MATHEMATICS DEPARTMENT NEWSLETTER
JUNE 2005

CHAIRPERSON'S MESSAGE

The transitions continue. **John Kauflin** and **Harry Mushenheim** retired from teaching following many years of outstanding service to the University of Dayton and the Department of Mathematics. You will find citations printed below in this newsletter. I take this opportunity to thank both John and Harry for dedication to teaching and for the depth of the commitment each has made to UD over the years. It has been an honor to serve as your colleague. I wish you well as you now have the opportunity to develop new interests and pursue new activities. John and Harry will continue using their Lotus Notes email addresses and you can contact them at John.Kauflin@notes.udayton.edu and Harry.Mushenheim@notes.udayton.edu, respectively.

Those of you who visit campus are struck by the physical changes on campus. The Science Center (consisting of Sherman, Wohlleben, a new connector, and a new auditorium), provides some wonderful new classroom space and laboratory space. It also provides an atrium space that the students love. Students hang out in the Science Center. Sherman and Wohlleben are still essentially Sherman and Wohlleben, and plans are ongoing for continual renovation. We have a new dormitory (learning/living space) called Marianist Hall. It is at the front end of Founders Field. The strategy here is to open space so that we can go into the dorms one wing at a time and renovate. Marycrest is due for renovation, wing by wing, soon. A new physical activities center is being built at the back end of Founders Field. I like to joke with Harry that with this new structure at least he won't be a stranger to campus. The student neighborhood (ghetto) is being renovated house by house. Art Street (near the McGinnis Center) is a small learning/living center on Kiefaber. The campus facelift will continue to be at the top of the university's agenda for the foreseeable future.

Some of the transitions in the department have focused on the Master's programs. We have completed our first year of implementing a Master's program in financial mathematics. The official title is a Master of Financial Mathematics (MFM). So, it is not a master of science. It is intended to have some professional focus to it and it is intended that the degree have value in the corporate world. We have no graduates yet so we will test the value of the new degree in a year's time. The degree certainly has generated interest with prospective students. If we could only double the number of assistantships.

This year we shall implement a new Master's program in mathematics education. **Becky Krakowski** and **Shannon Driskell** are the primary developers of this program and Becky will serve as the Program Director. This program will be a 3-year summer program. Incoming students will be licensed high school mathematics teachers. So the incoming students already

have the mathematics BA equivalent and already are licensed. The curriculum contains 3 pedagogy courses from the School of Education, 6 newly designed mathematics course for high school teachers, an applied regression analysis/ research methods course, and a research experience. We anticipate these in-service teachers will perform a research experiment in their own classrooms. We are very excited about this new program and we are receiving considerable interest from prospective students even as the recruiting materials are developed. Another exciting potential feature about the program is that we are working to develop our program to complement the mathematics and science education programs at Wright State University. In mathematics education, Wright State really focuses on the middle school curriculum. Thus, our efforts at the secondary level produce a good fit.

I will provide one more piece of news before I turn the letter over to the usual departments. I congratulate **Aparna Higgins**, a 2005 recipient of the Deborah and Franklin Tepper Haimo Award for Distinguished College or University Teaching of Mathematics. This national award is the most prestigious teaching award presented by the Mathematical Association of America (MAA). Aparna is only one of 43 college or university mathematics teachers to have ever received this award. She is but the second in the state of Ohio. Aparna is a terrific classroom teacher with a broad teaching agenda that includes courses for majors, courses for engineers, courses for the middle school pre-service teachers and courses for humanities based students. She has developed a professional agenda focused on undergraduate research (she advises students in the UD Honors Program, and she delivers workshops and mini-courses through the MAA and invitations across the nation), and on her work as co-director of Project NExT, a professional development program for recent doctoral graduates in mathematics. You will find the MAA citation of her award announcement in this newsletter. Aparna, I am so pleased that you are receiving well deserved recognition for your many outstanding contributions to the mathematics community.

We keep a current web page at http://www.udayton.edu/~mathdept/. Under Archives, you will find the Newsletters dating back to 1996. I hope you enjoy this year's newsletter.

Thanks.
Paul Eloe

THANKS!

Thank you again for your generous support. As you read through the undergraduate and graduate activities sections, you can read about the activities you have supported this past year. You have helped support Math Events, Integration Bee, the High School Mathematics Competition, and undergraduate student travel and graduate student travel. Your support is very much appreciated.

Our records, in conjunction with those of the University Advancement Office, indicate the following people donated a total of $8,470.00 to the Department of Mathematics during 2004:

Ronald & Kathleen Brashear Beisel (63)
Stephen & Cheryl Bergeon (83)
Gregory and Julie Ruschau Bishop (86)
Eugene D. Bolzan (69)
Gregory & Patricia Forsythe Campbell (70)
Paul & Melanie Schneider Campbell (67)
Maureen Cleary (70)
Mr. & Mrs. Patrick MacVeigh (78)
Mr. & Mrs. George G. Morrison, III (82)
Charles & Alicia Fernandez-Mott (61)
Jane F. Pendergast (74)
Edward & Joyce Ray (74)
Timothy & Pamela Schultz Rice (88)
Richard & Elizabeth Harrison Segers (50)

Dr. and Mrs. Franklin Demana (60)
David (93) & Cheryl (92) Prenger Edelmann
Paul and Laura Schneider (84) Eloe
Anne Farley Flynn (86)
Mark A. Goldschmidt (67)
Marla Prenger Gross (90)
Michael & Mary Ann Gold Hartke (66)
William J. Huster (78)
Kevin & Victoria Steinlage Kroeger (89)
Mr. & Mrs. John Sikora (66)
Robert W. Springer (77)
Julie Anne Suwalski (92)
Kevin A. Thomas (76)
Daniel & Susan Elaine Thompson (81)
Mark Turella (80)
Daniel & Nancy J. Voss (79)
Christopher Wagner (71)
Pieter Wiersema (74)

The above total includes employee matching gifts from the following corporations and foundations:

Cinergy Foundation
The Procter & Gamble Fund
Scientific Atlanta Foundation
ITQ Foundation
Hewitt Associates LLC
IBM Foundation
The NCR Foundation
Towers Perrin Co.

THE KENNETH C. SCHRAUT MEMORIAL LECTURESHIP FUND

Thank you also for your continued generous support of the Kenneth C. Schraut Memorial Lectureship Fund. As of March 31, 2005, the market value of the fund is: $43,956.00.

This past fall, **Jane Pendergast (**74**)** (see below) delivered the **5th Kenneth C. Schraut Memorial Lecture**. This year's lecture is scheduled for Saturday, 5, 2005. The Lecture will be held in conjunction with Undergraduate Mathematics Day, the undergraduate mathematics conference. Please see http://academic.udayton.edu/MathEvents/ for continual updates with respect to this year's Lecture and undergraduate conference. Thanks. The following individuals donated an additional $7,925.00 to the endowment during 2004:

Richard R. Allen (75)
Philip & Kathy Kolesar-Aftoora (69)
Robert E. Gaskell
Robert E. Goubeaux (58)
William J. Scharf (68)
Ronald & Pamela Steinkirchner (76)
C. Eugene Steuerle (68)
Terrance & Cecile Griffin Stretch (66)

The above total includes matching gifts from the following corporations and foundations:

Lockheed Martin Corporation

MATH EVENTS AT UD

Through their generous contributions to the Kenneth C. Schraut Memorial Lectureship fund, our alumni have enabled us to host the annual Kenneth C. Schraut Memorial Lecture. Since 2002, the Schraut Lecture has anchored *Math Events* each year. In even-numbered years, we hold the Biennial Alumni Seminar, and in odd-numbered years, we organize Undergraduate Mathematics Day, a conference for undergraduate students. This year's *Math Events* will be held on Saturday, November 5, 2005. The most current information can be found at http://academic.udayton.edu/MathEvents/.

For the last three years, **Wiebke Diestelkamp** and **Aparna Higgins** have co-organized *Math Events*. They have been successful in obtaining external funding for *Math Events*. In addition to

the support of the Schraut Lectureship Fund (which is reserved to cover the expenses associated with the Schraut Lecture), expenses associated with *Math Events* are about $3000 a year.

MATH EVENTS 2004

Math Events 2004 consisted of three components: *Conversations among Women in Mathematics, the 5th Kenneth C. Schraut Memorial Lecture*, and *the 21st Biennial Seminar on Careers in Mathematics.*

Conversations among Women in Mathematics consisted of a panel discussion on issues concerning women in mathematics, four parallel mathematics workshops and a luncheon. We had seventy-seven participants.

For the panel discussion, we had five panelists, four of whom were UD alumnae:

- **Marjorie August (91)**, senior software engineer, General Dynamics Land Systems
- **Amy Bellis**, cryptologic mathematician, National Security Agency
- **Teresa Dean (79)**, senior human resource manager, Procter & Gamble
- **Kathleen Dietz (71)**, senior mathematics and statistics teacher, Calvert Hall College High School
- **Jane Pendergast (74)**, associate professor in the Department of Biostatistics and Director of the Center of Public Health Statistics, University of Iowa

The discussion was very lively. Every panelist spoke for about 10 minutes about her development as a mathematician, her career path and the challenges or opportunities presented to her along the way. While their careers are very different, various similarities emerged from their stories – all of them felt that it was important to take advanced mathematics classes and all of them seemed to have a "go-getter" attitude.

Following the panel discussion, each participant took part in a hands-on mathematics workshop. The workshops were

- **Code Breaking**, Dr. Amy Bellis, National Security Agency
- **Crayons and Computers: Awesome Pictures of Mathematics**, Dr. Annalisa Crannell, Franklin and Marshall College
- **Pondering Pebbling Problem**s, Dr. Aparna Higgins, University of Dayton
- **Geometry with Geometer's SketchPad**, Dr. Becky Krakowski, University of Dayton

Following the workshops, we ended the program for *Conversations* with a sit-down luncheon. Seating was pre-arranged, so that each table had a mix of high school students, college and graduate students, teachers and alums of our department.

The *5th Annual Kenneth C. Schraut Memorial Lecture* was given by **Jane Pendergast** (74). She spoke on "Beyond reasonable doubt: the role of statistics in health research." Her talk focused on the role of statistical reasoning and methods in health research.

The *21st Biennial Seminar on Careers in Mathematics* marked the third and final session of the day. The format was a little different this year. Instead of assigning career representatives to different classrooms, we set up tables and met in the large social space outside the new Science Center auditorium. The new format received mixed reviews, and we will continue thinking about an optimal format for the careers seminar. This year eight loosely defined careers were represented:

- Statistics/Biostatistics: **Jane Pendergast** (74), **Tom Filloon** (81), **Marla (Prenger) Gross** (90)
- Management: **Teresa Dean** (79)
- Cryptography: Amy Bellis
- Teaching: **Kathleen Dietz** (71), **Barbara Carruth** (68), **Greg Goodhart** (85)
- Engineering: **Bob Bolz** (66), **Marjorie August** (91), **Joe Huelsman** (98)
- Actuarial Science/Financial Analysis**: Cynthia Morrison** (74), **Tom Britt** (85), Steve Craighead
- Food Safety Advocacy: **Barbara Kowalcyk** (91)
- Information Technology: Mark Hale

The programs for all *Math Events* can be found at http://academic.udayton.edu/MathEvents/.

INVITATION TO MATH EVENTS 2005 ON SATURDAY, NOVEMBER 5, 2005

You are invited to participate in *Math Events 2005*, which will take place on Saturday, November 5, 2005. This year's program will consist of the 6^{th} *Annual Kenneth C. Schraut Lecture* and *Undergraduate Mathematics Day*, an undergraduate mathematics conference. We are pleased to announce that **Patrick Flinn** (72) of the National Security Agency will deliver this year's Schraut Lecture, and that **Kristen Lampe** (93) of Carroll College will present an invited address for Undergraduate Mathematics Day.

FACULTY UPDATE

Full Time Faculty

Atif Abueida, 2000
Wiebke Diestelkamp, 1998
Shannon Driskell, 2003
Stephanie Edwards, 2001
Paul Eloe, 1980
Bob Gorton, 1969
Aparna Higgins, 1984
Peter Hovey, 2001
Muhammad Islam, 1985
John Kauflin, 1966
Becky Krakowski, 2000
Ruihua Liu, 2004
Joe Mashburn, 1981
Harry Mushenheim, 1965
Shirley Ober, 1977
Darren Parker, 2001
Youssef Raffoul, 1999
Paula Saintignon, 1983
Gerry Shaughnessy, 1967
Qin Sheng, 2001
Les Steinlage, 1969

Part Time Faculty

Cheryl Edelmann, 1999
Robert Finnegan, 1985
Steve Fuchs, 2005
Joe Huelsman, 2003
Karen Mickel, 1992
Scott Mitter, 2001
Jane Nesbit , 2005
Betty Schneider, 1989
David Tsui, 2005

Professors Emeriti

Stanley Back, 1998
Bill Friel, 1999
Tom Gantner, 2001
Jack McCloskey, 2001
Jerry Neff, 1999
Richard Peterson, 1998
Ben Rice, 1998
Carroll Schleppi, 2001
Ralph Steinlage, 2001
Jerry Strange, 1999

CITATIONS FOR RETIRING FACULTY

JOHN E. KAUFLIN, Ph.D.

John has lived most of his life in Dayton and he earned a baccalaureate degree in mathematics from UD in 1962. After earning a Master's degree at Michigan State University, he began teaching at UD in 1966. He took a leave of absence to complete a Ph.D. from Georgetown University and returned to the UD faculty in 1970.

Trained in partial differential equations, John served as the department's mathematical physicist. In addition to developing a broad teaching agenda in the undergraduate curriculum, he developed and delivered the applied mathematics curriculum that served the graduate programs in mathematics and engineering for twenty years. In recent years, his teaching interests have moved to the history of mathematics which he has enjoyed delivering to both secondary and middle school pre-service teachers. John has committed his vast service efforts to the university in the matters of student affairs and academic affairs. These efforts include ten years as faculty moderator for Math Club, service on the Student Life Council, the Academic Policies Committee, and the Basic Skills Committee.

All four of John's children, John, James, Jason, and Jane, have graduated from the University of Dayton. His spouse, Kathy, is retiring from teaching this year in the Vandalia Butler school system.

It is an honor to have served as John's colleague. He will long be remembered and admired for his persistence to ride a bicycle to campus in all kinds of weather. He currently lives in Vandalia. John, on a bicycle, in full rain gear, is an imposing figure. John, we wish you all the best as you now retire from a truly dedicated teaching career.

HAROLD G. MUSHENHEIM, Ph.D.

Harry earned a baccalaureate degree from UD in 1955. He taught for three years at Chaminade High School in Mineola, New York. He then studied mathematics at the University of Cincinnati and earned a Ph.D. in 1963. He taught for one year at Catholic University in Puerto Rico and joined the UD faculty in 1965.

Harry has been deeply involved in many and various pursuits during his tenure at UD. He was trained in classical analysis; he has continued to study algebra, number theory, and graph theory. He took a one-year leave of absence to study statistics at the University of Florida. With this breadth, he has taught throughout the entire undergraduate curriculum. Moreover, he has stepped up to help out at the graduate level with some difficult teaching assignments. Upon coming to UD, Harry was instrumental in the NSF Summer Institute for high school teachers and served as the director from 1969-1972. He served as Chair of the Department of Mathematics from 1972-1976. Beginning in 1989, he collaborated with **Aparna Higgins** to deliver a summer research experience for undergraduate students. They focused on graph theoretic topics. The Office of the Provost, through the leadership of Brother Stander, sponsored the first summer. NSF sponsored the next four summers and so, UD is home to one of the first NSF REU programs which are now so very popular.

Harry's spouse, Cecilia, will continue her service on the faculty of the Marian Library.

It is an honor to have served as Harry's colleague. His willingness to serve and his quiet leadership will be missed. It is refreshing to know that with the building of the new PAC, Harry will not be a stranger to UD. Harry, we wish you all the best as you now retire from a truly dedicated teaching career.

AWARD CITATIONS

Aparna W. Higgins receives the **Deborah and Franklin Tepper Haimo Awards for Distinguished College or University Teaching of Mathematics.** The citation notes:

Aparna Higgins is one of the dynamos of the U.S. mathematical community. Her ease with and genuine connection to students is remarkable; her dedication to teaching and mentoring is recognized by colleagues near and far. At the University of Dayton, where she has been for 20 years, she has developed several new courses, and "she is fearless to incorporate new pedagogical strategies into the classroom." She teaches with passion and high expectations, and her students respond, acknowledging her nurturing interest that extends far beyond classroom and graduation. Her tireless service to the Honors Program (directing research of 11 honors students) and organization of undergraduate mathematics conferences has had a profound impact. In the larger mathematical community, she has given generous time in serving on the MAA Student Chapters Committee, the MAA Subcommittee for Research by Undergraduates, and in co-directing Project NExT.

Eugene Steurle receives the **University of Dayton 2004 Distinguished Alumnus Award.** https://alumni.udayton.edu/2004alumniawards.asp

Eugene Steuerle (68) "has forgotten more about taxes in the last 15 seconds than most of us will ever know," wrote Newsweek business columnist Robert J. Samuelson in May. He also suggested that every member of Congress study Steurle's most recent book, Contemporary U.S. Tax Policy.

The mathematics graduate was the original organizer and coordinator of the U.S. Department of treasury study that led to the Tax Reform Act of 1986, perhaps the most significant reform of the U.S. income tax. Its significance, Stuerle said, lay in "getting rid of many preferences, making the system less distortive, and helping to deal with the reduction in economic growth that was arising from the increased shifting of scarce saving into the tax shelters of that day."

Having served in the Treasury Department under four presidents, Steurle is now a senior fellow at the Urban institute, co-director of the urban-Brookings Tax policy Center and columnist for Tax notes, as well as the author or editor of 11 books, more than 150 reports and articles and more than 50 Congressional testimonies or reports.

FACULTY ACTIVITIES

Atif Abueida co-authored the paper, "Multidecompositions of the complete graph," (with Mike Daven) Ars Combinatoria, 72, 2004, 17-22. Atif is the Principal Investigator on a second award from the Ohio Board of Regents and he will spend July working with middle school in-service teachers on "Problem solving with critical thinking with discrete mathematics, K-8." He gave colloquia presentations at the Stevens Institute of Technology and at Mount Saint Mary College in November.

Wiebke Diestelkamp was promoted to the rank of Associate Professor. The new rank is effective August 16, 2005. Wiebke authored the article, "Parameter inequalities for orthogonal arrays with mixed levels," Designs, Codes, and Cryptography, 33 (2004), 187-197, and she co-authored, "On the degree of local permutation polynomials," xith **Stephen Hartke** (99) and **Rachael Kenney** (99, 00), Journal of Combinatorial Mathematics and Combinatorial Computing, 50 (2004), 129-140. She served as co-organizer with **Aparna Higgins** for this year's Mathematics Events Day. This year's events included *Conversations among Women in Mathematics*, the Schraut Memorial Lecture, and 21st Biennial Alumni Seminar. To support these events, Wiebke and Aparna wrote successful grant proposals to the Mathematical Association of America/Tensor Foundation and the Association for Women in Mathematics.

Shannon Driskell authored the article, "Students' strategies for fair shares," Mathematics Teaching in the Middle Grades, 10(3), 132-135. Shannon worked closely with **Becky Krakowski** to develop the curriculum and the proposal for a new Master's program in mathematics education. The program was approved by the Board of Trustees in January 05 and the program was approved by the State of Ohio in April 05. The initial entry class will begin in June 05. Shannon is an editor for the "Tech Tip" column in the National Council of Teachers of Mathematics *Mathematics Teacher* journal. She invites submissions from you in-service teachers out there. She can be reached at Shannon.Driskell@notes.udayton.edu.

Stephanie Edwards co-authored the paper, "Extreme curvature of polynomials",(with Russell A. Gordon) American Mathematical Monthly, 111 (10), 2004, 890-899. She also co-authored an article for the DIMACS Educational Module Series, http://dimacs.rutgers.edu/Publications/Modules/moduleslist.hmtl. She delivered a colloquium at Wright State University in September and she spoke at the Summer Undergraduate Mathematical Science Research Institute at Miami University..

Paul Eloe co-authored "A note on quasilinearization for impulsive systems" (with S.G. Hristova), Dynamics of Continuous and Discrete Impulsive Systems, 11 (1), 2004, 133-147; "Approximating crossed symmetric solutions of nonlinear dynamic equations via quailinearization (with **Q. Sheng**), Nonlinear Analysis, 56 (2004), 253-272; "Maximum principles for a family of nonlocal boundary value problems," Advances in Difference Equations, 3 (2004), 201-210.

Aparna Higgins delivered an MAA Invited Address on "Pebbling Results by Undergraduate Researchers" at the Providence MathFest in August, 2004. She delivered minicourses on how to get students involved in undergraduate research in Providence and in Atlanta at the joint winter meetings, she delivered a workshop on teaching mathematics in middle school curriculum for pre-service teachers at Bowling Green State University, and she spoke at the Carleton College Summer Mathematics Program for Women.

Pete Hovey co-authored a paper (with **Al Berens** (55)) "Aging aircraft maintenance planning," Proceedings of the 2004 U.S. Air Force Aircraft Structural Integrity Program Conference. He continues to collaborate with researchers at UDRI and currently serves as one of the PIs on a successful grant with UDRI.

Muhammad Islam co-authored the article, "Boundedness and stability in nonlinear Volterra integrodifferential equations," (with **Muhammad Mia** and **Ghazi Al-Eid**), Pan-American Mathematical Journal, 14 (2004), 49-63. This article is the result of the Mathematics Clinic project of Muhammad and Ghazi who both graduated in May, 2004.

Becky Krakowski serves as Principal Investigator and co-Director with Beth Basista of Wright State University to deliver Mathematics and Physical Science Professional Development Project for Grades 7-11 Teachers. This program has the support of $200,000 from the Ohio Board of Regents and now continues this collaborative effort into a 3rd year. Becky served as the principal author and developer of the new Master's in mathematics education program. She will serve as the program director for this graduate program as well.

Ruihua Liu began serving in the Department of Mathematics in August, 2004. He earned a Ph.D. in optimal control in China and served as an associate professor and Director of the Computer Integrated Manufacturing Systems in the Department of Computer & System Sciences at Nankai University in Tianjian, China before going to the University of Georgia to earn a Ph.D. in mathematics with emphasis in finance. He worked as a Senior Quantitative Analyst on Wall Street for two years and returned to academics on a post-doc in the School of Business at the University of Texas-Dallas. He is in the process of helping us develop the new Master's program in financial mathematics. He is developing new curricula in methods of financial mathematics and stochastic processes. He was invited by **Tom Britt** (85) to serve as one of the plenary speakers at the 2004 Tri-State Actuarial Club meeting in Columbus in September, 2004 and he spoke on "Optimal selling rule based on regime-switching model."

Youssef Raffoul authored or co-authored 6 articles that appeared in 2004. These are: "Periodicity in general delay nonlinear difference equations using fixed point theory," Journal of Difference Equations and Applications, 10 (2004), 1229-1242; "Stability in neutral nonlinear differential equations with functional delays, using fixed point theory," Mathematical and Computer Modeling, 40 (2004), 691-700; "Positive solutions of three-point nonlinear discrete second order boundary value problem," (with R. Ma), Journal of Difference Equations and Applications, 10 (2004), no, 2, 129-138; "Classification and existence of positive solutions of systems of Volterra nonlinear difference equations," (with W. Li) Applied Mathematics and Computations, 155 (2004), 469-478; "Three-point boundary value problems on time scales," (with A. Peterson and C. Tisdell) Journal of Difference Equations and Applications, 10 (2004), no. 9, 843-849; "Eigenvalue problems for three-point boundary value problem on a time scale,"(with **E. Kaufmann** (91)) Electronic Journal of Qualitative Theory of Differential Equations, 2 (2004), 1-10. Youssef delivered a colloquium presentation at Ohio University during the summer, and he recently traveled to Lafayette, Louisiana to deliver a colloquium at the University of Louisiana.

Gerald Shaughnessy accepted an invitation to serve on the Exam 1 Committee of the Society of Actuaries. He also co-authored an article (with **Pete Hovey**) on "Analysis of residual strength of metals in a corrosive environment," that was presented at the annual meeting of the American Statistical Association.

Tim Sheng authored two papers that appeared in 2004. These are: "Approximating crossed symmetric solutions of nonlinear dynamic equations via quailinearization (with **P. Eloe**), Nonlinear Analysis, 56 (2004), 253-272; "Dynamic equations on time scales- a challenge to the traditional computational concepts," Proc. CCCT'04, 5 (2004), 317-322.
Tim has added a new challenge to his professional agenda. With generous support from a Teaching Innovation grant through the learning teaching Center, he has designed and is implementing a new course in Computational Finance. This course supports the new Master's program in financial mathematics and is currently offered as MBA 623. MBA students with concentration in finance can take this course as an elective finance course. He is currently teaching the course to 4 MFM students and 5 MBA students. In addition, he has built in long distance teaching capabilities. One of the MFM students is living in Columbus working as a

summer intern with Nationwide. Tim also won a Summer faculty Research Award through the Air Force for 2005.

UNDERGRADUATE ACTIVITIES

Math Club opened the year with a picnic on Saturday, September 18 at John Bryan State Park where they ate subs and hiked. In October, Math Club held the Pi Mu Epsilon Banquet and membership certificates were given to the April 2004 inductees. **Mary Hickey, Kolleen Hyrb,** and **Katie Kennedy** attended the annual Pi Mu Epsilon Conference at Miami University in October. In December, Math Club co-hosted the End-of-the-Semester Christmas Party with the department faculty. This is a potluck luncheon during the finals week. Math Club introduced a new activity this year, Cinemath: Monthly Math Movies. This winter, Math Club hosted "A Beautiful Mind," "Sneakers," and "Infinity."

Matt Kocoloski, Brian Meredith, and **Eva Pillossof** participated in the sixty-fifth annual **William Lowell Putnam Mathematics Competition** in December.

Two faculty members and many students spent late Friday afternoons working problems in mathematics. **Darren Parker** worked weekly with the students in preparation of the Putnam exam. **Stephanie Edwards** worked weekly with undergraduate and graduate students including **Paul Abdelnour, Ran Huang, Liz Linder,** and **Masako Yatsuki** on problems in preparation for the Actuarial Exam (Exam P).

A team of **Patrick Coate, Matt Kocolowski**, and **Jeremy Lynch** competed in this year's **COMAP Mathematics Modeling Competition**. They earned an honorable mention. The team presented a poster at the Stander Symposium and they presented their work to the faculty in the final colloquium of the year. The team constructed a model to determine the optimal number of tollbooths to deploy in a barrier-toll plaza along heavily-traveled toll roads such as the Garden State Parkway.

The third annual **Integration Bee** was held in conjunction with this year's Stander Symposium. More than 55 students participated this year. First place went to **Edward Timko**, second place went to "The Odd Functions": **Kelli Ashbrook, Lindsey Greuter,** and **Emily Seikel**, and third place went to "Last Place": **Aaron Gray, Andrew Miller,** and **Zac Steintorf.**

Math Club sponsored the **9th annual High School Mathematics Competition**. As usual this is an impressive undertaking. This year, **Joanne Sklodowski,** President of Pi Mu Epsilon, coordinated the efforts to host the competition that included 44 teams of 132 students from 8 high schools. The students who helped out in preparation of the contest included: **Paul Abdelnour, Anthony Cash-Patterson, Adam Doenges, Jason Inkrott, Ben Johnson, Patrick Johnson, Matt Kocoloski, Sarah Poe, David Prier,** and **Sandra Venable.** These same students and **Joe Beumer, Rob Broderick, Nancy Buck, Patrick Coate, Robert Dence, Alex Giffen, Rick Henfling, Adam Hicks, Katie Kennedy, Matt Olding,** and **Pam Smith. Darren Parker** spoke to the students on "The Mathematics of Games." The Department of Mathematics, UD Food Services, United Dairy Farmers, Panera Bread, and DayAir Credit Union co-sponsored the event. Joanne was an extremely good sport. This competition has been one of the best kept secrets on campus. Joanne entered a poster in this year's Stander Symposium to help with the competition's visibility.

In April, **Robert Dence, Karen Eckberg, Christian Hampson, Matthew Kocoloski,** and **Sarah Poe** were inducted into **Pi Mu Epsilon**, the national mathematics honorary society.

Next year's student officers are:

MAA/Math Club President	**Mary Hickey**
Pi Mu Epsilon President	**Matt Kocoloski**
MAA/Math Club/PME Vice President	**Patrick Johnson**
MAA/Math Club/PME Secretary	**Sarah Poe**
MAA/Math Club/PME Treasurer	**Paul Abdelnour**

THE BRO. JOSEPH W. STANDER SYMPOSIUM & HONORS CONVOCATION

The 17th annual **Brother Stander Symposium** was held with some redevelopment in an effort to include the entire campus community. This year, it was an all-day event (it actually started on the preceding evening); regular classes were not held so that the entire campus community could participate. Poster sessions were open this year to include graduate students, and other sessions were organized to engage students not involved in research**.** For example, **Stephanie Edwards** hosted the 3rd annual Integration Bee competition in the early afternoon. In preceding years, this competition was held in the evening. We served lunch (pizza, chips, and pop) to 100 or so students and then moved to the lecture hall to enjoy the competition. As another example, **Aparna Higgins** hosted a noontime session on Mathematics through Origami. About twenty students participated in this session. Both the competition and the session attracted students from a wide variety of disciplines.

Students participated actively in this year's Poster Session. The wide range of topics illustrates the many interests and double majors of the current group of students.

Undergraduate:
Kevin Berridge and **Benjamin Lee,** *Building a Beowulf Parallel Processing Cluster;*
Angela Carracciolo, *Assessing the Effectiveness of Differentiated Instruction Using Recorded Observations and the NMSA Standards for Effective Middle Schools;*
Patrick Coate, Matt Kocoloski, and Jeremy Lynch, *Modeling Traffic Flow through a Toll Plaza;*
Benjamin Johnson, *Laser trapping of Rubidium Atoms;*
Patrick Johnson, *Energy Consumption Levels a Problem;*
Ruth Hinde, *The Importance of foreign Exchange Experiences for the Linguistic and Cultural education of American Youth;*
Stephanie Lindsey, *What Method of review is Most Effective in Preparing Students for Assessment?;*
Theresa O'Neil, *Multidecomposition of the Complete Graph into Cycles and Claws* (paper joint with **Atif Abueida** has been submitted to the Bulletin of the Institute of Combinatorics and its Applications for publication)
Emily Poles, *Determinants of Infant Mortality;*
Joanne Sklodowski, *Math Club Competition;*
Pam Smith, *Cleveland Indians' Home Game Attendance: An Econometric Study*.

Graduate:
Srikrishna Chirumamilla, *Boundary Layer Phenomena and Perturbation Methods in Non-Homogeneous Differential Equations;*

Christian Hampson, *Multidecomposition of the Complete Graph and Various Leaves;*
Ernest Yankson, *Stability in Delay Difference Equations;*
Chunlei Zhang, *Convergence Analysis and Applications of Surrogate Optimization;*

AWARDS

The 2005 Faculty Award for Excellence to a graduating student has two recipients this year, **Benjamin Johnson** and **Pamela Smith**. Benjamin double majored in mathematics and physics. Pamela majored in applied mathematical economics.

The 2005 Pi Mu Epsilon Award recipient is **Patrick Coate**. This is an award for excellence among second year students in mathematics.

The 2005 Brother Joseph W. Stander, S.M., Award of Excellence in Mathematics Education recipient is **Stephanie Lindsey.** This award for excellence goes to a graduating senior in the teacher licensure program with a principal teaching field in mathematics.

The 2005 Nora Duffy Award recipient is **Sandra Venable.** This award recognizes a reentry student who has overcome significant obstacles in order to complete a college degree.

GRADUATE ACTIVITIES

Christian Hampson, Ernest Yankson, and **Chunlei Zhang** earned MS degrees in applied mathematics in 2004-05 academic year. For their Math Clinic projects: **Christian** worked with **Atif Abueida** and studied multidecomposition of the complete graph with various leaves. This work has been submitted to the Australasian Journal of Mathematics for publication. **Ernest** worked with **Muhammad Islam** and studied boundedness and stability for nonlinear delay difference equations employing fixed point theory. This work is submitted for publication to the Journal of Difference Equations and Applications. **Chunlei** worked with **Qin Sheng** and performed a qualitative study of the line search method and surrogate optimizations. An article, "Notes on the convergence and applications of dynamic surrogate optimization," has been accepted for publication in the Journal of Discrete and Continuous Dynamical Systems. Christian will begin a Ph.D. program in mathematics at Colorado State University. Ernest will begin a Ph.D. program in statistics at Kent State University. Chunlei will continue his studies as a Ph.D. candidate in electrical engineering at UD. He is scheduled to defend his dissertation next spring.

RECENT GRADUATE ACTIVITIES

Ruth Hinde will attend a program for teachers at the University of Notre Dame this summer. Beginning this fall, she has a two year appointment teaching in St. Petersburg, Florida and living in community.

Kolleen Hryb will be teaching high school mathematics at Northmont High School in Englewood beginning this fall. Kolleen spent the winter term at Northmont student teaching..

Jason Inkrott will be teaching high school level mathematics in the Dayton area.

Ben Johnson will begin a Ph.D. program in physics at Washington University in St. Louis.

Liz Linder is employed as an Operations Research Analyst at Wright Patterson Air Force Base.

Stephanie Lindsey will teach high school mathematics in the Columbus area.

Theresa O'Neil will begin a graduate program in economics at the University of North Carolina at Greensboro.

Pamela Smith will begin a graduate program in economics at Carnegie Mellon University in the fall term.

ALUMNI NEWS

Terrence Stretch (67) retired following 35 years in general business and information technology consulting and in information technology, financial, and operations management. Terry visited UD recently; he met with members of UDRI. He has developed IT capabilities to assist students who have serious communication disabilities. He met with UDRI to open the discussion for developing these and related concepts collaboratively. He met with program faculty of the new Master's in financial mathematics program as well and toured the new Schraut Lecture Room and other new and renovated spaces in the Science Center.

C. Eugene Steurle (68) was awarded the 2004 Distinguished Alumnus Award on Friday September 17, 2004. Eugene was the original organizer and coordinator of the U.S. Department of the Treasury study that led to the Tax reform Act of 1986. He has served in the Treasury Department under four presidents and he currently serves as a senior fellow at the Urban Institute and co-director of the Urban-Brookings Tax Policy Center. He has authored or edited 11 books, including his most recent book, Contemporary U.S. Tax Policy. He also serves as a columnist for Tax Notes. A complete citation can be found at https://alumni.udayton.edu/2004alumniawards.asp.

Bill Scharf (68) and **Larry Woerner** (76) were in town on the weekend of December 3 to see the Flyers. Each serve on the Advisory Board of the Master's in Financial Mathematics (MFM) program. The timing was excellent as they joined us for a dinner/meeting of the Board members, faculty, and students of the new MFM program.

Ed Hinde (70) joined this year's celebration at the Graduation Banquet at Neil's heritage house. Ed's daughter, **Ruth**, was one of this year's graduating seniors. Ruth double majored in mathematics and German.

Jane Pendergast (74) delivered the 5th Kenneth C. Schraut Memorial Lecture. Jane is a biostatistician on the faculty at the University of Iowa where she is currently Director of the Center for Public Health Statistics.

Paul Judd (82) is on the faculty at Drake University teaching statistics and actuarial science. He chairs a national exam committee of the Society of Actuaries. Paul recently visited UD following a meeting in Columbus.

Greg Goodhart (85) has earned promotion to Professor at Columbus State Community College. Greg is in the Mathematics Department and regularly brings students with him to attend the Mathematics Events Day.

Marla (Prenger) Gross writes: "Do give Dr. Mushenheim my regards, congratulations, and best wishes for much enjoyment in retirement. He taught me Linear Algebra, and gave me a great foundation for all the matrices I deal with in statistics (they are EVERYWHERE)."

Eric Kaufmann (91) earned promotion to the rank of Professor at the University of Arkansas at Little Rock. Eric took a sabbatical leave during the fall term of 2004 and kept an office at UD. He worked primarily with **Youssef Raffoul** on joint research projects.

Barbara (Buck) Kowalcyk (91) serves as an advocate for food safety. She participated in the 2004 Biennial Alumni Seminar and hosted a table that focused on service-based career opportunities for students. She returned to campus two weeks later and participated in Hunger Awareness Week, sponsored by the Center for Social Concern. She introduced Eric Schlosser, author of *Fast Food Nation,* the symposium's keynote speaker. Earlier that day she delivered a colloquium to students and faculty in the Department of Mathematics entitled, "An analysis of FSIS statistical practices regarding foodborne pathogens."

David Jessup (92) married Margaux Locklear in May 2005. He works for US News & World Report as a programmer/analyst.

Taan El-Ali (93) is a Professor of Electrical Engineering at Benedict College in Columbia, South Carolina.

Kristen Lampe (93) has been approved for tenure and promotion beginning this fall at Carroll College in Wisconsin. Kristi has accepted our invitation to serve as a plenary speaker at this year's Undergraduate Mathematics Day.

Dan Steck (95) was on campus during April 8-9 and served as a plenary speaker at the Ohio Section of the American Physics Society. Dan earned his Ph.D. in physics from the University of Texas at Austin in 2001. He held a three-year postdoctoral fellowship at the Los Alamos National Laboratory. He currently serves as an assistant professor in the Oregon Center for Optics and the Department of Physics at the University of Oregon.

Stephen Hartke (99) earned his PhD in mathematics from Rutgers University. He spent this past year at the University of Illinois, Urbana-Champaign where he began serving a three-year post-doc appointment. Stephen visited campus in march and delivered a colloquium to the faculty.

Geoff Dietz (00) successfully defended his dissertation and will earn his Ph.D. in mathematics at the University of Michigan. He worked under the guidance of Mel Hochster and wrote a thesis titled "Closure Operations in Positive Characteristic and Big Cohen-Macauley Algebras." He recently accepted a three year post-doc position at the University of Oklahoma. His wife, **Amber** (CHM, 00) will defend her Ph.D. dissertation in chemistry in June. They both attended the joint mathematics meetings in Atlanta, 2005.

Bob Phipps (01) visited campus in March. He is working as an actuary in Chicago.

Michelle Franz (02) will complete an MA in mathematics at John Carroll University during this summer. She passed her oral examination and is writing an essay "Primitive Pythagorean Triples". She completed her first year of teaching geometry at Riverside high school in Painesville Township, Ohio.

Kari Blaeser (03) works as an actuary in Cincinnati.

Carrie Herman (03) teaches mathematics at Centerville High School. Carrie is a NASCAR enthusiast was chosen as the Nextel Fan of the week for April 4. She employs NASCAR applications in the geometry and algebra classrooms with racetrack designs and data analysis.

Scott Brockman (04) is employed in Cincinnati at Mercer Human Resource Consulting as an Actuarial Analyst.

Megan Gorndt (04) lives in Fort Wayne and works as an account manager with Hylant Group.

Gayatri Gunda (04) will work with Upward Bound -- a program for high school kids on a college campus during the summer. She will attend Harvard Dental School beginning this fall.

Peri Shereen (04) has spent the past year in Nantes, France and she has worked as an English Language Assistant. She will return to the US following some travel to Egypt.

UD LUNCH IN ATLANTA

We had a great time at the winter meetings in Atlanta and we had a great time at the UD luncheon. Lunch included: **Wiebke Diestelkamp**, **Amber Dietz** (00)**, Geoffrey Dietz** (00), **Paul Eloe**, **Bill Friel**, **Stephen Hartke** (99), **Aparna Higgins**, **Colleen Hoover** (91), **Eric Kaufmann** (91), **George Lang** (66), and **Bob Lewand** (66). The Winter meetings in January 06 will be in San Antonio. We will look forward to getting together again and we will keep you posted by e-mail as the time approaches. **Bob Buck** (69) and **Joe Diestel** (64) also attended the winter meetings and were unable to join us for lunch.