquesne University; the project is devoted to closing the opportunity gap for marginalized secondary mathematics students in Pittsburgh (2013-17)

Coach of MathCounts: Worked with about a dozen sixth-, seventh-, and eighth-graders at the Mt Vernon Middle School for an hour each week on problem-solving; the program culminated with the regional mathematics competition at Ashland University; one participant went to State (2013)

Volunteer of at local elementary school: Worked weekly with a kindergarten class and 6 talented children, enriching their mathematical experience with hands-on math activities (2006-08)

Director of KAP Calculus: Worked with high school teachers from across Ohio who are teaching Calculus for Kenyon credit at their schools; organized and taught workshops for the teachers on a variety of topics: writing in math classes, creating calculus projects, using technology in the classroom (2000-2010)