Jennifer McLoud-Mann

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Education

Ph.D.	University of Arkansas; 2002 Research Area: Commutative Algebra Thesis: *On a Certain Family of Determinantal-Like Ideals* Advisor: Mark Johnson
M.S.	University of Arkansas; 1998
B.S.	East Central University, Ada, Oklahoma; 1997

Employment

Assistant Professor, University of Texas at Tyler; 2002-present

Professional Society Memberships

American Mathematical Society
Mathematical Association of America
Association of Women in Mathematics

Teaching

Teaching Awards

Recipient of White Fellowship for Teaching Excellence
University of Texas at Tyler
2005-2006

Minnie Stevens Piper Foundation
2005-2006 Excellence in Teaching Award Nominee
University of Texas at Tyler

Courses taught at UT-Tyler

Trigonometry; Math 1316 - 6 times
Mathematics for Business and Economics I; Math 1324 - 2 times
Discrete Structures; Math 2330
Calculus I; Math 2413 - 2 times
Calculus II; Math 2414 - 3 times
Linear Algebra and Matrix Theory; Math 3315
Introduction to Abstract Algebra; Math 3336 - 2 times
Introduction to Analysis; Math 3345
Foundations of Mathematics; Math 3425 - 3 times
Matrix Methods in Science and Engineering; Math 3203
Multivariate Calculus; Math 3404 - 2 times
Concepts of Mathematics: Applications; Math 4330
Abstract Algebra II; Math 4336 - 2 times
Introduction to Real Variables; Math 4341
Algebraic Structures I; Math 5331
Algebraic Structures II; Math 5332
Topics: Ideals and Varieties; Math 5390
Topics in Mathematics Education I; Mted 5398
Topics in Mathematics Education II; Mted 5399

Program Participation

"Algebra, Technology, and the Problem Solving Process"
University of Texas at Tyler, Tyler, Texas; June 14-18, 2004
My involvement throughout this program is that of co-instructor for the summer, fall, and spring institutes on campus. This institutes are designed to educate in-service secondary algebra I teachers about various technologies to use in their classroom.

2003 PREP (Professional Enhancement Programs of the MAA) Workshop
Knot Theory; Wake Forest University, Winston-Salem, NC; June 9-13, 2003
This program was aimed at college and university teachers who are interested in learning more about knot theory. Upon completion of the workshop, teachers should be able to teach an undergraduate course in knot theory, do research in knot theory, and direct student research in knot theory.

Project NExT Fellow; 2002-3.
Project NExT (New Experiences in Teaching) is a program for new or recent Ph.D.s in the mathematical sciences who are interested in improving the teaching and learning of undergraduate mathematics. It addresses the full range of faculty responsibilities in teaching, research, and service, and it provides professional support for new faculty as they undertake these activities.

Research/Professional Growth

Publications

Minimal Knotting Numbers
Joint work with Casey Mann, Ben McCarty, Ramona Ranalli, and Nathan Smith
Submitted to the Journal of Knot Theory and Its Ramifications

Distance in three-dimensional lattices
Joint work with Casey Mann, Ben McCarty, Ramona Ranalli, and Nathan Smith
Submitted to the Journal of Discrete and Computational Geometry

On equations defining Veronese rings
Joint work with Mark R. Johnson
Archiv der Mathematik, 86, 205-210, 2006.

On the relationship between minimal lattice knots and minimal cube knots
Joint work with Casey Mann
Journal of Knot Theory and its Ramifications, Vol. 14, No. 7, 841-851, 2005.

On a Certain Family of Determinantal-like Ideals
Communications in Algebra, 33, 623-632, 2005.

Learning approaches, course experience, & astronomy understanding in The Oklahoma Project
Joint work with Karen Williams and Carl Rutledge
Journal of College Science Teaching, 27(4), 240-244, 1998.

Conference Presentations

Distance in Three-Dimensional Lattices
Joint work with Casey Mann, Ben McCarty, Ramona Ranalli, and Nathan Smith
Joint AMS-MAA Mathematics Meeting
AMS Session on Geometry and Topology
New Orleans, Louisiana; January 2007

Minimal Knotting Numbers
Joint work with Casey Mann (presenter), Ben McCarty, Ramona Ranalli, and Nathan Smith
Joint AMS-MAA Mathematics Meeting
AMS Session on Geometry and Topology
New Orleans, Louisiana; January 2007

Initiating A Sonya Kovelevsky Day
Joint work presented by Ramona Ranalli
Joint AMS-MAA Mathematics Meeting
MAA Session on Research and Other Mathematical Experiences for Students Outside of the Classroom
New Orleans, Louisiana; January 2007

Engaging Your Student Body Through Activities
Invited talk

Fall Meeting of Texas NExT
Sam Houston State University
Huntsville, Texas; October 2006

How Knot Theory and DNA Do the Tangle
Invited talk
Joint work with Jenny Tompkins and Casey Mann
Texas Undergraduate Mathematics Conference
Sam Houston State University
Huntsville, Texas; October 2005

Rees algebras of powers of ideals
Invited talk
UT Austin Algebra Seminar
UT Austin; April 2005

On the equations defining Veronese rings of ideals
Joint work with Mark R. Johnson
Texas Section MAA; Texas NExT Research Session
Arlington, Texas; April 2005

Lattice Knots and Cell Knots
Joint work presented by Casey Mann
1004th AMS meeting; Special Session on Knot Theory and Its Applications
Bowling Green, Kentucky; March 2005

On the relationship between minimal lattice knots and minimal cube knots
ITV LSAMP Videoconferences
University of Texas at Tyler; July 2004

On the relationship between minimal lattice knots and minimal cube knots
Joint presentation with Casey Mann
Texas Section MAA; Texas NExT Research Session
Corpus Christi, Texas; April 2004

On a Certain Family of Determinantal-like Ideals
Invited talk
987th AMS meeting; Special Session on Commutative Algebra
San Francisco, California; May 2003

On a Certain Variety of Determinantal-like Ideals
Texas Section MAA; Texas NExT Research Session
Huntsville, Texas; April 2003

Undergraduate Research Projects

Student: Shaun Williams
Project: n-Colorings of Twist Knots
Mentor: Dr. Jennifer McLoud

Date: Summer 2006

Publication
n-Colorings of Twist Knots
In preparation.

Presentation of n-Colorings of Twist Knots @
Texas Undergraduate Mathematics Conference
Sam Houston State University
Huntsville, Texas
October 2006

MAA Student Chapter at UT Tyler meeting
October 2006

Student: Jenny Tompkins
Project: Modeling DNA with Knot Theory
Mentors: Dr. Jennifer McLoud and Dr. Casey Mann
Date: Summer 2005

Publication
Modeling DNA with Knot Theory: An Introduction
Rose-Hulman Undergraduate Mathematics Journal
Volume 7 (1), Spring 2006.

Presentation of How Knot Theory and DNA Do the Tangle @
MAA Texas Sectional meeting
Wichita Falls, Texas
April 2006
Jenny won a prize for her presentation.

LSAMP Undergraduate Student Research Conference
Dallas, Texas
September 2005
Jenny won second place for her talk.

MAA Student Chapter at UT Tyler meeting
September 2005

Student: Ben McCarty
Project: Minimal Lattice Knots
Mentors: Dr. Jennifer McLoud and Dr. Casey Mann
Date: Summer 2004

Publication
Minimal Knotting Numbers (see my publication list)

Presentation of Minimal Knotting Numbers @
MAA Texas Sectional meeting

Arlington, Texas
April 2005

LSAMP Undergraduate Student Research Conference
El Paso, Texas
September 2004
Ben won third place for his presentation.

Students: Scarlet Worthen Ellis and Lesley Wilson
Project: Symbolic Powers of Edge Ideals
Mentor: Dr. Jennifer McLoud
Date: Summer 2003

Publication
Symbolic Powers of Edge Ideals
Rose-Hulman Undergraduate Mathematics Journal
Volume 5 (2), Fall 2004.

Presentation of The Edgey Ideal of Symbolic Powers @
Texas Section MAA
Corpus Christi, Texas
April 2004
These ladies won first place for their presentation in their session!

2004 Student Research Day; Poster session
University of Texas at Tyler
April 2004

Nebraska Conference for Undergraduate Women in Mathematics
Lincoln, Nebraska
February 2004

Funded Grants

Summer Research Experience for Undergraduates; Summer 2006
PI: Kazem Mahdavi
Co-pis: Casey Mann and Jennifer McLoud
Funding Agency: National Security Agency (NSA)
Award: $49,600 (over 2 years)
Description: This grant provides funding for three undergraduate students per summer for two years to conduct undergraduate research with UT Tyler investigators.

Sonya Kovelevsky Day Support; Fall 2005
PI: Ramona Ranalli
SIs: Rebecca Culshaw and Jennifer McLoud
Funding Agency: National Security Agency (NSA)
Award: $1250

Description: This grant provided monetary support for a Sonya Kovelevsky Day on the UT Tyler campus. On this day we invite local High School ladies to campus for mathematical activities with the ultimate goal being to encourage them to pursue Mathematics and mathematical oriented careers.

Faculty Research Grant; 2003-04
University of Texas at Tyler
Project: Computing the Second Degree Veronese of Rees Algebras of Certain Gorenstein Grade 3 Ideals

President's Faculty-Student Summer Research Program; Summer 2003
University of Texas at Tyler
Project: Symbolic Powers of Edge Ideals

Pending Grants

Sonya Kovelevsky Day Support; Fall 2006
PI: Ramona Ranalli
SI: Jennifer McLoud
Funding Agency: National Security Agency (NSA)
Award: $1750
Description: This grant would provide monetary support for a Sonya Kovelevsky Day on the UT Tyler campus. On this day we would invite local High School ladies to campus for mathematical activities with the ultimate goal being to encourage them to pursue Mathematics and mathematical oriented careers.

Unfunded Grants

Summer Research Program for Undergraduates; Summers 2006-2008
PI: Kazem Mahdavi
Co-pis: Casey Mann and Jennifer McLoud
Funding Agency: National Science Foundation (NSF)
Award: $172,800 (over 3 years)
Description: This grant provides funding for nine undergraduate students per summer for three years to conduct undergraduate research with UT Tyler investigators.

STTR (Small Business Technology Transfer Contract); Spring 2004
Project: Smooth, Piecewise-Polynomial Terrain Representation Using Non-traditional Metrics
Objective: Use non-traditional metrics to model terrain.
PI: Jennifer McLoud-Mann
Co-pis: Casey Mann, Ramona Ranalli, Nathan Smith
Funding Agency: U.S. Department of Defense
Description: This grant provides monetary support for a small business (Business Knowledge Architects for this grant) personnel and university faculty to conduct research on a proposed project.

STTR (Small Business Technology Transfer Contract); Spring 2004

Project: Intelligent Layout of Military Products
Objective: Develop a tool that automates system design layouts for applications such as unmanned air vehicles.
PI: Casey Mann
Co-pis: Jennifer McLoud-Mann, Ramona Ranalli, Nathan Smith
Funding Agency: U.S. Department of Defense
Description: This grant provides monetary support for a small business (Business Knowledge Architects for this grant) personnel and university faculty to conduct research on a proposed project.

STTR (Small Business Technology Transfer Contract); Spring 2004
Project: Hybrid Inference System for Data Fusion and Decision Support
Objective: Investigate and develop intelligent inference structure and related algorithms that seamlessly integrate reasoning in numeric and symbolic domains involving both continuous and discrete variables, with an emphasis on data fusion and decision support applications.
PI: Ramona Ranalli
Co-pis: Casey Mann, Jennifer McLoud-Mann, Nathan Smith
Funding Agency: U.S. Department of Defense
Description: This grant provides monetary support for a small business (Business Knowledge Architects for this grant) personnel and university faculty to conduct research on a proposed project.

Faculty Research Grant; 2004-05
University of Texas at Tyler
Project: Minimal Edge Numbers of Knots in Regular Lattices

President's Faculty-Student Summer Research Program; Summer 2004
University of Texas at Tyler
Project: Minimal Edge Numbers of Knots in Regular Lattices

Service

Departmental Service

Assistant Department Chair; May 2004-August 2006
My duties in this role include making the teaching schedule with the chairman, coordinating our lab workers, dealing with book orders through publisher and bookstore.

Sponsor of the MAA chapter at UT-Tyler
I am sponsor of the MAA student chapter at UT-Tyler. I have been involved in all aspects of the chapter including calling officer meetings, making schedules, helping with t-shirts, helping with booth at Patriot Preview days, inviting speakers (including Brad Smith, CEO Milliman USA and Mike Scott, aerospace engineer at Houston Space Center), writing co-curricular proposals for trips, hosting holiday parties, accompanying (driving them) female members to Nebraska for an undergraduate conference, and creating an Integration Bee.

Talks to the MAA chapter at UT-Tyler

"Geometry and Topology of the Buckyball and More"
This talk focused on the mathematics surrounding buckyballs which has been a hot topic in chemistry since their discovery in 1986 and the following Nobel Prize awarded for the research associated with the discovery.
This was a follow-up talk to Dr. Neil Gray's talk on the chemistry of buckyballs.
Fall 2004

"Unknot or Not?"
This talk was an introductory talk about knot theory.
It was followed by a talk from Dr. Neil Gray on the applications of knot theory to chemistry.
Fall 2003

"Pi and Ice Cream"
This talk was on the history of pi at our annual ice cream social.
Fall 2003

Sonya Kovelevsky Day Organizing Committee; 2005 & 2006
This committee's responsibilities included organizing a day full of mathematics activities for high school girls visiting campus.

Departmental Administrative Assistant Search Committee; Summer 2006
This committee's responsibilities include reading applications and interviewing qualified candidates for an administrative assistant II position in the mathematics department.

Departmental Faculty Search Committee; 2003-2004
This committee's responsibilities include reading applications and interviewing qualified candidates for a tenure-track faculty position in the mathematics department.

Calculus Committee; 2004-2005 (Mathematics Department)
This committee determines the procedures and curriculum for all calculus courses.

Education Interface Committee; 2002-2005 (Mathematics Department)
This committee is charged with interfacing with the Education Department and surrounding schools on issues relating to education, both on the graduate and undergraduate level.

Junior-Senior Committee; 2002-2005 (Mathematics Department)
This committee is charged with i) continued development and assessment of the Jr/Sr offerings & ii) any other issues relating to Jr/Sr courses.

Masters Degree Committees
Andy Hatton; Spring 2004
Kirk Bozeman; Spring 2006

Senior Seminar Students
Nnamdi Enyinna; Spring 2006

College Service

Governance Committee for College of Arts and Sciences; 2005-2007
I served as chairman of the 2006-2007 committee.

Chemistry Departmental Faculty Search Committee; 2003-2004
This committee was in charge of finding qualified candidates to fill a tenure-track faculty position in the chemistry department.

University Service

Status of Women and Minorities Committee; 2004-2006
I served as chairman of the 2005-2006 committee.

Student Financial Aid Appeals Committee; 2005-2006

Professional Service

MAA Undergraduate Poster Session Judge
Joint AMS-MAA Mathematics Meeting
New Orleans, Louisiana; January 2007

Panelist for Building Effective Student Groups
Texas MAA Sectional meeting
Wichita Falls, Texas; April 2006

NSF panelist for Bridge to the Doctorate Program
June 2005; December 2005; June 2006

AWM essay contest for high school girls judge

November 2004

Advanced Placement Summer Institute speaker
Tyler, Texas; 2003, 2004