The University of Dayton **2000**

Mathematics Department NEWSLETTER

Editor's Note: In early January, every alumna and alumnus of the mathematics department should receive a hard copy of this newsletter via the US Mail. If you did not receive your copy, please send your correct mailing address to the alumni office.

CHAIRPERSON'S MESSAGE

The University of Dayton Mathematics Department

December 2000 Last year, Tom began his message with "This will be my last newsletter as Chair." So, I begin with "This will be my first newsletter as Chair." I began serving a four year term as Chair on July 1, 2000. I came to the University of Dayton in August 1980. Jack McCloskey hired me and I have worked only with Jack and Tom as Chairs during my twenty years here. My goal is to serve this department as well as I've seen it served.

I think it is clear from recent newsletters that the department is undergoing significant change due to retirements and new hires. It is an exciting time. We are bringing good people to the department. We are bringing young and enthusiastic teachers who are developing strong research programs. It is also a reflective time. My long time colleagues, who have continued and developed the excellent reputation of the department, are retiring and moving on. Last year, we hired Dr. Atif Abueida who earned his degree from Auburn University in combinatorics with Chris Rodger as his academic advisor. Before coming to the USA, Atif had obtained nine years experience in secondary education. We have also just recently hired Dr. Becky Krakowski who earned her degree from North Carolina State University in mathematics education. Becky has five years experience in secondary education. Moreover, the School of Education hired Dr. Janet Herrelko in mathematics education last year. There are many movements today in mathematics education and the potential for collaboration is very exciting.

When I began serving my term as Chair, I knew that change would be the norm. I was thinking mostly in terms of the retirements and the hiring. Since that time, Brother Raymond Fitz has announced that he will step down as President of the University of Dayton during the summer of 2002. Brother Ray was President when I came here in 1980. John Geiger has announced that he will step down as Provost during the summer of 2001. The administration has decided to replace John Geiger with an acting provost so that a new president can come on board and put an

administration in place. There is very much a sense of change permeating the entire university environment.

A year ago, Tom wrote that the much anticipated renovation and building of the science complex would happen. It has stalled briefly; the university has hired an architectural firm, the HOK Science + Technology Group, to develop a master plan for renovation and new building and to bring some fresh imagination to the project. This exercise has moved the anticipated ground breaking from May, 2001 to October, 2001. Planning is currently fast and furious. The university has already committed to the initial phase of a new building; recently, the renovation became a high priority university fund raising item and hopes are high that funds can be raised to complete the renovation phases as well.

We like to hear from you. We want to keep in touch and we have been updating our address book. We are interested in email addresses as well. We are always interested in opportunities for our students: positions, summer positions or internships, real applied mathematics clinics projects, and the like. On behalf of the Department of Mathematics, I wish you a very special Christmas and a happy new millennium.

Paul Eloe

THANKS!

Thank you very much for your generous support. We continue to use your support to provide matching funds to upgrade the department's technology capabilities. The software package, Maple, is routinely employed in many courses and the introduction of Maple is a part of the MTH 168 syllabus. The software package, Excel, is routinely used in MTH 128, the first semester mathematics course taken by School of Business Administration students. The university now has a PCSAS site license and SAS is routinely used in the statistics courses. We do not currently deliver any web based courses, but many of our faculty are experimenting with web based delivery. The demands from technology continually grow and your support has been instrumental to our ability to deliver mathematics in a modern environment.

Our records, in conjunction with those of the University Advancement Office indicated that the following people have donated a total of $8,051.44 to the Department of Mathematics since, December, 1999:

Mr. & Mrs. Jonathan E. Baniak (81)
Alan (55) & Lydia Powers (57) Berens
Ms. Marcia J. Boyle (74)
Dr. & Mrs. Gregory Campbell (70)
Mr. & Mrs. Dennis D. Clemens (62)
Mr. Nicholas J. Continisio (74)
Dr. & Mrs. Franklin D. Demana (60)
David & Cheryl (92) Prenger Edelmann
Paul & Laura Schneider (84) Eloe
Susan Miller Enyart (81)
Jonathon (96) & Tammi Tobin (96) Fedders
Mr. & Mrs. J. William Friel
Dr. & Mrs. Thomas E. Gantner (62)
Mr. & Mrs. Michael J. Hartke (66)
Dr. & Mrs. William J. Huster (78)
Mr. & Mrs. Paul S. Judd (82)
Victoria Steinlage & Kevin Kroeger (88)

Mr. & Mrs. George Morrison III (82)
Edward (76) and Mary Herrig (76) Mykytka
Mr. & Mrs. Timothy J. Rice (88)
Mr. James R. Sebastian (95)
Dr. & Mrs. Richard G. Segers (50)
John & Mary Sweeney (64) Sikora
Mr. & Mrs. Randall J. Smith (77)
Thomas (72) & Patricia Sobieralski
Mr. Robert W. Springer (77)
Mr. Kevin A. Thomas (76)
Mr. Yongzhi Zhang (97)

The above total includes employee matching gifts from the following corporations and foundations:
American Express Foundation
Lockheed Martin Corporation
Eli Lilly and Company Fnd.
NCR Foundation
Hewitt Associates LLC
Principal Financial Group Fnd.
Independent Colleges IN Fnd.

THE KENNETH C. SCHRAUT MEMORIAL LECTURESHIP FUND
Thank you also for your generous support of the Kenneth C. Schraut Memorial Lectureship Fund. In November, Dr. Joe Diestal (MTH 64) of Kent State University delivered the kickoff lecture entitled, "Sums. Series in Vector Spaces." The current market value of the fund is $21,351, which includes gifts made during the past year totaling $550.00 from the following:
Mr. & Mrs. Constance Kusmer & Stephen P. Hodges
Mr. Richard L. Iannarino (71)
Ronald & Pamela Steinkirchner (76)
Dr. & Mrs. C. Eugene Steuerle (68)
Mr. James T. Wiggenhorn

The above total includes matching gifts from the following corporations and foundations:
Nationwide Ins. Enterprise Fnd.
Lockheed Martin Corporation

19th Biennial Seminar and the Kenneth C. Schraut Memorial Lecture
The Biennial Seminar was held on the afternoon of Saturday, November 4, 2000. The event included the kickoff to the Kenneth C. Schraut Memorial Lecture and the lecture was delivered by Dr. Joe Diestel (MTH 64). The title of the lecture was "Sums. Series in Vector Spaces." The Schraut Lecture is intended to benefit the undergraduate majors. This lecture began with material that might very well have been presented by Dr. Schraut in advanced calculus; Joe then developed a colorful history of a theory that has developed through the twentieth century and Joe left us at the current state of the development of the theory. The abstract can be found at http://www.udayton.edu/~mathdept/kcs.html. We were happy to see Dr. Robert Buck (MS 69), Stephen Hodges (MTH 77), Kevin Thomas (MS 76), Joyce Marie Ray (MTH 74), Marjorie August (MTH 91), Daniel Messina (MS 94), Dr. Ann Farrell (MTH 80), Dr. Gregory Campbell (MTH 70), Dr. Peter Hovey (MTH 75), Dr. Alan Berens (MTH 55), George Morrison (MTH 82), and Yongzhi Zhang (MS 97). Other alumni included Ralph Steinlage, Tom Gantner, Gerry Shaughnessy and Harry Mushenheim.

FACULTY UPDATE

Full Time Faculty

Atif Abueida, 2000
Wiebke Diestelkamp, 1998
Paul Eloe, 1980
Tom Gantner, 1966
Bob Gorton, 1969
Joan Hart, 1999
Aparna Higgins, 1984
Muhammad Islam, 1985
Becky Krakowski, 2000
Glen Lobo, 1999
John Kauflin, 1966
Joe Mashburn, 1981
Jack McCloskey, 1965
Harry Mushenheim, 1965
Shirley Ober, 1977
Youssef Raffoul, 1999
Paula Saintignon, 1983
Carroll Schleppi, 1984
Gerry Shaughnessy, 1967
Les Steinlage, 1969
Ralph Steinlage, 1966

Part Time Faculty

Martha Carter, 1997
Eric Cheney, 1989
Cheryl Edelmann, 1999
Robert Finnegan, 1985
Cathy Hundt, 1995
Don Jurick, 1991
Kumara Jayasuriya, 2000
Karen Mickel, 1992
Betty Schneider, 1989
John Wulber, 1998

Professors Emeriti

Stanley Back, 1998
Bill Friel, 1963
Jerry Neff, 1990
Richard Peterson, 1998
Ben Rice, 1998
Joe Stander, SM, 1959
Jerry Strange, 1958

NEW FACULTY

We have hired two new faculty members at the assistant professor level beginning August 2000. They are Atif Abueida and Rebecca Krakowski. Atif earned a Ph.D. in mathematics from Auburn University in 2000. He pursues research in the area of combinatorics, with emphasis in graph theory and design theory. Rebecca earned her Ph.D. in mathematics education from North Carolina State University in May 2000. She has five years experience in teaching high school mathematics prior to her graduate work. We expect Rebecca to spend a lot of her time focusing on curriculum development and revision of mathematics content courses for education majors. Shirley Ober and Les Steinlage have accepted full-time lecture positions beginning August 2000. Both Shirley and Les had been on our part-time faculty member list for a long period of time. Shirley has taught mathematics since 1977, and Les has taught since 1969 at UD.

FACULTY ACTIVITIES

Publications: Paul Eloe and Linqing Zhang (MS 98): Comparison of Green's functions for a family of multipoint boundary value problems, J. Math. Anal. Appl. 246(2000), 296-307

Paul Eloe and M. Bohner: Higher order dynamic equations: Wronskians, disconjugacy and interpolating families of functions, J. Math. Anal. Appl. 246(2000), 639-656.

Paul Eloe and J. Davis: Discrete Kiguradze type inequalities, J. Difference Equations and Appls. 6(2000), 431-441.

Paul Eloe and Muhammad Islam (with Bo Zhang): Uniform asymptotic stability in linear Volterra integrodifferential equations with application to delay systems, Dynam. Syst. & Appl. 9(2000), 331-344.

Muhammad Islam and Youssef Raffoul: Stability properties of linear Volterra integrodifferential equations with nonlinear perturbation, Comm. Appl. Anal., to appear. Uniform asymptotic stability in linear Volterra difference equations, PanAmerican Math. J., to appear.

Paul Eloe and Youssef Raffoul (with D. T. Reid and K. C. Yin): Positive periodic solutions of nonlinear functional difference equations, J. Comp. & Math. Appl., to appear.

Youssef Raffoul: T-periodic solutions and a priori bounds, 32(2000), 643-652.

Joe Mashburn: (with Z. Balogh, H. Bennett, D. Burke, G. Gruenhage, D. Lutzer): OIF spaces, Questions & Answers in General Topology, Vol 18, 2000.

Paul Eloe, Joe Mashburn and L. Grimm: A boundary value problem on an unbounded domain, Diff. Eqns. and Dyn. Systems 8(2000), 125-140.

Wiebke Diestelkamp: The decomposability of orthogonal arrays on three symbols having t+1 rows strength t, J. Comb. Designs, 8(2000), 442-458. (with J. H. Beder) On the decomposition of orthogonal arrays, Utilitas Mathematica, to appear.

Aparna Higgins: (with Joseph Gallian) Helping students present their research, AMS Summer Conference Proceedings on Undergraduate Research, (1999), 289-295. Multi-faceted undergraduate research in mathematics at the University of Dayton, AMS Summer Conference Proceedings on Undergraduate Research, (1999), 297-305.

Wiebke Diestelkamp gave one talk at the AMS-MAA joint meeting in Washington DC in January 2000, and another talk at the Ohio NExT workshop at the spring MAA meeting at Marshall University. She was invited to give a poster at the First Midwest Conference for New Directions in Experimental Design, Columbus, May 2000. She has submitted an NSF grant based on her collaborative research work with J. Beder of University of Wisconsin-Milwaukee. She received a research council grant for summer 2000 from UD.

Paul Eloe organized a special session on Differential Inequalities and Applications for an AMS meeting held in Notre Dame University, April 2000. Paul presented a talk at the Midwest Differential Equations Conference at Concordia College in Moorhead, MN, and he presented a talk at the November, 2000 AMS meeting in Birmingham, AL. Both Muhammad Islam and Youssef Raffoul presented invited talks at a special session in the 953rd AMS meeting at Notre Dame University, April 2000. Also, Islam and Raffoul attended the 19th Southeastern-Atlantic Regional Conference on Differential Equations at Virginia Tech in October 2000, where each gave a professional talk. Joe Mashburn attended the Spring Topology Meeting in San Antonio, March 2000, and Topo2000 in July 2000. Jennifer Hontz is on leave. She is presently teaching at Meredith College in the Mathematics & Computer Science Department, in Raleigh, NC. She supervised Geoffrey Dietz's honors thesis. Geoffrey graduated with a BS in mathematics in 2000. Aparna Higgins continues to get invitations to speak at MAA Section meetings and to colleges about undergraduate research. She is an associate Co-director of Project NExT.

PROMOTION

Both Aparna Higgins and Muhammad Islam were promoted to the rank of full Professor effective from the fall of 2000-2001.

SABBATICAL
Tom Gantner is on an administrative sabbatical leave during the fall term of 2000. Tom is gathering interesting materials for the History of Mathematics course that he will teach in the Spring 2000. He has been a very active member of the Ohio section of the MAA, and he will hold the position of the president of the Ohio section of the MAA for the year 2001. Aparna Higgins is on a sabbatical leave for the full academic year of 2000-2001 and she is at the U. S. Military Academy in West Point, NY. Muhammad Islam will take his sabbatical for the spring term of 2001. During his sabbatical, Islam plans to continue his research activities and develop materials on wavelet analysis to be included in MTH 583: Fourier Analysis course. Inclusion of wavelet analysis, a relatively new and very useful mathematical tool to scientists and engineers, will enhance the course content of MTH 583. Carroll Schleppi took a sabbatical leave in the spring term of 2000. She visited primary grade mathematics classes that exposed her to the application of the NCTM Principles and Standards. Carroll and Jennifer Hontz have redesigned MTH 204: Math Concepts I to meet the new NCTM Principles and Standards.

MathSci - Computer Learning Environment
The MathSci Computer Learning Environment supplies the computer needs of students taking courses in Mathematics and Sciences. It consists of two state-of-the-art computer labs equipped with Pentium III PCs housed in SH 319 and SH 307. A major asset of the Environment are the MathSci Fellows, an outstanding group of undergraduates, who support the student users of the Environment and assist in maintaining its system and software.

SH307 is used equally for teaching and as an open environment. SH319 is used as an open environment accessible to all students. Student users have access to the campus networks, the internet, and specialized mathematics and science software (Maple, Matlab, ChemLab, Interactive Physics, etc.), and general purpose software (MS Office 2000). Numerous Mathematics and Science instructors courses regularly assign homework that requires their students to use the MathSci. A large number of upperclass and graduate students depend upon the mathematics programs available in the MathSci.

The MathSci has formed an alliance with the Office of Learning Assistance to create a comprehensive learning environment on the third floor of Sherman Hall. In addition to the computer facilities and the MathSci Fellows, mathematics and science tutors are available in the classrooms adjacent to the computer facilities. This has become a very successful Learning Village Initiative making the MathSci an important center for mathematics and science students.

UNDERGRADUATE ACTIVITIES
Chris Bomba, Alfonso Hayslip, and Elizabeth Brooks attended the Annual Pi Mu Epsilon Student Conference in September 2000 at Miami University, Oxford, Ohio. They presented a poster entitled "Mathematical Pictures Worth A Thousand Words" with their advisor Joan Hart at the conference.

Geoff Dietz, Jennifer Mifflin, Jason Jewell, Elizabeth Brooks, Joel Helton, Chris Bomba, Heather Argadine, Timothy Denehy, and Brady Dreyer participated in the 60th Annual William Lowell Putnam Mathematical Competition in December, 1999. Math Club held a bake sale jointly with the Society for Physics Students to raise money for Hunger Awareness week in November 2000. Math Club member Curtis Schultz spoke to the freshmen math majors on careers in actuarial science and his summer internship experience as an actuary in October 2000. Club members are preparing to host the 5th Annual UD Highschool Math Competition to take place in March 2001. Also, the club is hosting the "Puzzle Game" during Christmas on Campus.

Geoffrey Dietz won the Senior of the Year Award; Julia Tosi won the Sophmore of the Year Award.

GRADUATE ACTIVITIES

Rachael Kenney graduated with a Master of Science degree in applied mathematics in summer 2000. She is working as a visiting instructor in the Department of Mathematics, North Carolina State University at Raleigh, NC. Rachael's math clinic project "Local permutation polynomials for m-circulant Latin Squares" was supervised by Wiebke Diestelkamp. Two graduate students, Yang Gao and Youssef Dib, attended the 19th Southeastern-Atlantic Regional Conference on Differential Equations at Virginia Tech in October 2000.

ALUMNI NEWS

The first annual University of Dayton Alumni dinner was held in August 2000, at the ASA (American Statistical Association) meeting in Indianapolis. Those attending had a great time reminiscing about their time as undergraduates. The food was great too! Among those attending were: Jay Chmiel, Tom Santner, Greg Campbell, Chuck and Cathy Brinkman, Pete Hovey, Marylyn Schraut, Rafe Donahue, and Gerry and Judy Shaughnessy.

A portion of the following information was obtained from the UD Quarterly.

George Spahn (MTH 36) is now retired from a 64-year career in education that included service at Cathedral Latin High School in Cleveland, St. Joseph High School in Alameda, CA, Chaminade High School in Mineola, NY, Colegio San Jose in Puerto Rico, Chaminade High School in Hollywood, FL, Broward Community College in Davie, FL, and UD. Though his undergraduate major was mathematics, he later earned a bachelor's and master's degrees in civil engineering and served six years as acting head of UD's civil engineering department, leading the effort to gain accreditation from the American Society for Engineering Education. He writes, "I am now retired and volunteer as 'Mr. Wizard' in a Hope Outreach after-school enrichment program for disadvantaged youngsters Tuesdays and Wednesdays during the school year.

Catherine Ens Lizardi (MTH46) is retired and lives in Mexico City with her husband R. Ney Lizardi.

Frederick Lane (MTH 62) was awarded the endowed teaching chair by the Sun Sentinel in Fort Lauderdale, FL. Through 2001 he will use the position to develop and implement an interactive mathematics course on the Internet. Frederic has taught mathematics at Palm Beach Community College for 15 years and is a member of the college's strategic planning committee and the technology committee as well as a member of various professional organizations. He has five children and seven grandchildren and plays basketball weekly. He also plays tennis two times a week with his wife Shirl.

Daniel Burke (MTH 64) and Judith Trimmer Burke (EDE 88) live in Hilliard, OH, where Daniel is a self-employed computer consultant.

Dr. Robert Edward Lewand (MTH 66) recently published a monograph entitled Cryptological Mathematics with the Mathematical Association of America. The book is featured on the cover of the most recent publication of The Mathematician's Resource also published by the Mathematics Association of America. Dr. Lewand is a professor in the Department of Mathematics & Computer Science at Goucher College in Baltimore.

Bob Fondiller (MTA 68) and Pat Taylor Fondiller (EDE 68) live in Fremont, CA, where Bob is an account manager for Ariba Inc.. Pat works part time as a computer specialist for Fremont Unified School District. They write, "Still living on the West Coast and have three graduations out here. Our oldest daughter, Julianne, received her master's degree from the University of Washington in Seattle. Our son, Chad, graduated from high school and will be attending the University of CA, San Diego for engineering. In May 1999, our second daughter, Janine, graduated from San Francisco State University. We celebrated 30 years of marriage last year!"

Joan Giardina (MTH 70) was appointed a senior vice president and manager of personal trust investment services for Chicago Trust Co.

Jeffrey Vaughn (MTH 70) lives in Madison, IN, with his wife, Shari. He writes, "Shari teaches elementary school in Carrolton, KY, and I work in information systems for the Department of Energy in Dayton. Our daughter, Tania, graduated from Purdue in 1994, is married to Phil Kahn and lives in Savannah, GA. Our son, Jeff, graduated from Purdue in May, and our youngest, Amy, is an art major at Indiana University."

Bill Madden (MTH 73) Currently, vice president of financial services for Brown & Brown Co. in Clark, N.J. He is married with three boys, Cameron, Tyler, and Bradley. He enjoys golf and coaching baseball and soccer.

Jane Pendergast (MTA 74) recently moved from the University of Florida to the University of Iowa, where she is a faculty member in the Department of Biostatistics in the College of Public Health and director of the Center for Public Health Statistics. Jane also serves on the board of directors of the American Statistical Association and is chair of the regional advisory board of the eastern North American region of the International Biometric Society.

James P. Hartman (MTH 77) has recently initiated a career change of sorts, accepting the position of Director of Human Resources at Convergys, where he has been employed since 1979. He attended the UD Career Fair in September 2000, and enjoyed the new look of the campus very much. He is looking forward to hire UD graduates for his company in the future.

Andrew Ehrenzeller (MTH 81) and Suzanne Ksycewski Ehrenzeller (83) (REE) recently relocated to Apex, NC. They have three children, Molly (5-27-90), Hannah (10-21-93) and Emma (8-12-97). Andrew is a project manager at IBM.

Rafe Donahue (MTH 87) continues his Darwinian ranking of your favorite college team at http://home.earthling.net/~rafedonahue/rankings. A PDF format of a paper describing the ranking system can be found at the web site. This article will appear in the Proceedings of the 2000 Annual Meetings of the American Statistical association.

Lori Jirles (MTH 88) and her husband, Paul, own Byesville & Northstar Pharmacies in Lore City, Ohio. They have four children, Emily, Katherine, Rachel, and David.

Lisa Niehenke Harrington (MTH 89) and Thomas Harrington (MBA 94) have moved to Cleveland after three years in Atlanta. They have two children, Caitlyn and Christopher. Tom and Lisa write that they love to golf and are always interested in getting together with UD alumni especially those in the Cleveland area.

Mary Kaczynski Ollier (BSE 89) teaches mathematics at Carroll High School where she chairs the Department of Mathematics.

Thomas "T.J." Reisch (MTH 89) and Melissa Miller Reisch (CMT) live in Strongsville, Ohio. Thomas is a vice president of actuarial for the Ceres Group Inc. Melissa is a district sales manager for Verizon Wireless.

Dan Simon (MTH 89) is now the K-12 supervisor of mathematics in the Scotch Plains-Fanwood School District. Dan is also working on a doctorate in mathematics education at Rutgers University and is an adjunct professor at Middlesex County College. He and his wife, Linda, live in Old Bridge, N.J. with their children, Shannon, Jacob, and Kyle.

Marjorie August (MTH 91) works for General Dynamics Land Systems Division in Sterling Heights, MI. She has been recently promoted to Senior Software Engineer.

Eric Kaufmann (MS 91) has been tenured and promoted in the Department of Mathematics and Statistics, University of Arkansas, Little Rock. He lives with his wife Yihong and son Ryan Guang Kaufman.

Rebecca Busam Sorice (MTH 92) and her husband, Cory, announce the birth of Quinten (5-30-00). The family lives in Atlanta.

David Edelman (ELE) and Cheryl Prenger Edelmann (MTH 92) announce the birth of Anthony Luke (2-3-99). The family lives in Troy, Ohio. Their e-mail address is cheryldave@erinet.com.

Joe Coyle (MS 93) was awarded a three year post-doc sponsored by the Engineering and Physical Sciences Research Council. He is applying hp-finite element methods for the solutions of the Maxwell equations and he is working with Mark Ainsworth at the University of Strathelyde in Glasgow.

Kristin Toft Lampe (MTH 93) teaches at Carroll College in Wisconsin. Kristi and her husband, Peter, live in Mukwonago, WI and Peter teaches mathematics at the University of Wisconsin, Whitewater. We won't be seeing Kristi in New Orleans this January; she and Peter are expecting.

Dan Messina (MS 94) works as a Mathematical Modeling Engineer for Rad-con, Inc. and he has returned to the Cleveland area.

Amie Marie Gill Wood (MTH 96) and her husband, Michael, announce the birth of Joshua Michael (7-20-99).

Martina Ruzickova (MS 97) is employed at Capital One in Information Technology e-commerce department, Richmond, VA.

Cortlund Sattler (MTH 97) married Holly Mosler (EDE) Nov. 27. The couple lives in Sandusky, Ohio. Cortlund is a merchandise area manager at Cedar Point Amusement Park. Holly teaches in the Sandusky City Schools.

Matt Carroll (MTH 99) is a working towards his Ph.D. degree in mathematics at the University of Colorado, Boulder, CO.

Geoffrey Dietz (MTH 00) has begun his graduate studies in mathematics at the University of Michigan.