

The University of Illinois At Chicago
 Department of Mathematics, Statistics, and Computer Science (M/C 249)
 851 S. Morgan, Chicago, Illinois 60607
 Telephone: (312) 413-1417
saunders@math.uic.edu Fax: (312) 996-1491 <http://homepages.math.uic.edu/~saunders>

Professional Preparation

New College, Sarasota, Florida	Mathematics	B.S. 1972
University of California, Berkeley	Mathematics	M.A. 1974
University of California, Berkeley	Mathematics	Ph.D. 1978

Thesis: *Weighted Shift Operators*, 1978, adviser Henry Helson

Appointments

2006-present	Clinical Associate Professor	University of Illinois at Chicago
1997-2006	Lecturer	Department of Mathematics,
1994-2006	Project Associate	Statistics, and Computer Science
2006-present	Director	Chicago Symposium Series
2005-present	Director	The Mathematicians and Education
2000 - 2005	Co-director and Director of Evaluation and Research	Reform (MER) Forum
1980-1986	Senior Geophysicist	Texaco, USA
1978-1980	Assistant Professor	University of Wyoming,

Grants

Co-Principal Investigator, The Cryptoclub: Cryptography and Mathematics Afterschool and Online (<http://www.math.uic.edu/CryptoClubProject>) This five-year, \$2.6 million, NSF project (#0840313) is designed to introduce middle school students across the country to cryptography and mathematics. As co-pi, Saunders is actively involved in directing all aspect of the project including the development student activity books and leader manual, development of the online games and activities (<http://cryptoclub.org/>), research and evaluation, leader training workshops and supervising project staff. (2009-

Director, The Chicago Symposium Series, www.math.uic.edu/chicagosymposia/
Chicago Symposium Series on Excellence in Teaching Mathematics and Science: Research and Practice. funded by The Illinois Board of Higher Education (HECA - \$50,000 annually) is a forum for faculty and graduate students in education, mathematics, and science devoted to improving teaching and learning of mathematics and science. These inter-disciplinary forums bring together people from universities, 4-year colleges and 2-year colleges. Heads a planning committee of 22 Chicago area faculty from 13 institutions (*Chicago State University, DePaul University, Harold Washington College, Illinois Institute of Technology, Loyola University Chicago, National-Louis University, Northeastern Illinois University, Northwestern University, Evanston, Roosevelt University, Rush Medical College, Saint Xavier University, University of Illinois at Chicago, William Rainey Harper College*), oversees evaluation, and supervises project staff. (2006-

1. *Chicago Symposium: Excellence in Teaching Mathematics and Science: Research and Practice*, Northwestern University, **speakers:** Eric Mazur, Physics, Harvard University and Philip Uri Treisman, Mathematics, University of Texas, March 23, 2012

2. *Chicago Symposium: Excellence in Teaching Mathematics and Science: Research and Practice*, Northeastern Illinois University, **speakers:** Chris Rasmussen, Mathematics Education, San Diego State University and Marcy Towns, Chemistry Purdue University, May 4, 2012
3. *Chicago Symposium: Excellence in Teaching Mathematics and Science: Research and Practice*, Harold Washington College, **speakers:** Bill Briggs, Mathematics, University of Colorado, Denver, and Julie Libarkin, Geology, Michigan State University, January 2011
4. *Chicago Symposium: Excellence in Teaching Mathematics and Science: Research and Practice*, Chicago State University, **speakers:** Melanie Cooper, Chemistry, Clemson University and Stamatis Vokos, Physics, Seattle Pacific University, May 2011
5. *Chicago Symposium: Excellence in Teaching Mathematics and Science: Research and Practice*, University of Illinois at Chicago, **speakers:** Diane M. Bunce, Chemistry, The Catholic University of America and Al Cuoco, Mathematics, Educational Development Center, Inc., January 2010
6. *Chicago Symposium: Excellence in Teaching Mathematics and Science: Research and Practice*, Northwestern University, **speakers:** Deborah Hughes Hallett, Mathematics, University of Arizona, and Richard K. Miller, President, Olin College of Engineering, March 2010.
7. *Chicago Symposium: Excellence in Teaching Mathematics and Science: Research and Practice*, DePaul University, **speakers:** Gary E. Gladding, University of Illinois and Pratibha Varma-Nelson, Chemistry, Indiana University-Purdue University Indianapolis, May 2010.
8. *Chicago Symposium: Excellence in Teaching Mathematics and Science: Research and Practice*, National Louis University, **speakers:** Rolf K. Blank, Director of Education Indicators, Council of Chief State School Officers and Guershon Harel, Mathematics, San Diego University, January 2009
9. *Chicago Symposium: Excellence in Teaching Mathematics and Science: Research and Practice*, Loyola University, Chicago, **speakers:** Michael Klymkowsky, Biology, University of Colorado, Boulder, and William G. McCallum, Mathematics, University of Arizona, March 2009.
10. *Chicago Symposium: Excellence in Teaching Mathematics and Science: Research and Practice*, Northeastern Illinois University, **speakers:** Judit Moschkovich, Mathematics Education, University of California, Santa Cruz and Philip M. Sadler, Harvard-Smithsonian Center for Astrophysics, May 2009
11. *Chicago Symposium: Excellence in Teaching Mathematics and Science: Research and Practice*, DePaul University, **speakers:** Marta Civil, Mathematics, University of Arizona and James H. Stith, Vice President, Physics Resources Center, American Institute of Physics, March 2009.
12. *Chicago Symposium: Excellence in Teaching Mathematics and Science: Research and Practice*, Chicago State University, **speakers:** David Hammer, Physics Education, University of Maryland, College Park, Senk, Mathematics Education, Michigan State University, May, 2009
13. *Chicago Symposium: Excellence in Teaching Mathematics and Science: Research and Practice*, *Midwestern Symposium*, Roosevelt University, **speakers:** James Lewis, Mathematics, University of Nebraska-Lincoln and Lillian McDermott, Physics, University of Washington, October 2007
14. *Chicago Symposium: Excellence in Teaching Mathematics and Science: Research and Practice*, University of Illinois at Chicago, **speakers:** Richard Duschl, Science Education, Rutgers University and Dylan Wiliam, Deputy Director of the Institute of Education, University of London, January 2007.
15. *Chicago Symposium: Excellence in Teaching Mathematics and Science: Research and Practice*, Northwestern University, **speakers:** Kathryn B. Chval, Mathematics Education, University of

Missouri-Columbia and Danny Bernard Martin, Mathematics Education, University of Illinois at Chicago, March 2007.

16. *Chicago Symposium: Excellence in Teaching Mathematics and Science: Research and Practice*, William Rainey Harper College, **speakers:** Susan L. Forman, Mathematics, Bronx Community College of The City University of New York; Solomon Garfunkel, Consortium for Mathematics and Its Applications; and Donald J. Wink, Chemistry, University of Illinois at Chicago, May 2007.

Senior personnel, The Chicago Transformation Teacher Institutes (CTTI), a NSF-funded (\$5 million) Math Science Partnership of five universities (University of Illinois at Chicago, DePaul University, Illinois Institute of Technology, Loyola University Chicago, and Northwestern University) and the Chicago Public Schools (CPS). Its aim is to increase the content, pedagogical, and leadership skills of teachers through a school leader-team approach. Worked with the team of mathematicians from DePaul University and UIC that developed a series of four courses for high school teachers. Developed and taught the first course in the sequence, *Making Sense of Numbers and Symbols*. Serves also to consult with the high school teams of teachers. (2009-present)

National Service:

Consultant, United States Department of Education (2012 -

Participant Science, Technology, Engineering, and Mathematics (STEM) in 21st Century Community Learning Centers (CCLC) Partners Meeting at the New Orleans Convention Center. July 30, 2012

Participant, Science, Technology, Engineering, and Mathematics (STEM) in 21st Century Community Learning Centers (CCLC) Technical Working Group (TWG). The TWG is instrumental in identifying the resources and technical assistance necessary to successfully increase the presence and quality of STEM activities in the 21st CCLC. April 16 – 17, 2012.

Participant, Science, Technology, Engineering, and Mathematics (STEM) in 21st Century Community Learning Centers (CCLC) Technical Working Group (TWG). The TWG is instrumental in identifying the resources and technical assistance necessary to successfully increase the presence and quality of STEM activities in the 21st CCLC. October 17, 2011.

Participant, Partners Meeting for the Science, Technology, Engineering, and Mathematics (STEM) in 21st Century Community Learning Centers (CCLC). The CCLC asked participants for discussion of current barriers and relevant solutions to incorporating STEM in afterschool centers and school communities to help shape the resources and technical assistance needed to launch their STEM in 21st CCLC initiative. July 25, 2011.

Panelist, The White House, National Science Foundation

Four-time panelist, Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST) Program, National Selection Committee (NSC), National Science Foundation. PAEMST, administered by NSF on behalf of The White House Office of Science and Technology Policy, is the nation's highest honor for mathematics and science teachers. Each state may submit up to three mathematics and up to three science applications for national review. NSC panels recommend two teachers (one science and one mathematics) from each state or jurisdiction to NSF. NSF then forwards these recommendations to The White House for final approval. Dates confidential.

Joint Mathematics Meetings

Head organizer, MAA-AMS-MER Special Session on Mathematics and Education Reform

1. *MAA-AMS Special Session on Mathematics and Education Reform*, Joint Mathematics Meetings in San Diego. Principal organizer with William H. Barker, Bowdoin College, William G. McCallum, University of Arizona, and Cathy Kessel, Berkeley, CA. Jan 2013.

2. *MAA-AMS-MER Special Session on Mathematics and Education Reform*, Joint Mathematics Meetings in Boston . Principal organizer with William H. Barker, Bowdoin College, William G. McCallum, University of Arizona. cosponsors: Joint Committee on Women, MAA CRAFTY, the Institute for Mathematics Education (IME). Themes: *Issues of the Transition to College Mathematics, Bridge to the Upper Division: From Pedagogical Research into Pedagogy and Back Again, Assessment and Professional Development for the Common Core State Standards in Mathematics, The Participation of Girls and Women in Mathematics*. January 2012.
3. *MAA-AMS-MER Special Session on Mathematics and Education Reform*, Joint Mathematics Meetings in New Orleans. Principal organizer with William H. Barker, Bowdoin College, William G. McCallum, University of Arizona. Themes: *The Mathematical Education of Teachers, The Role of QL in the High School Mathematics Curriculum, Logic in the Undergraduate Mathematics Curriculum*. January, 2011.
4. *MAA-AMS-MER Invited Paper Session on Mathematics and Education Reform*, Joint Mathematics Meetings, San Francisco, CA. Principal organizer with William H. Barker, Bowdoin College, William G. McCallum, University of Arizona, Michael Starbird, University of Texas at Austin. Themes: *Climate, Sustainability, and the Curriculum, Guided Discovery Learning, Refocusing Algebra: From Middle School to College*. January, 2010
5. *MAA-AMS-MER Special Session on Mathematics and Education Reform*, Joint Mathematics Meetings in Washington D.C. Principal organizer with University of Illinois at Chicago, William H. Barker, Bowdoin College, William G. McCallum, University of Arizona. Co-sponsors: MAA Committee on the Undergraduate Program in Mathematics (CUPM), Project NExT, the Institute for Mathematics Education (IME) and the Committee on Education of the AMS. Themes: *Mathematicians and the preparation and professional development of K-12 teachers, Instructional Innovations in Undergraduate Mathematics Education, Helping Students Develop Mathematical Habits of Mind*. January, 2009
6. *MAA-AMS-MER Special Session on Mathematics and Education Reform*, Joint Mathematics Meetings, Diego. Principal organizer with William Barker, Bowdoin College; Dale Oliver, Humboldt State University, and Michael Starbird, University of Texas in Austin. Themes: *Bridge to the Upper Division: From Pedagogical Research into Pedagogy and Back Again, Mathematicians Working in PreK-12 Classrooms, Reports, Research, and Recommendations Regarding University Practices in the Hiring and Retention of Women*, January 2008
7. *MAA-AMS-MER Special Session on Mathematics and Education Reform*, Joint Mathematics Meetings in New Orleans. Principal organizer with William Barker, Bowdoin College; Dale Oliver, Humboldt State University, and Michael Starbird, University of Texas in Austin. Themes: *Building and Sustaining Communities of Mathematicians and Teachers, Sustaining Engagement of Mathematicians in the Mathematical Education of Teachers, Calculus Instruction: Addressing a Variety of Populations*, January 8, 2007
8. *MER-AMS-MAA Special Session on Mathematics and Education Reform*, Joint Mathematics Meetings in .San Antonio. Principal organizer with William Barker, Bowdoin College; Kenneth Millet, University of California - Santa Barbara; Dale Oliver, Humboldt State University, Themes: *Mentoring and Nurturing Students in Mathematics Departments, Reaching for Common Ground in K-12 Mathematics Education, Attracting more students into the Mathematical Sciences: Why and How?* January 12-15, 2006.

Courses developed at UIC

1. MTHT430, *Mathematical Analysis for Teachers I*, MTHT530, *Mathematical Analysis for Teachers II*. Currently developing this two-sequence course in Real Analysis for future high-school teachers. The goal in both courses is to strengthen students' appreciation of the foundations of real numbers and

calculus while deepening their understanding of high school mathematics connections to the topics. Innovations include the use of google docs to facilitate group discussion when the class is not meeting, and examination a variety of high school and calculus curriculum texts (*Integrated Math Project, CME and Harvard Calculus text.* (2009 – present)

2. MTHT 467: *Introduction to Number Theory with Application* and MTHT 591: *Topics in Teaching Elementary/Junior High School Mathematics: Number Theory.* An interactive textbook has been developed which involves modules on applications to middle school, including negative numbers, problem solving with number lines, cryptography from CryptoClub, working with exponents and finding prime numbers. The students present lessons from the middle school book, *The Cryptoclub: Using Mathematics to Make and Break Secret Codes* (Beissinger, Pless, 2006), and other middle school curriculum sources. Supervised graduate student TA. (2008 – present)
3. MTHT 490, *Topics in Teaching Secondary Mathematics: Making Sense of Numbers and Symbols.* This course was developed with The Chicago Transformation Teacher Institutes (CTTI). Supervised graduate student TA. Summer, 2010, 2012.
4. MTHT 491: *Discrete Mathematics to K-8 Teachers.* Develop syllabus using *Discrete Mathematics for K-8 Teachers* by Valerie Debellis and Joseph Rosenstein. Initiated use of Action Research project that involved all MTHT491 students in Chicago Public Schools classrooms. Developed additional module on iteration. 2005, 2008, 2011.
5. MTHT 466: *Introduction to Calculus and the Graphing Calculator.* Wrote interactive text to involve students in class discussion, developed middle school applications and use of TI-Calculators for graphing and programming. Fall, 2005, 2008, 2010.
6. MTHT 491: *Cryptography for K-8 Teachers*, adapted materials from MTHT 467 to use CryptoClub materials in class for elementary and middle school teachers. 2009.
7. MTHT 465: *Algebra Initiative I, Topics in Teaching Elementary/Junior High School Mathematics: Advanced Mathematical Content for Middle School Teachers*, Special Section for CPS Algebra Initiative. Developed syllabus and materials in conjunction with the Chicago Algebra Initiative. Fall 2007.
8. MTHT 591: *Topics in Teaching Elementary/Junior High School Mathematics: Algebra Initiative II, Advanced Mathematical Content for Middle School Teachers*, Special Section for CPS Algebra Initiative. Developed syllabus and materials in conjunction with the Chicago Algebra Initiative. Supervised CPS co-teacher. Spring 2008.
9. MATH 140-141, 1999-2008
 - a. Developed common and consistent midterm and final exams for both courses.
 - b. Developed unit on algebra and functions with Judith Sallee.
 - c. Developed new syllabus for MATH 140 when the Sybilla Beckman, *Mathematics for Elementary Teachers*, was adopted for Math 140 in 2005.
 - d. Developed interactive workbook/text, *Workshop Geometry: Mathematics for Teaching Elementary School.* This text currently is used for all MATH141 sections.
10. MTHT 490: *Teaching High School Mathematics to Underprepared Students*, Developed syllabus and materials for the High School Transformation program. Supervised CPS co-teacher. Fall 2007.
11. MTHT 468: *Geometry with Applications for Middle Grade Teachers*, Created modules to involve students in teaching geometry. Each module involved one geometry topic appropriate for future middle school teachers, one application using Geometer's Sketchpad, and one school lesson. These materials are currently used for this course. Summer, 2004

12. MTHT 565, *Teaching Geometry: An Activity Approach*. Adapted Workshop Geometry text for this course for inservice middle school teachers. Spring 2007.
13. MATH 121, *Precalculus*.
 - a. Coordinated lectures for 3 years.
 - b. Supervised TAs and readers.
 - c. Developed the use of student-focused activities in large classrooms in conjunction with the nsf-funded *Chicago Excellence in Teacher Preparation* Project. 1999-2003.
 - d. Chaired textbook search committee, 2000.
14. Other courses taught (1998-2007):
 - a. MATH 180 *Calculus I*
 - b. MATH 181 *Calculus II*
 - c. MATH 210 *Calculus III*
 - d. MATH 300 *Writing in Math*
 - e. MTHT 400 *Methods of Teaching Secondary Mathematics I*
 - f. MTHT 470, *Teaching Mathematics with Science: An Activity Approach*

Students

Emily Cilli-Turner, DA candidate, member dissertation committee, current
 Gail Tang, DA, member dissertation committee, Spring 2012
 Jaclyn Taubman, MST, independent study, *Geometry for Middle School Teachers*, Fall 2009
 Dana Abdul-Majid, BS, independent study, *Mathematical Modeling*, Fall 2007

Department Service

Member, Math Education (OME) Committee

- a. participates in planning curriculum for elementary and secondary programs, ongoing
- b. Member subcommittee on Recruitment
- c. Member subcommittee on Secondary Coursework
- d. Member joint committee with College of Education on elementary math sequence. (2006)
- e. Advisor to certified teachers in MST program
- f. maintained Room 600 SEO, classroom manipulatives, and Math Ed resource room (2005-2011)
- g. interviewed BST applicants. 2006 -.

Member, Undergraduate Studies Committee (2012 -)

Coordinator MATH 140 and MATH 141 (2006-2011)

- a. Maintained common exams.
- b. Supervised and trained peer tutors and teaching assistants.

Committee on Education, American Mathematical Society, represented MSCS, November 2010
 Committee on Education, American Mathematical Society, represented MSCS, November 2008
 Committee on Education, American Mathematical Society, Attended meeting, November 2007

Coordinator, MATH 121 Precalculus, 1999-2003

Previous Grants

Evaluator and member of planning board, Chicago Symposium Series, www.math.uic.edu/chicagosymposia/ funded by The Illinois Board of Higher Education (HECA - \$50,000 annually) is a forum for faculty and graduate students in education, mathematics, and science devoted to improving teaching and learning of mathematics and science. During this time the group organized 21 symposia, inviting 52 speakers. (1999-2005)

Senior personnel:

Excellence in Undergraduate Mathematics: Confronting Diverse Student Interest, A joint project of American Mathematical Society and The Mathematicians and Education Reform Forum, funded by the National Science Foundation under Grant No. 0088794. co-organizer of workshops and principal internal evaluator of the project. Supervised student worker staff.

Dec. 1-4, 2005 Arizona State University Tempe, AZ
Excellence in Undergraduate Mathematics: Mobilizing for the Future

March 25-28, 2004 Loras College Dubuque, Iowa
Excellence in Undergraduate Mathematics: Mainstreaming in-depth mathematical experiences for students

Sept. 11-14, 2003 University of Alaska, Anchorage, Alaska
Excellence in Undergraduate Mathematics: Lessons Across the Curriculum

March 13-16, 2003 Ithaca College Ithaca, New York
Excellence in Undergraduate Mathematics: Mathematics for Teachers and Mathematics for Teaching

Nov. 7-10, 2002 Louisiana State University Baton Rouge, Louisiana
Excellence in Undergraduate Mathematics: Diversification of Upper Level Mathematics Programs

May 2-5, 2002 Washington University St. Louis, Missouri
Excellence in Undergraduate Mathematics: Mathematics for the Non-Traditional Major

Dec. 6-9, 2001 Arizona State University Tempe, Arizona
Excellence in Undergraduate Mathematics: Mathematics for the "Rest of Us"

Project Associate: *Developing Professional Masters Programs*, AMS-MER-SIAM joint project, funded by NSF, to support the development of professional masters degrees in mathematics. principal evaluator for project, included database of professional masters programs in the United States.

Oct. 18-20, 2001 University of Cincinnati Cincinnati, Ohio
Professional Masters Degrees in Teaching Mathematics: Exploring Options in Teacher Education

Nov. 4-6, 1999 Arizona State University Tempe, Arizona
Developing Professional Masters Degrees In Mathematics: Exploring Options in Graduate Education, Co-sponsored with AMS and SIAM

Nov. 5-7, 1998 New York University New York
Developing Professional Masters Degrees In Mathematics: Exploring Options in Graduate Education, Co-sponsored with AMS and SIAM

Project Associate: *Teacher Preparation*. MER Network workshops organized in conjunction with NSF funded Collaboratives for Excellence in Teacher Preparation Projects and Association of Mathematics Teacher Educators. Project Associate: co-organizing and evaluator.

May 8-10, 1998 University of Illinois at Chicago Chicago

March 4, 2012

Developing Leadership in Elementary and Middle School Mathematics Education

November, 1993 RPI Troy, New York
Preparation for Teaching Mathematics: Issues, Policies and Programs

November, 1995 Cornell University Ithaca, NY
Curricular Reform in Mathematics: Issues, Content, and Implications

Project Associate: MER Department Network. NSF-funded initiative. Project Associate: member of taskforce and principal internal evaluator. Teams from twelve public and one private research mathematics departments met to discuss implementing serious education reform in their departments. Supervised student worker staff.

March, 1997 University of Michigan Ann Arbor, Michigan
Fourth Annual MER Department Network Workshop

November, 1996 University of Illinois at Chicago Chicago
Teacher Education in Mathematics Departments

March, 1996 University of Maryland College Park, Maryland
Third Annual MER Department Network Workshop

May, 1995 University of California, Santa Barbara Santa Barbara
Second Annual MER Department Network Workshop

November, 1994 Southern University Baton Rouge, Louisiana
Second Workshop on Preparation for Teaching Mathematics

May, 1994 University of Texas, Austin Austin, Texas
Invitational workshop to establish the MER Department Network

Professional Development for K-12 teachers

Developer and Leader, *Summer 2012 Leader-Training Workshops*. UIC, June 27 – 29 and August 8 – 10, 2012, with Janet Beissinger, UIC. These workshops are designed to train teachers and afterschool staff to lead CryptoClub programs. The teachers/afterschool leaders at these workshops will participate in the CryptoClub National Field Tests.

Developer and Leader *Summer Leader Training Workshops, Cryptography and Mathematics Middle-Grade Afterschool Project*, with Janet Beissinger, UIC. June 22 – 24, and August 8 – 10, 2011.

Developer and Leader *Crypto Club Leader-Training workshop* With Janet Beissinger, UIC. workshop to train Chicago area teachers for the The CryptoClub Afterschool and Online Middle-grade, Pilot Test 2010-11 August 12 – 13, 2010

Consultant. *Illinois Math-Science Partnership (IMSP) Workshop*, University of Illinois at Chicago, July 2007 and Spring 2008. These workshops were part of the Middle Grades Teacher Leader Institute. The goal was to build the leadership, content knowledge, and teaching/coaching skills of mathematics and science teacher leaders through access to the expertise of mathematicians and scientists -- including rich mathematical extensions of the school problems considered on each day of the workshop. Developed activities to help the teachers become independent thinkers and strong problem solvers. The workshops are coordinated by the Chicago Public Schools with funding from the Illinois State Board of Education and the Illinois Mathematics Science Partnership. 2007

Developer and Leader *Discrete Mathematics for Middle School Teachers Workshop*. UIC Initiative for Math and Science Teacher Content Education. With Judith Sallee, Harper College. University of Illinois at Chicago, June 28-July 9, 2004

Invited instructor. *IAS/Park City Mathematics Institute*, High School Teacher Program. Presented special lessons on geophysics applications. Summer, 1995

Community Service and Outreach to schools:

Chicago Algebra Initiative, a collaboration of University of Chicago, DePaul University, UIC and Chicago Public Schools. Developed and taught courses for eighth grade mathematics teachers who subsequently can become certified by the Chicago Public Schools to teach high school algebra in eighth grade. Serves on the committee (with Paul Sally, University of Chicago; Lynn Narasimhan and David Jabon, DePaul University; John Baldwin and Regetta Slaughter, UIC) that oversees the project including writing and administering the certification exams. (2006-present)

Further Math in the International Baccalaureate Program at Lincoln Park School in Chicago. Provided weekly supplementary lessons and helped students with extended essays in mathematics, 2008.

Taught Cryptography classes in the Northwestern Gifted and Talented program for middle school students, Spring 2009, Fall 2009 and Winter, 2012.

<http://animoto.com/play/rUjTf4fUhS9Pg1lCKYB1w>

Family Math Leader, Alexander Graham Bell School, 1996-1997.

Brenneman School, weekly session with supplementary lessons for second grade remedial classroom, 1993

Publications

The CryptoClub: Developing a Middle-Grade Mathematics Program for Afterschool, Beissinger, Saunders, Harris, Tang; pending

Discrete Mathematics: A Course in Problem Solving for 21st Century Middle School, Cofer, DeBellis, Liebars, Rosenstein, Saunders, Wirth; *Resources for Training Middle School Teachers*, MAA Notes Series, to appear.

Mathematics for the Rest-of-Us, Rethinking the Road toward Calculus Teachers Resources for Preparing Middle School Mathematics Teachers, Naomi Fisher and Bonnie Saunders; (J. Narayan, ed.), MAA Notes Series, 2004.

Reviews

Musser/Burger/Peterson, *Mathematics for Elementary Teachers 6/e*, Math for Teachers Comparative Review, May 2003

Math Trailblazers, Kendall/Hunt Publishing, TIMS Project, University of Illinois at Chicago. Reviewed manuscripts for the 5th Grade mathematics curriculum. 1996-1997

Other writing

Cryptography and Number Theory for Future Middle School Teachers, a workbook/text for MTHT467. In progress.

The CryptoClub Student Cipher Handbook and Leader Manual with Janet Beissinger. In progress.

Calculus with Future Middle School Teachers, a workbook for MTH466. 2009

Workshop Geometry: Mathematics for Teaching Elementary School, a text/workbook for MATH 141. 2004.

Selected Texaco Technical Reports:

Eikonal Equation and Slant Stack Migration, September, 1985

Slant Stack and Beam Migration, March, 1985

Beam Migration, September, 1984

A Finite Element Program for Wave Equation Generation, September, 1984

Directional Retardation of the Wave Equation for Wave Equation Migration, June, 1983

Stationary Phase Approximation to Integral Solutions of the Wave Equation, June, 1983

Talks and presentations

Cryptography and Mathematics for Future Middle School Teachers with Janet Beissinger, National Council of Teachers of Mathematics 2012 Regional Conference and Exposition: Chicago, Illinois [accepted]

Teaching Cryptography: The Mathematics of Secret Codes Grades 6, 7, 8, with Janet Beissinger at The iMATHination Conference, Math, Science and Technology Conference for Middle and High School Educators. January 20, 2012

What have we learned? Panel with Lawrence Gray, University of Minnesota, Teaching Undergraduates Mathematics, Mathematical Sciences Research Institute, Berkeley, California, May 13, 2009

Using Cryptography to Teach Number Theory to Future Middle School Teachers with Janet Simpson Beissinger, UIC. Contributed Paper Session, Innovations in Mathematics Teacher Education: MAA Mathfest, August 2, 2008

Using Case Studies to Teach Future Teachers, Colloquium, Mathematics Department, Oklahoma State University, April 18, 2008

A Mathematics Concentration for Pre-service Elementary School Teachers: An Existence Proof and New Conjectures, with Philip Wagreich, UIC, Critical Issues in Education: Teaching Teachers Mathematics, Mathematical Sciences Research Institute, Berkeley, California, May 31, 2007

Teaching Calculus with Future Middle School Teachers, AMS-MAA-MER Special Session on Mathematics and Education Reform, Joint Mathematics Meetings, New Orleans, January 8, 2007,

Invited speaker for *Making Math Engaging: Discrete Mathematics for K-8 Teachers Workshop*, Rutgers University, July 27 - 29, 2006

Teaching Discrete Mathematics to K-8 Teachers, a mini-workshop in connection with the Eighth Annual Symposium Series on Excellence in Teaching Mathematics and Science: Research and Practice, Symposium I, May 5, 2006

Learning to reason and solve problems while coloring maps. Breakout session at Eighth Annual Symposium Series on Excellence in Teaching Mathematics and Science: Research and Practice, Symposium I, Feb. 6, 2006

Invited speaker for *Making Math Engaging: Discrete Mathematics for K-8 Teachers Workshop*, Rutgers University, July 26 - 28, 2005

CSMI University Partners: Common Issues and Concerns – Part III. Breakout session at Seventh Annual Symposium Series on Excellence in Teaching Mathematics and Science: Research and Practice, Symposium III, May 2, 2005, UIC, Chicago, IL, with Bret Feranchak, Chicago Public Schools, and Rachel Shefner, Loyola University Chicago.

Preparing Tomorrow's Teachers: Using teaching activities to deepen mathematical understanding. Breakout sessions at Sixth Annual Symposium Series on Excellence in Teaching Mathematics and Science: Research and Practice, Symposium I, Feb. 13, 2004, Illinois Institute of Technology,

Preparing Tomorrow's Teachers: Using teaching activities to deepen mathematical understanding. Breakout sessions at Sixth Annual Symposium Series on Excellence in Teaching Mathematics and Science: Research and Practice, Symposium II, March 12, 2004, Loyola University, Chicago, IL, with Judith Sallee, Harper College.

How do Mathematics Departments practice ongoing Education Reform? Breakout session at Mathematics Education and Mathematics in the 21st Century: The Roles of Outreach, Teacher Preparation, and Research on Teaching and Learning in a Research I Mathematics Department, February 20-22, 2003, Tucson, Arizona, 2003.

Finding out about area and perimeter in a geometry course for preservice elementary education teachers. Breakout session at Fifth Annual Symposium Series on Excellence in Teaching Mathematics and Science: Research and Practice, Symposium I, February 7, 2003, Roosevelt University, Chicago.

Teaching "Deep Understanding" of Mathematics, a series of three breakout sessions with Susan Beal, St. Xavier University, Lise Jensen, Northeastern Illinois University, Lynn Narasimhan, DePaul University, David Rutschman, Northeastern Illinois University, and Bonnie Saunders, University of Illinois at Chicago, at the third Annual Symposium Series on Excellence in Teaching Undergraduate Science and Mathematics: National and Chicago Perspectives, Chicago, IL, 2001