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Math Department Newsletter, 2004

University of Dayton. Department of Mathematics

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**MATHEMATICS DEPARTMENT
NEWSLETTER
May 2004**

CHAIRPERSON'S MESSAGE

Another year has come and gone. And it has been a busy year.

Phase Two of the Science Center (SC) construction and renovation is complete. Last summer, we first moved to temporary space (for some of us that meant home) and then we moved back again into almost completely renovated space in late August. The fall term was hectic. We had a large incoming class, renovation was almost complete, and we went through the usual growing pains of growing into renovated space. Most of us are in renovated office space (the main office is now on the third floor). Most noteworthy for mathematics is the new **Schraut Memorial Lecture Hall, SC 323**.

Thanks to all of you who made original contributions for this lecture space; I think you will be pleased when you come to visit. We are. The space is really very nice. SC 323 has the same square footage as either the large physics lecture hall or the large biology lecture hall. Biology or physics will seat 70-80. We seat 48. We have tables and chairs, space, multimedia and chalkboards. The classroom is excellent for the purpose of group work or facilitation. All the seats for students are hardwired and the classroom is excellent for the use of software or internet applications. The wall space is primarily covered by chalkboards and so the classroom is excellent for work at the board. It is remarkable how well the room accommodates a variety of teaching styles. My problem as chairperson is to satisfy all the requests to teach there.

Another nice feature of the renovation will be an auditorium. We have yet to use it but the 5th Schraut Memorial Lecture will be held in this auditorium on November 6, 2004 (see below). We are slowly discovering other nice new features of the Science Center. New construction joins Sherman and Wohlleben Halls. There are newly equipped classrooms and seminar rooms in the new construction. We are using much of that space this summer with some classes and workshops.

On Saturday, November 1, 2003, we held the 4th Annual Kenneth C. Schraut Memorial Lecture. You can read more about this below; **Robert Lewand** (66) gave an excellent presentation on random walks. Following the 3rd Schraut Lecture, **Paul Campbell** (67) noted that something was missing; we needed something to give Doc more of a presence at the annual lecture. Paul then graciously donated resources for a portrait of Doc. We had a lot of fun with that this year. We contacted a local artist, Tim Langenderfer. Doc's daughter, **Marilyn Szorc**, sent photos and even came to Dayton with a box of Doc's ties

and stories to share with Tim. We unveiled the portrait on November 1, prior to Bob's lecture. Marilyn and her family returned for the unveiling. Tim Langenderfer said a few words; it was very appropriate that he did. Tim lives in Kettering, not far from where Marilyn grew up and not far from Altar High School. His studio is at his home. When he agreed to do the portrait, he thought, "Paint a mathematician? Sounds a little dull, but why not?" Tim came to understand Doc's impact. His Monday night football pals were over once. At halftime they wanted to see what Tim had going on. A sketch of Doc was visible; one of his pals saw the sketch and opened up with some Doc stories. A client was at Tim's studio and the portrait was visible. The client opened up with Doc stories. One evening a couple was taking a walk and saw the portrait through the studio window. They rang the doorbell and they opened up with Doc stories. Tim was truly glad that he agreed to paint the portrait of a mathematician.

The portrait hangs in the Schraut Memorial Lecture Hall and it will be on display at future Schraut Memorial Lectures. Thanks, Paul, for the idea and for the contribution, thanks, Tim, for the wonderful portrait, and special thanks, Marilyn, for sharing so much of your time and memories.

We also held Undergraduate Mathematics Day at the University of Dayton on Saturday, November 1. Please note that we host an annual event associated with the Schraut Lecture. In even years we will continue the Biennial Seminar; in odd years, we will host an undergraduate mathematics conference. Thanks to **Aparna Higgins** and **Wiebke Diestelkamp**, the conference is off to a roaring start. We had two invited lectures, **Bob Lewand** and **Chikako Mese** (91), and 21 contributed lectures. Eight UD students presented talks. We had student contributors from UC Berkeley, Cornell, Penn State, and others, and we had high school student contributors. We have also decided to publish a refereed proceedings associated with the conference. Volume 1 became available in May 2004 and can be found at <http://www.udayton.edu/~mathdept/EPUMD/EPMUD.htm>

We have been working for more than two years to bring a new professional master's program in financial mathematics on board. On April 30, 2004, we received preliminary permission from the Ohio Board of Regents to admit students beginning August, 2004. You can read more about this program at <http://academic.udayton.edu/FinMath/> We successfully filled a position for a financial mathematician. Dr. Ruihua Liu earned a Ph.D. in financial mathematics from the University of Georgia; he will join us beginning in August 2004. There are two key features to the program. It is multi-disciplinary; we have worked with 3 members of the Finance department to develop and now deliver this curriculum. The second is that we are making real effort to connect with local and regional corporations as partners. I'd like to give special thanks here to **Tom Britt** (85), **Bill Scharf** (68), and **Jim Schoen** (67) who serve on the Board of Advisors for the program. **Tom Britt** joined us on April 30 in Columbus when we met with the Ohio Board of Regents.

This time next year, I hope to copy and paste the above paragraph and replace financial mathematics with mathematics education. We are proposing a master of science in mathematics education for in-service 9-12 teachers. This program will be a 3 year

summer program. Currently the program consists of 15 credit hours of mathematics content, 9 credit hours of advanced pedagogy, and 6 credit hours related to quantitative research methods in mathematics education. We have just initiated the process for approval with the Ohio Board of Regents.

As usual, please contact me if you see anything misreported. Always feel free to send along ideas and suggestions; to keep everyone informed (students, faculty, alumni) we use the departmental web page <http://www.udayton.edu/~mathdept/>

Thanks.

Paul Eloë

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 Undergraduate Mathematics Day at the University of Dayton, Integration Bee, the High School Mathematics Competition, student travel to the Ohio Section of the MAA meeting, graduate student travel to a conference in Atlanta, and the painting of Professor Schraut's portrait. 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 \$5,685.00 to the Department of Mathematics during 2003:

Timothy P. Bahmer (91)	Mr. & Mrs. William J. Huster (78)
Mr. and Mrs. Stephen C. Bergeon (83)	Ms. Pamela Schultz Kinkade.
Gregory and Julie Ruschau Bishop (86)	Jane F. Pendergast (74)
Mr. and Mrs. Neil A Bitzenhofer (69,72)	Mr. & Mrs. Edward Ray
Gregory Campbell (70)	Mr. & Mrs. John Scheidt (66)
Paul Campbell (67)	Mr. & Mrs. Curtis Schultz (01)
Kennon R. and Mary Anne Fahy Copeland (75)	Mr. & Mrs. Richard G. Segers (50)
Dr. and Mrs. Franklin Demana (60)	Mr. & Mrs. Randall J. Smith (77)
LTC.and Mrs. Donald E. Duckro (84,90)	Mr. Robert W. Springer (77)
David (93) & Cheryl (92) Prenger Edelmann	Mr. and Mrs. Ralph C. Steinlage (62)
Paul and Laura Schneider (84) Eloë	Julie Anne Suwalski (92)
Mark A. Goldschmidt (67, 74)	Mr. Kevin A. Thomas (76)
Robert E. and Judy Buechele Goubeaux (58, 69)	Daniel C. and Susan E. Thompson (81)
Mr. and Mrs. Michael J. Hartke (66)	

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

Eli Lilly & Company

The NCR Foundation

Towers Perrin Co.

THE KENNETH C. SCHRAUT MEMORIAL LECTURESHIP FUND

Thank you also for your generous support of the Kenneth C. Schraut Memorial Lectureship Fund. This past fall, **Bob Lewand (66)** (see below) delivered the **4th Kenneth C. Schraut Memorial Lecture**. The Memorial Lecture has evolved into an annual event. Every second year, we will associate the lecture with the Biennial Alumni Seminar. In alternate years, we will associate the Lecture with a student conference. We are currently in the planning stages for Saturday, November 6, 2004. Please see <http://academic.udayton.edu/MathEvents/> for continual updates with respect to the Lecture. Thanks. The following individuals donated an additional \$3,685.00 to the endowment during 2003:

Philip & Kathy Kolesar-Aftoora (69)
Ms. Lois Scaife and Mr. Eugene D. Bolzan (69)
Robert E. and Karen Schultz Lewand (66)
Mr. and Mrs. James R. Peters

Mr. & Mrs. William J. Scharf (68)
C. Eugene Steuerle (68)
Ronald & Pamela Steinkirchner (76)

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

THE 4TH KENNETH C. SCHRAUT MEMORIAL LECTURE and UNDERGRADUATE MATHEMATICS DAY AT THE UNIVERSITY OF DAYTON

Undergraduate Mathematics Day was held for the first time on Saturday, November 1, 2003. In addition to funds from you, our alums, **Aparna Higgins** received a grant from the MAA under its NSF Regional Undergraduate Mathematics Conference program. Dr. Panagiotis Tsonis, Bro. Mann Chair of the Sciences, graciously lent his support to the conference with funds and by providing the opening welcome. The event was a celebration of undergraduate mathematics in all forms - research, learning, teaching, history, and was an opportunity for undergraduate mathematicians to meet and network with more established mathematicians. About eighty people attended the conference. There were twenty-one contributed papers, fifteen of which were by undergraduate students, two by high school students, one by a graduate student, and the rest by high school or college faculty. Undergraduate students came from as far away as Cornell, Atlanta and Berkeley, and from various parts of Ohio and spoke on investigations they had conducted on topics such as the Cantor set, graph theory and quantum computing. We had a sit-down luncheon, for which we seated faculty and students in a way that participants got to meet new people. We had plenty of time built in during the day for socializing and networking. The two invited addresses were informative and delivered with style and energy. We are indebted to **Robert Lewand (66)** of Goucher College who presented the **Fourth Annual Schraut Memorial Lecture**, "How not to get lost while on a random walk," illustrating his fifty-minute talk with a charming computer program. We thank **Chikako Mese (91)**, now at Connecticut College (see Alumni News for an update), for her talk on "Curvature" which set the right tone for the conference as she worked with the audience in explaining how to quantify curvature for three-dimensional spaces. Her use of maps and basketballs and descriptions of historical means of measuring the curvature of the earth created an exciting beginning to the day.

After lunch, the Department invited the conference participants to a half-hour event of the unveiling of a portrait of Doc Schraut. **Marilyn Scorz** (nee Schraut) (76) and her family were in attendance, as was the artist. It was a touching and tender interlude in an event that we believe embodied the kinds of activities and collaborations between students and teachers and former students of mathematics that Doc seemed to enjoy arranging. **Karen Lewand** (nee Schultz) (67) joined us for the ceremony and much of the day's events as well.

The presenters of talks at the conference were invited to submit articles based on their presentations for refereed publication in electronic proceedings of this conference. The proceedings are now published in Volume 1 of the Electronic Proceedings of Undergraduate Mathematics Day 2003.

The program, the abstracts, pictures, the Proceedings and other details of the conference can be found by clicking on the Undergraduate Mathematics Day 2003 link on the web page <http://academic.udayton.edu/MathEvents/>. Please join us for the next one in 2005.

INVITATION TO THE 21ST BIENNIAL ALUMNI SEMINAR, THE 5TH ANNUAL SCHRAUT LECTURE, AND CONVERSATIONS AMONG WOMEN IN MATHEMATICS

Please mark your calendars for Saturday, November 6, 2004, the date of this fall's mathematics event at UD. We are still working out details, but the general plan for the day is described here. The entire day is designed so that participants will be able to make connections and interact with mathematics graduates who are at various stages of their careers. We will have the traditional **Biennial Alumni Seminar** in the afternoon, to which we hope you will come and share information of your profession with our current undergraduates. We look forward to seeing many of you – the members of our faculty look forward to the chance to catch up with you and renew our knowledge of what can be done with a degree in mathematics, and our undergraduates prefer to hear about career options from you directly rather than through us. The **5th Annual Kenneth C. Schraut Memorial Lecture** will be delivered that afternoon by **Jane Pendergast** (74) Associate Professor and Director of the Center for Public Health Statistics in the Department of Biostatistics at the University of Iowa.

During the morning, we will host *Conversations*. Alumnae of the Department of Mathematics, current undergraduate and graduate students from mathematics and allied disciplines at UD, the women faculty of the Department of Mathematics and female mathematics students from area high schools are invited to attend *Conversations*. The event will consist of a panel discussion on women in mathematics, focused in particular on the experiences of the panelists, followed by three parallel mathematics workshops and a luncheon. **Marjorie August** (91), Senior Software Engineer at General Dynamics Land Systems, **Teresa Dean** (nee Trimbach) (79), Senior Human Resource Manager at Procter & Gamble, **Kathleen Dietz** (71), mathematics teacher at Calvert Hall College High School, and **Jane Pendergast** (74) will be our panelists this year. **Wiebke Diestelkamp** and **Aparna Higgins** have received a Tensor Foundation grant from the Mathematical Association of America to defray some of the expenses, The Tensor Foundation awards grants to college or universities for projects designed to encourage

college and university women or high school and middle school girls to study mathematics. The Tensor Foundation awarded ten grants this year. In addition, Dr. Tsonis, the Bro. Mann Chair of the Sciences, has provided some financial support. Through **Pete Hovey** (75), the Dayton Chapter of the American Statistical Association has agreed to provide funds to obtain brochures on careers in statistics for the student participants. The rest of the funding is from restricted funds of the Department of Mathematics. We invite alumnae to participate in *Conversations*.

As we continue to plan this day, we will post details and registration on the Math Events web page at <http://academic.udayton.edu/MathEvents/> .

FACULTY UPDATE

Full Time Faculty

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

Part Time Faculty

Cheryl Edelmann, 1999	Joe Huelsman, 2003	Scott Mitter, 2001
Robert Finnegan, 1985	Karen Mickel, 1992	Betty Schneider, 1989

Professors Emeriti

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

FACULTY ACTIVITIES

Atif Abueida co-authored the paper, “Multidesigns for graph-pairs of order 4 and 5,” (with Mike Daven) *Graphs and Combinatorics*, 19 (4), 2003, 443-447. As reported in last year’s newsletter, Atif was accepted and participated in two separate DIMACS programs during the Summer, 2003. He is accepted to participate in this summer’s DIMACS Reconnect ’04 program. He will participate in a program that focuses on Computational Biology. In July, Atif will be busy working with middle school in-service teachers on “Problem solving with critical thinking with discrete mathematics, K-8.” Atif is the Principal Investigator on an \$85,000 award from the Ohio Board of Regents who challenge the sciences and mathematical sciences to deliver content to in-service teachers.

Wiebke Diestelkamp, with **Aparna Higgins**, has taken the role to lead the organization and implementation of the annual event that is associated with the Schraut Memorial Lecture. This year's event will be held on November 6, 2004 and will consist of the Schraut Lecture, the Biennial Alumni Seminar, and *Conversations among Women in Mathematics*. For this year's event, Wiebke and Aparna have won an MAA/Tensor Foundation grant to implement *Conversations among Women in Mathematics*. In March 2003, Wiebke delivered a colloquium presentation at Ball State University.

Shannon Driskell co-presented a paper with Suzanne Harper on "Implementing Performance-Based Technology Standards in Mathematics Education Courses" at the Association of Mathematics Teacher Educators (AMTE) conference in San Diego. They were invited to deliver that paper at the Society for Information Technology and Teacher Education (SITE) conference in Atlanta, GA. At SITE, they were then presented the National Technology Leadership Initiative: 2004 Mathematics Education Fellow award. At the National Council for Teachers of Mathematics (NCTM) conference in Philadelphia, Shannon and Suzanne presented a paper entitled: "Using Dynamic Geometry Software to Explore Topics in Mathematics History." Following the presentation, they were invited to write an article for "Convergence," MAA's new online history magazine. Shannon is co-PI (with Scott Sportsman of the College of Mount Saint Joseph) on a \$90,000 award from the Ohio Board of Regents to deliver "Hands-on geometry" to in-service 4-8th grade teachers during the summer.

Stephanie Edwards was an invited speaker at the Summer Undergraduate Mathematical Science Research Institute (SUMSRI) at Miami University in June 2003. She was also an invited speaker in a Special Session at the International Society for Analysis, its Applications, and Computation in Toronto in August 2003.

Paul Eloe co-authored several papers that appeared in 2003. These include: Notes on crossed symmetry solutions of the two-point boundary value problems on time scales (with J. Henderson and **Q. Sheng**) *J. Difference Equations and Appls*, 9, No.1 (2003), 29-48; Uniform asymptotic stability in nonlinear Volterra discrete systems (with **M. Islam** and **Y. Raffoul**) *Computers & Mathematics with Applications*, 45 (2003), 1033-1039; The quasilinearization method on an unbounded domain, *Proc. Amer. Math. Soc.*, 131, No. 5 (2003), 1481-1488; Sign properties of Green's functions for disconjugate dynamic equations on time scales, *J. Math. Anal. Appl.* 287 (2003), 444-454; A continuation of the discussion on cross symmetry of solutions (with **Q. Sheng**) *Dynamic Systems & Applications*, 12, No. 1 (2003), 99-114. He also wrote Chapter 8 in the book, *Advances in Dynamic Equations on Time Scales*, M. Bohner and A. Peterson, Ed., Birkhauser, Boston, 2003.

Aparna Higgins co-authored the paper "Minimum degree growth of the iterated line graph," (with **Stephen Hartke** (99)), *Ars Combinatoria*, 69 (2003), 275-283. She is also one of the inaugural authors in the Electronic Proceedings of Undergraduate Mathematics Day with the article "Pebbling on directed graphs," (with **Gayatri Gunda** (04), EPUMD, 1 (2003). This work was part of Gayatri's Berry Scholars thesis, making Gayatri Aparna's eleventh Honors/Scholars thesis student. Aparna continues to deliver invited

presentations. She delivered a colloquium talk to Grand Valley State University's REU program in July 2003, a Project NExT course at Mathfest in Boulder in August 2003, and she delivered two presentations at the Southern California Section NExT in Pomona in October 2003. She and Joe Gallian presented their MAA minicourse on undergraduate research at the Joint Meetings in Phoenix in January 2004. We are especially pleased and proud to announce that Aparna will deliver an MAA Invited Address at this summer's MathFest in Providence in August, 2004. In addition, she received a grant from the MAA as part of its NSF-funded Regional Undergraduate Mathematics Conference Program for Undergraduate Mathematics Day held in November 2003, and she and **Wiebke Diestelkamp** have been awarded a Tensor Foundation grant from the MAA for this year's *Conversations among Women in Mathematics*.

Pete Hovey is also an inaugural author in Electronic Proceedings of Undergraduate Mathematics Day with "Newton-Raphson versus Fisher scoring algorithms in calculating maximum likelihood estimates," (with **Andrew Schworer**), EPUMD, 1 (2003). Pete is active as a statistician supporting research activities across the campus.

Muhammad Islam co-authored several papers that appeared in 2003 including, "Exponential stability in nonlinear difference equations," (with **Y. Raffoul**), J. Difference Equations and Applications, 9, No. 1 (2003), 819-825, "Stability properties of linear Volterra integrodifferential equations with nonlinear perturbations," (with **Y. Raffoul**), Communications in Applied Analysis, 45 (2003), 405-416, "Uniform asymptotic stability in nonlinear Volterra discrete systems," (with **P. Elloe** and **Y. Raffoul**), J. Difference Equations and Applications, 9, No. 1 (2003), 819-825.

Becky Krakowski continues to be active in the role as an Outreach Mathematician, reaching out to the mathematical education needs in the community. She serves as a co-Principal Investigator 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 it is a continuation of the project that was described in last year's Newsletter.

Darren Parker delivered an invited talk in a Special Session at the national winter meetings in Phoenix. He also delivered a colloquium lecture at Wright State University in April 2004.

Youssef Raffoul was promoted to the rank of Associate Professor. The new rank is effective August 16, 2004. Youssef continues to be active as a research mathematician. This year's articles include: "General theorems for stability and boundedness for nonlinear functional discrete systems," J. Math. Anal. Appl. 279 (2003), 639-650; "Periodic solutions in neutral nonlinear differential equations with functional delay," Electronic J. Diff. Eq. Appl., (2003); "Exponential stability in nonlinear difference equations," (with **M. Islam**) J. Difference Equations and Applications, 9 (2003), 819-825; "Boundedness and stability in nonlinear discrete systems with nonlinear perturbation," (with **Youssef Dib**) J. Difference Equations and Applications, 9 (2003), 853-862; "Stability properties of linear Volterra integrodifferential equations with

nonlinear perturbations,” (with **M. Islam**), *Communications in Applied Analysis*, 7, No. 3 (2003), 405-416; “Uniform asymptotic stability in nonlinear Volterra discrete systems,” (with **P. Eloe** and **M. Islam**), *Computers and Mathematics with Applications*, 45 (2003), 1033-1039. Youssef delivered a paper at the International Conference on Industrial and Applied Mathematics, 2003, July 6-12, 2003, University of New South Wales in Sydney Australia.

Tim Sheng was a Visiting Professor at Baylor University during the Winter Term 2004. In the past year, Tim has given colloquium addresses at Illinois Institute of Technology, Southern Methodist University, Baylor University, the University of Missouri-Rolla, University of Texas at Arlington, University of Texas at San Antonio, and University of Houston. He also gave a presentation during the 2004 Finite Element Rodeo at the University of Texas at Austin. He organized several Special Sessions including *New Trends in the Analysis and Computation of Differential and Difference Equations* in the American Institute for Mathematical Sciences’ Fifth International Conference in Los Angeles and *Dynamic Equations on Time Scales: Theory and Applications* in the AMS USC Meeting (#996). His recent published works include: “Notes on crossed symmetry solutions of boundary value problems on time scales,” (with **P. Eloe** and J. Henderson) *J. Diff. Eqn. Appl.* 9 (2003), 29-48; “A simulation study of the Syndiotactic Polystyrene crystallization process,” (with R.D. Sudduth and K. Nichols) *J. Comput. Methods Sci. and Eng.*, 3 (2003), 148-175; “A continuation on cross symmetry of the solutions of two-point boundary value problems,” (with **P. Eloe**), *J. Dynamic Systems & Appl.*, 12 (2003), 99-114; “Solving degenerate reaction-diffusion equations via variable step Peaceman-Rachford splitting,” (with H. Cheng, P.Lin and R. Tan) *SIAM J. Scientific Comput.*, 25 (2003), 1273-1292.

MAA ACTIVITIES

Aparna Higgins continues to serve as a co-director of Project NExT (New Experiences in Teaching), Aparna is a member of the Committee on the Alder Awards for Distinguished Teaching by a Beginning College or University Faculty Member, she chaired the Program Committee for the Joint Mathematics Meetings to be held in Atlanta, 2005 and she served on the committee to choose AMS-MAA Invited speakers for the Atlanta meetings. In other service to the MAA, Aparna and **Tom Gantner** served on the Nominating Committee of the Ohio Section of the MAA. **Bill Friel** continues as Secretary-Treasurer of the Ohio Section of the MAA

UNDERGRADUATE ACTIVITIES

Math Club opened the year with a volleyball-filled picnic at the **Mashburn** home. There were three games played and **Darren Parker** was the only person to play on all three winning teams!

Math Club had four invited speakers. **Atif Abueida** spoke on “It’s a small world after all”, a graph theoretic presentation, **Tom Britt** (85) spoke on “Working in the Actuarial Field”, **Shannon Driskell**, our newest UD faculty member, spoke about the “Dynamic understanding of Parabola, Ellipse, and Hyperbola”, and **Carrie Herman** (03) spoke about “What it is really like to be a high school math teacher.”

Patrick Coate, Gayatri Gunda, Brian Meredith, Chris Ryan, and Zac Stinetorf participated in the sixty-fourth annual **William Lowell Putnam Mathematics Competition**. Some schools take the Putnam competition very seriously and “coach” students in preparation. Last fall, **Darren Parker** met regularly on Friday afternoons with these students in preparation for the exam.

A team of **Ben Johnson, Adam Kocolowski, and Chris Ryan** competed in this year’s **COMAP Mathematics Modeling Competition**. They earned an honorable mention. The team presented a poster at the Stander Symposium, **Chris** presented the work in a colloquium to the faculty, and **Chris** presented the work at the spring meeting of the Ohio Section of the MAA.

The second annual **Integration Bee** was held in March. More than 80 students participated and the event is becoming a student favorite. **Stephanie Edwards** coordinates this growing event. First place went to “**grandes gnus**”: **Manuel Carro** and **Eva Pillossof**, second place went to “**Waiting List...**”: **Chris Ryan**, and third place went to “**The Badunkadunks**”: **David Rice, Vince Romanin, and Jeff Teubl**.

Math Club sponsored the **8th annual High School Mathematics Competition**. **Kolleen Hryb** and **Jason Inkrott** coordinated this impressive effort as once again 100+ students from 7 schools came to campus to compete in this completely Math Club coordinated event. This year, the invited speaker, Dr. Colleen Livingston of Bemidji State University, spoke about Voronoi Diagrams.

Patrick Berarducci, Kevin Berridge, Mai Fadag, Gayatri Gunda, Ben Johnson, Jason Kauffman, Chris Ryan, and Andy Schworer presented talks at **Undergraduate Mathematics Day**. **Gayatri** and **Andy** then published papers in the refereed proceedings of the conference, **EPUMD**.

Gayatri Gunda, a member of the Berry Scholars Program, wrote her thesis on pebbling on directed graphs under the direction of **Aparna Higgins**. Gayatri produced original results and she has introduced the concept of pebbling questions in directed graphs. Her work is published in Electronic Proceedings of the Undergraduate Mathematics Day (<http://www.udayton.edu/~mathdept/EPUMD/EPMUD.htm>) She has discussed her work at the Ohio Section meeting of the MAA in Cincinnati, in a poster session at the Stander Symposium, in a poster session at the winter meetings in Phoenix, in a colloquium presentation to the faculty at UD, and in a colloquium presentation at Wright State University. Gayatri was presented with one of two 2004 Sigma Xi Awards for Undergraduate Research by Sigma Xi, the Scientific Research Society. The awards recognize excellence in undergraduate research in the sciences.

Gayatri studied in Spain during the summer of 2003. She received a Cordell Hull grant to visit elementary school classes in Spain to compare the ways in which mathematics is taught in the USA and in Spain. She includes this report in her Berry Scholars thesis.

In April, **Anthony Cash-Patterson, Patrick Coate, Mary Hickey, Jeff Neugabauer, David Prier, Joanne Sklodowski, and Sandra Venable** were inducted into **Pi Mu Epsilon**, the national mathematics honorary society.

The **Ohio Section of the MAA** met in March 2004 at the University of Cincinnati. Seniors **Gayatri Gunda** and **Chris Ryan** presented talks at a contributed paper session. Gayatri spoke on the results of her Berry Scholars thesis, "Pebbling on Directed Graphs," while Chris spoke on his team's efforts in the Math Modeling Competition, "Do I have a Thumb Twin?" Also attending were students **Alex Giffen, Ruth Hinde, Ben Johnson, Katie Kennedy, Sarah Poe, and Sandra Venable**.

THE BRO. JOSEPH W. STANDER SYMPOSIUM FOR UNDERGRADUATE RESEARCH

Several posters were presented by mathematics majors at the 2004 **Brother Stander Symposium**. **Angela Caracciolo, Gayatri Gunda, Ben Johnson, David Martin, Chris Ryan, and Peri Shereen** each presented posters. **Gayatri** presented a poster on Pebbling on Directed Graphs which related to her work in the Berry Scholars Program with thesis advisor, **Aparna Higgins**. **Gayatri** won an award to recognize excellence in faculty-student collaboration. **David** who double majored in Computer Science presented a poster on Grammatical Evolution. **Chris**, who doubled majored in physics, presented two posters. One included teammates, **Ben Johnson** and **Adam Kocoloski**, and discussed the efforts related to the fingerprint problem in the Mathematics Modeling Competition. The other poster addressed describing linear patterns in random scatterings of dots, a problem he studied for researchers with UDRI. This is the paper that Chris had delivered at Undergraduate Mathematics Day. **Angela** is a pre-service middle school mathematics education major. She studied the impact of reading skills on success in school performance. **Ben**, who double majors in mathematics and physics, worked with Bob Brecha from physics and studied Laser Atom Trapping. **Peri** considered an application of queuing theory on the interarrival and service rates of customers at the Gelato inside the Natural History Museum. She performed this study as part of her Summer Program for Women in Mathematics at George Washington University.

AWARDS

The 2004 Faculty Award for Excellence to a graduating student has two recipients this year, **Gayatri Gunda** and **Christopher Ryan**.

The 2004 Pi Mu Epsilon Award recipient is **Ken Barrett**. This is an award for excellence among second year students in mathematics.

GRADUATE ACTIVITIES

Ghazi Al-Eid , **Mai Fadag** , **Clarre Johnston**, and **Muhammed Mia** earned MS degrees in applied mathematics in 2003-04 academic year. For their Math Clinic projects: **Clarre Johnston** studied the effects of using notebook computers to help students understand calculus concepts in an undergraduate business calculus class with **Stephanie Edwards** and **Becky Krakowski**; **Ghazi Al-Eid** and **Muhammed Mia** studied boundedness and stability properties in nonlinear Volterra integrodifferential equations with **Muhammad Islam**; **Mai Fadag** explored combined dynamic derivatives on time scales and their computational applications with **Qin Sheng**. The work of **Ghazi** and **Muhammed** has been accepted for publication in Pan-American Mathematical Journal. They also presented their research work at an international mathematics conference held in Atlanta, Georgia in May 2003. **Mai** presented her work at Undergraduate Mathematics Day. **Stephanie** discussed **Clarre's** work at the national meetings in Phoenix.

RECENT GRADUATE ACTIVITIES

Scott Brockman is employed as an actuary with Mercer Consulting Firm.

Suzanne Dietz will enter medical school at the Medical College of Ohio this fall.

Nick Elam will teach mathematics in high school.

Megan Gorndt enters the workforce with the Highland Group.

Gayatri Gunda has enrolled in the MBA program at UD.

Sean Hendrick will seek certification at Saginaw Valley State to teach high school mathematics.

Melissa Lovesky will attend graduate school in statistics at the Ohio State University. Her teaching assistantship is in chemistry.

David Martin will enter the new Masters of Financial Mathematics program at UD this fall. He has the support of an assistantship/internship.

Chris Ryan will enter graduate school in physics.

David Schoen enters the work force in Chicago with Eco-Sure a product safety testing company.

Peri Shereen will teach in a secondary school in Nantes beginning this fall. This summer she is participating in the Morocco/Paris program through UD.

RETIREE NEWS

We enjoyed reading the November 2003, Sinclair Mathnet, the newsletter from the Department of Mathematics at Sinclair. **Al Giambrone** (68) serves as chairperson there and in his column, he reminisced about three math teachers who have impacted him as a mathematics educator. One is the late **Bro. Ed Zahn** during his time at Chaminade High School. A second is **Ben Rice** who is remembered as enthusiastic, engaging and always smiling. We keep trying to get Ben to return to the Science Center but he doesn't seem to get north of the McGinnis Center.

Bill Friel continues to teach a section of calculus each term. **Dick Peterson** returned and taught calculus to business students this past year. Must have been ok because he is signed up and returning in the fall. **Jack McCloskey** taught an evening section this past winter. He popped in the other day to express how much he enjoyed it. Glad he didn't have two sections, but he enjoyed it.

ALUMNI NEWS

Robert C. Bolz (66) served with **Bro. Ray Fitz** as a panelist for the discussion "Liberal Education Connected to Professional Studies." This was part of the 2004 Humanities Symposium sponsored by the Alumni Chair in the Humanities. In last year's newsletter, we reported that the 2003 Symposium had been snowed out even though Bob successfully made his way from Fort Worth to Dayton. This year, we found Bob touring the facilities of the new Science Center. He liked what he saw and we particularly enjoyed showing off the new Schraut Memorial Lecture Hall.

Dan Voss (79) will assume the duties as Chairperson of the Department of Mathematics and Statistics at Wright State University. Wright State carried out a national search, but they did not even have to leave the department to fill the position.

Paul Judd (82) has gone through a career change. After working for 18 years as an actuary with the Principal Financial Group in Des Moines, he now teaches in the statistics and actuarial science department at Drake University.

Tom Filloon (83) dropped by for lunch recently. Tom continues to work for P&G in Cincinnati and keeps in touch.

Jeffrey Diller (88) and his wife Jamie announce the birth of their first child, Elijah Patrick, born on 25 January, 2004. Jeff won a Kaneb Teaching Award for excellence in undergraduate teaching at Notre Dame in 2003. Jeff received this award for creating a course on introduction to mathematical reasoning, and then rearranging the mathematics major requirements to suit. Jeff says this is his "tilt at the 'teaching students to do proofs' windmill." Kaneb Teaching Awards are for teaching excellence demonstrated over time and faculty who have taught full time in undergraduate programs for at least five years are eligible.

Chikako Mese (91) has recently accepted a position as a tenured associate professor at Johns Hopkins University.

David Jessup (92) works for US News & World Report as a programmer/analyst, where his main charge is the graduate school survey. He enjoys handling all the technically difficult projects.

Kristi Lampe (nee Toft) (93) and her husband Peter announce the birth of Megan Anne, born on April 12, 2004. Megan has an older sister Kaitlyn. Kristi teaches at Carroll College.

Peter Vlahutin (94) has finished 8 years with Chaminade College Preparatory School in St. Louis. He serves as campus minister and house dean. Last year, he and his wife, Jenny, announced the birth of John Paul Thomas (2-14-03).

Rob Pratt (95) married Michelle Cunningham (95) on May 1, 2004 at St. John the Evangelist Catholic Church in Indianapolis. UD alumni in attendance included Sonja Ruth Rizzo (95), Jennifer Sacher (95), Lynn McLaughlin Haley (95), Susan Pratt Gilbert (89), and David Maxwell (83). Rob earned an M.S. in Mathematics (1999) and a Ph.D. in Operations Research (2003), both from the University of North Carolina at Chapel Hill. He works in research and development at SAS Institute in Cary, NC.

Erich Morman (96) lives and works in Washington, DC. His father, **Paul**, will complete 14 years as Dean of the College on June 30, 2004. Erich joined his family and the entire university community as we honored Paul at a recognition dinner on the evening of April 14.

Sara Miner More (96) says, "I completed my Ph.D. in computer science (cryptography) at the Univ. of California, San Diego last fall. My husband, Jesse, recently finished his Ph.D. in chemistry, and we are both currently postdocs at UCSD, enjoying La Jolla while we still can."

Laura English (97), who has worked in business for a number of years, is seeking certification to teach mathematics in high school in Pennsylvania.

Stephen Hartke (99) will defend his Ph.D. dissertation at Rutgers in July, and will join the faculty of the Department of Mathematics at The University of Illinois, Urbana-Champaign, in a three-year, VIGRE postdoc.

Rachael Kenney (99, 00) is a doctoral student in mathematics education at North Carolina State University, while working full-time as an adjunct faculty member in the Department of Mathematics there. She visited the Science Center during her spring break.

Geoff Dietz (00) and his wife Amber visited over Christmas break to see the new Science Center. They both continue to work towards their Ph.D. degrees at the University of Michigan, Geoff in mathematics and Amber in chemistry.

Ryan Reinhart (00) earned his master's degree in Higher Education Administration in May 2003. He now serves as Residence Life Coordinator at the University of Akron.

Boon Yi Soon (00) who works for Thales Electro-Optics PTE LTD in Singapore announced his recent marriage to Dinalya Zakirova. She is a medical doctor (Endocrinologist).

Chad Bhatti (01) visited recently and was amazed to find his old office in the Biology Department. Chad has been studying applied mathematics and mathematical finance as he pursues a Ph.D. degree at Rice University.

Bob Phipps (01) has worked at CNA Insurance in Chicago since 2002, and has just taken his fifth actuarial test pricing hospital/medical malpractice policies. He is doing a non-actuarial rotation in underwriting, which is helping him understand the business better. He returns to actuarial work in September. Bob returned recently to enjoy the festivities of the 25th anniversary of the Honors Program.

Dan Sheppard (01) continues to teach high school mathematics in the Cleveland area. He is a member of the Lalanne program and lives in community with 6 other Lalanne teachers.

Marcy Carew (02) works as an electronics engineer for the US Navy. She and **Shelley Franz** (02) visited over Christmas break. We missed them, but by email, we know they were amazed at the new Science Center.

Michelle Franz (02) teaches Algebra I and General Math at Ledgemont High School and Middle School in Geauga County. She is also working towards her MA in Mathematics at John Carroll University.

Julia Tosi (02) has completed two years of a three year program in law at the Ohio State University. This summer she is working for a large law firm in Cleveland.

Mark Burky (03) finished one year studying physics at the University of Maryland. He has since decided that he wants to study more mathematics and he is accepted on an assistantship to a Ph.D. program in mathematics at the University of Illinois beginning Fall, 2004.

UD LUNCH IN PHOENIX

We had a great time at the winter meetings in Phoenix and we had a great time at the UD luncheon. Lunch included: **Atif Abueida**, **Bob Buck** (69), **Paul Campbell** (67), **Wiebke Diestelkamp**, **Stephanie Edwards**, **Paul Eloe**, **Bill Friel**, **Colleen Hoover** (91), **Gayatri Gunda** (04), **Stephen Hartke** (99), **Andrew Hetzel** (98), **Aparna Higgins**, **Becky Krakowski**, **George Lang** (66), **Bob Lewand** (66), **Darren Parker**, **Peri Shereen** (04), **Ralph Steinlage** (62), and **Kathy Taylor** (65). The Winter meetings in January 05 will be in Atlanta Georgia during January 5-8. We will send out an email when we know when and where. If you live in the Atlanta area, we'd love to have you join us for the annual luncheon.

THE HONORS PROGRAM, 25 YEARS

The Honors Program celebrated 25 Years during March 5-7, 2004. **Sean Donahue** (84) delivered a keynote address at the Stander Symposium dinner on Friday evening. Other mathematics alumni/ae who returned for the weekend festivities include **Rafe Donahue** (87), **Greg Goodhart** (85), **Bob Phipps** (01), and **Susan Pratt** (02).

STATISTICS IN INDUSTRY AND TECHNOLOGY

The University of Dayton hosted the 10th Spring Research Conference on Statistics in Industry and Technology during June 4-6, 2003. **Pete Hovey** served on the Organizing Committee and made all the local arrangements. More than 100 statisticians from around the world participated in the conference. **Tom Santner** (69) spoke in a session on techniques in screening, **Kristen Duncan** (99) spoke in a session on estimation and multivariate analysis. **Dan Voss** (79) chaired a session on analysis of unreplicated factorial experiments. He co-authored a paper delivered in that session. **Wiebke Diestelkamp** spoke in a session on design and analysis of experiments.