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## **CHAIRPERSON'S MESSAGE**

Greetings from the Chairs office! You are used to hearing from Dr. Eloe, as are we all. But he decided that he wanted a more normal life after devoting 8 years of his life to overseeing the Department of Mathematics, so we allowed him to step down and do some of things that he enjoys for a change. His service to the department has been outstanding and very much appreciated. Without his example and advice, I could not have made it through my first year as Chair.

One part of the job I am looking forward to is meeting UD alumni. I had the privilege of meeting Joe Diestel and his son, Geoff, Bob Lewand, Nancy Roderer, and Bill Scharf, as well as visiting with Joseph Dib, Christian Hampson, Stephen Hartke, David Jessup, and Mariette Maroon last January at the Joint Meetings in Washington, D.C. Wiebke Diestelkamp, Paul Eloe, Youssef Raffoul and I were there interviewing many candidates for a position in the Mathematics Department. We had 560 candidates for our position and talked to over 60 of them in D.C. Obviously we had a very deep pool from which to choose, and the decision was not an easy one. But in the end, we were able to hire our top candidate, Lynne Yengulalp, who received her PhD from Kansas this spring. Her area of research is set-theoretic topology. She shows promise of becoming an excellent teacher as well as a top notch researcher. We are looking forward to having her as part of our team this fall.

We are very pleased to let you know that Dr. Shannon Driskell was granted tenure and promotion to Associate Professor last year. She has earned a national reputation in mathematics education in which we are very proud.

I also want to brag on two other faculty members. Wiebke Diestelkamp was recognized by the College of Arts and Sciences for her impressive service to the department, the university, and the mathematics community. She was named the recipient of the 2008 College of Arts and Sciences Outstanding Service Award. Aparna Higgins, who has acted as co-director of Project NExT for several years, was asked to become its director when Dr. Chris Stevens leaves that position this summer. This is indeed an honor for both Dr. Higgins and our department. Project NExT is a high profile program of the Mathematical Association of America and it shows the confidence that the MAA places in Dr. Higgins' abilities that it chose her to head this important project.

On May 3, thirteen more students graduated with a major in mathematics. They have joined your ranks as UD alumni. I hope to hear from them as I hope to hear from all of you. Please stay in touch and let us know what is going on out there in the world beyond UD.

Joe Mashburn

## **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 and graduate student travel. Your support is appreciated, and we purposefully use it to support the educational experience at UD.

The University Development Office reports that the following people donated a total of \$10,597.50 to the Department of Mathematics during 2008:

Timothy P. Bahmer (91)

Ronald Beisel (63)

Cheryl G. Bergeon

Gregory Bishop (86)

Tom Bohman (91)

Charles L. Brinkman (70)

Kathleen DeWald Brinkman (70)

Gregory Campbell (70)

Paul Campbell (67)

Joseph Chmiel (69)

Kennon R. Copeland (75)

Paul Eloe

Marla Gross (90)

Dwain Guggenbiller (85)

Kathleen Mary Kern (79)

Melvin Kuhbänder (56)

Patrick MacVeigh (79)

Christine M. Mitchell (72)

George Morrison (82)

Charles Mott (61)

Jane Pendergast (74)

David F. Schwallie (81)

Barbara Kieltyka Schwallie (81)

Robert Springer (77)

Kevin A. Thomas (76)

Susan Elaine Thompson (81)

Mark A. Turella (80)

Christopher Wagner (71)

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

**Duke Energy Midwest Charitable Giving**

**Fidelity Investments Charitable Gift Fund**

**IBM Foundation**

**Taylor-Smith Foundation**

**Eli Lilly and Company Foundation**

**Hewitt Associates LLC**

**The Procter & Gamble Fund**

**Towers Perrin Co.**

## ***THE KENNETH C. SCHRAUT MEMORIAL LECTURESHIP FUND***

The 3/31/09 market value for the Schraut Memorial Scholarship Fund (49108) was \$36,914.30. Thank you also for your continued generous support of the Kenneth C. Schraut Memorial Lectureship Fund. This year's lecture is scheduled for Saturday November 7, 2009. The Lecture will be held in conjunction with *Undergraduate Mathematics Day*, a conference for undergraduate students. **Dr. Thomas Santner** (69) has agreed to serve as this year's lecturer. See <http://academic.udayton.edu/MathEvents/> for continual updates with respect to this year's Lecture and Conference. Information should begin to appear following Labor Day.

The following individuals donated lectureship endowment during 2008:

Richard R. Allen (75)

C. Eugene Steuerle (68)

## **THE KENNETH C. SCHRAUT MEMORIAL SCHOLARSHIP FUND**

We had intended to award the initial scholarships from the Schraut Memorial Scholarship Fund this upcoming fall term; however, we shall postpone doing so until next year due to the state of the economy.

## **MATH EVENTS AT UD**

Through generous contributions to the Kenneth C. Schraut Memorial Lectureship fund and to the department's restricted funds, our alumni have enabled us to host the annual *Math Events* which features the Kenneth C. Schraut Memorial Lecture. Since 2002, the Schraut Lecture has anchored *Math Events* annually. 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 7, 2009. The most current information can be found at <http://academic.udayton.edu/MathEvents/>.

## **THE 9<sup>th</sup> ANNUAL KENNETH C. SCHRAUT MEMORIAL LECTURE, 11/1/2008**

**Dr. Robert Bolz** (66), Vice President, JSF Global Industrial Integration Lockheed Martin Corporation, delivered the 9<sup>th</sup> annual Kenneth C. Schraut Memorial Lecture to an audience that contained more than 50 students. In addition to a good turnout from our undergraduate and graduate students, students from John Carroll University, Xavier University, Sinclair Community College, and local high schools attended. **Danielle Carleton** (09), Math Club President, provided the opening remarks and introduced Bob. Thank you, Danielle.

Bob spoke on "Leadership Founded in Habits of Inquiry and Reflection." "Habits of Inquiry and Reflection" is a recent report on education in the Catholic and Marianist traditions at the University of Dayton. This is the document that is currently shaping the common academic program for undergraduates at the University of Dayton. Bob eloquently discussed how significant features in the common academic program can impact one's ability to take on leadership roles in the STEM (science, technology, engineering and mathematics) disciplines, and in society, in general.

## **THE 23<sup>rd</sup> BIENNIAL ALUMNI SEMINAR ON CAREERS IN MATHEMATICS, 11/1/2008**

We do not want to appear cocky, but we think that Doc might kind of like what is going on with the Alumni Seminar on Careers. Using the 22<sup>nd</sup> Alumni Seminar as a template, the Career Seminar opened with a Career Panel; Break-Out sessions following. The Career Panel was again an outstanding success and the Break-Out sessions successfully retained more interested students.

**Jennifer Diemunsch** (09), co-secretary of Math Club, chaired the panel session. She introduced each panelist and moved the panel discussion along very smoothly. Thank you, Jennifer.

The following careers were represented in the Break-Out sessions: Statistics, Business, Information Technology (IT), Government, Engineering, High School Teaching, College Teaching and Service. These careers were represented by the following Career Panelists:

- Statistics: **Dr. Dan Voss** (79), Professor and Associate Dean, Wright State University
- Business: **Dr. Chad Bhatti** (01), JP Morgan Chase – Consumer Risk Modeling and Analytics  
**Diane Schulte** (75), Director, Strategic Initiatives, Noblis  
**Curtis Schultz** (01), Vice President, Citigroup
- IT: **Terrance Stretch** (1966), Principal, Stretch Associates
- Government: **Robert Karkoska** (73), National Security Agency
- Engineering: **Dr. Robert Bolz** (66), Vice President, JSF Global Industrial Integration Lockheed Martin Corporation  
Dr. Jennifer Wightman, Research Scientist, Battelle
- High School **Carrie Herman** (03), Centerville High School
- College **Dr. Joe Diestel** (64), Professor, Kent State University  
**Dr. Tom Santner** (69), Professor, The Ohio State University
- Service: **Ruth Hinde Pera** (05), Marianist Volunteer Program

Thank you to all who participated in this year's Career Seminar. Moreover, thanks to all of you who continue to be interested in UD students and thanks to Doc Schraut.

### ***INVITATION TO MATH EVENTS 2009 ON SATURDAY, NOVEMBER 7, 2009***

You are invited to participate in *Math Events 2009*, which will take place on Saturday, November 7, 2009. This year's program will consist of the *10<sup>th</sup> Annual Kenneth C. Schraut Lecture* and the *4<sup>th</sup> Undergraduate Mathematics Day*, an undergraduate mathematics conference. We are pleased to announce that **Thomas Santner** (69) a professor in the Department of Statistics at the Ohio State University will deliver this year's Schraut Memorial Lecture. **Kristen (Blenk) Duncan** (99) a faculty member in the Department of Mathematics and Statistics at San Diego State University will also present an invited address for Undergraduate Mathematics Day. Planning is still quite premature, but you will be able to keep up with details at <http://academic.udayton.edu/MathEvents/>.

### ***FACULTY UPDATE***

#### **Full Time Faculty**

Atif Abueida, 2000	Peter Hovey, 2001	Maher Qumsiyeh, 2008
Art Busch, 2006	Muhammad Islam, 1985	Youssef Raffoul, 1999
Wiebke Diestelkamp, 1998	Virginia Keen, 2007	Paula Saintignon, 1983

Shannon Driskell, 2003  
Paul Eloë, 1980  
Bob Gorton, 1969  
Aparna Higgins, 1984

Becky Krakowski, 2000  
Ruihua Liu, 2004  
Joe Mashburn, 1981  
Shirley Ober, 1977

Gerry Shaughnessy, 1967  
Les Steinlage, 1969  
Muhammad Usman, 2007  
Lynne Yengulalp, 2009

### **Part Time Faculty**

Cheryl Edelmann, 1999  
Robert Finnegan, 1985  
Bob Flavin, 2008

Steve Fuchs, 2005  
Joe Huelsman, 2003  
Scott Mitter, 2001

Rusty Rizotte, 2007  
Sam Wright, 2007

### **Professors Emeriti**

Stanley Back, 1998  
Bill Friel, 1999  
Tom Gantner, 2001  
John Kauflin, 2006

Jack McCloskey, 2001  
Harry Mushenheim, 2006  
Jerry Neff, 1999  
Richard Peterson, 1998

Ben Rice, 1998  
Carroll Schleppe, 2001  
Ralph Steinlage, 2001  
Jerry Strange, 1999

## **FACULTY ACTIVITIES**

**Atif Abueida** published “Multidesigns of the complete graph with a hole into the graph-pair of order 4,” *Bulletin of the Institute of Combinatorics and its Applications*, 53 (2008), 17-20. Atif has now been away from the University of Dayton for two years; we look forward to his return for the Fall term, 2009. While away, he delivered invited lectures at University of Queensland, Australia, the United Arab Emirates University, and Koc University in Turkey.

**Wiebke Diestelkamp** works on two interdisciplinary research contracts with Karissa Crane (Department of Biology) and Margaret Pinnell (Department of Mechanical Engineering). This past year Wiebke delivered an Invited Address to the Ohio Section of the Mathematical Association of America, and she delivered two colloquia, one at Wright State University and one at Sinclair Community College.

**Shannon Driskell** joined Ronau et al. in writing the book chapter *Framing the Research on Accessing Mathematics and Students' Thinking about Mathematics with Digital Technologies* in the *National Technology Leadership Initiative Monograph*. She also joined Niess et al. in writing the book chapter *Technological Pedagogical Content Knowledge (TPCK): Preparation of Mathematics Teachers for 21st Century Teaching and Learning* in the *Association of Mathematics Teacher Educators 5th Monograph*. She has been working with 6th-8th grade Dayton Public School teachers to help them gain a deeper understanding of the mathematics presented in the *Connected Mathematics 2* program through the *Mathematics Inquiry Professional Development Program for Grades 6-12 Teachers* grant funded by the Ohio Department of Education. She is also a member of the *Ask a Mathematician* project funded by Miami University's iDiscovery Center. Shannon earned tenure and promotion to associate professor. Promotion and tenure are in effect beginning August 16, 2009.

**Paul Eloë** enjoyed the transition to regular faculty by serving as host for Dr. Rahmat Khan of the National University of Sciences and Technology, Pakistan. Dr. Khan was

awarded a post-doc by the government of Pakistan and began his seven month stay in Dayton on October 1.

**Aparna Higgins** spent the first half of 2008 at the University of Dayton. She presented workshops on directing undergraduate research at the Joint Mathematics Meetings in January and to the Project NExT Fellows at Mathfest. In mid-February, Aparna spent a weekend at the University of Utah, as part of an external advisory team for UU's VIGRE grant. (No, a trip to a ski resort was NOT on the itinerary.) In August, the Higgins family traveled west so that Aparna and her husband Bill could begin their sabbatical year at California State University Channel Islands (CSUCI). Aparna and Bill shared a teaching position, with Aparna teaching in the spring of 2009. Aparna spent the fall of 2008 working pondering pebbling problems with her collaborators, Bill Higgins of Wittenberg University and Cindy Wyels of CSUCI. Aparna's article entitled "Communicating, Mathematics, Communicating Mathematics – Joe Gallian style," has appeared in the AMS series Contemporary Mathematics, Vol 479, 2009. Aparna spoke on graph pebbling at the Carleton Summer Mathematics Program, at Brigham Young University and at Claremont College. In late fall, Aparna was recommended for appointment as Director of Project NExT. Her five year term begins in August 2009.

**Peter Hovey** serves as PI on a two year contract with National Institute of Aviation research. He delivered a poster (with **Rafe Donahue** (87)) at the Joint Statistical Meetings in Denver, entitled *Comparisons of the Uses of Logistic and Probit Regression in the Aerospace and Biomedical Fields*.

**Muhammad Islam** co-authored (with **Jeff Neugebauer** (06, 08)) "Qualitative properties of nonlinear Volterra integral equations," *Electronic Journal of Qualitative Theory of Differential Equations*, 12(2008), 1-16 and he delivered an invited talk at the World Congress of Nonlinear Analysts – 2008 in Melbourne, Florida.

**Virginia Keen** served as host to Pamela Austin, a Family Maths Project Coordinator at Nelson Mandela Metropolitan University in Port Elizabeth, South Africa. She delivered a talk at the International Congress on mathematics education in Monterrey, Mexico, and she serves as co-PI (with **Shannon Driskell**) on a WeEXCEL Research Mini-Grant on *Programmatic Assessment of Mathematical Content Knowledge for Teaching*.

**Becky Krakowski** serves as co-PI for three independent grants sponsored by the Ohio Board of Regents. These are *Science & Math Academies for Teachers through EXCEL, Life Science, Physical Science, and Mathematics Professional Development Project for Grades 6-11*, and *WeEXCEL Science and Math Teacher Academies*.

**Ruihua Liu** co-authored (with **Paul Eloe**, **Masako Yatsuki** (06), and George Yin) "Optimal selling rules in a regime-switching exponential Gaussian diffusion model," *SIAM Journal on Applied Mathematics*, 69 (2008), 810-829.

**Joe Mashburn** published "An order model for infinite classical states," *Foundations of Physics*, 38 (2008), 47-75.

**Maher Qumsiyeh** has completed his first year as a faculty member at UD. He delivered a poster (with **Gerry Shaughnessy**) at the Joint Statistical Meetings in Denver, entitled *Using the Bootstrap to Select Active Factors in Unreplicated Factorial Experiments*.

**Youssef Raffoul** continues his active research agenda. His recently published articles include “A second order boundary value problem with impulsive effects on an unbounded domain,” *Nonlinear Analysis*, 69 (2008), 2924-2929, “Existence results for periodic solutions of integro-dynamic equations on time scales, *Annali di Matematica Pura ed Applicata*, 10 (2008), “Impulsive dynamic equations on a time scale,” *Electronic Journal of Differential Equations*, 67 (2008), 9 pp., “On the discrete-time multi-species competition-predation system with several delays,” *Applied Mathematics Letters*, 1 (2008), 15-22, “Periodicity in nonlinear systems with infinite delay,” *Advances in Dynamical Systems and Applications*, 3 (2008), 185-194. Youssef delivered two talks at the Workshop on Dynamical Systems at Izmir University of Economics in Turkey.

**Muhammad Usman** delivered a colloquium presentation at Ohio University. He is working with Dr. Amit Singh of the Department of Biology to develop curriculum in the area of mathematical biology. Plans are underway to offer a team taught course by that name next fall.

## ***NATIONAL APPOINTMENT***

**Aparna Higgins** was appointed Director of Project NExT. Project NExT (New Experiences in Teaching) is a professional development program for new or recent Ph.D.s in the mathematical sciences. It is a program of the Mathematical Association of America with major funding provided by the ExxonMobil Foundation. Dr. Higgins has served as co-Director for ten years. Her appointment was announced at the national meetings in Washington D.C. in January. The appointment will be in effect on August 16, 2009.

## ***AWARD CITATION***

**Wiebke Diestelkamp** received the 2008 College Award for Outstanding Service. Congratulations, Wiebke. The citation reads:

The 2008 faculty award for outstanding service in the College of Arts and Sciences is granted to Dr. Wiebke Diestelkamp, Department of Mathematics.

Since joining UD's Math Department eleven years ago, Dr. Diestelkamp has provided extensive and exemplary service to the Department, the College, the University, and the broader mathematical community, particularly in Ohio. Although her service includes a wide spectrum of activities, three are particularly important: co-organizer of MathEvents since 2002, service to the Mathematical Association of America and Ohio NExT, and advising of students.

MathEvents is a collection of celebrations of mathematics that has become a standard event every fall since 2002. Each year, MathEvents is anchored by the Kenneth C.

Schraut Memorial Lecture. In even numbered years, the Biennial Alumni Seminar in the Mathematical Sciences is tied to the lecture. This seminar includes *Conversations among Women in Mathematics*, an activity to promote mathematics for women. In odd-numbered years, the Schraut lecture anchors Undergraduate Mathematics Day which allows undergraduates and sometimes high school students to give and attend talks at a professional conference celebrating all aspects of mathematics—research, learning, teaching and history. The programs have developed and participation has grown over the years so that attendance is now near capacity at 170 attendees. Each year, Dr. Diestelkamp and Dr. Aparna Higgins co-organize these programs including applying for funding, determining the schedule for the day, recruiting participants, and handling applications, along with arranging for housing, food service, signage, and audio-visual equipment to name but a view of the details that make the day a success.

The Mathematical Association of America is the world's largest professional society that focuses on mathematics accessible at the undergraduate level. The national organization is arranged into Sections with UD in the Ohio Section. Dr. Diestelkamp has been UD's liaison to the Ohio Section since her second year at UD. In 2006, Dr. Diestelkamp was appointed the Liaison Coordinator of the Ohio Section, a position she still holds today. This past January, she began a three year term on the Committee on MAA/Department Liaisons, a national appointment made by the President of the MAA from among all members of the MAA.

Project NExT, New Experiences in Teaching, is a professional development program of the MAA for new and recent PhDs in math. In 1999-2000, Dr. Diestelkamp was selected as one of 70 Project NExT fellows nationwide. Because of the popularity and competitive nature of this program, many of the MAA Sections have since developed their own Project NExT programs. Dr. Diestelkamp and two other former national fellows now direct Ohio NExT. This is a year round activity that includes recruiting new faculty to the organization and coordinating two half-day workshops annually. Dr. Diestelkamp also continues to be active with the national Project NExT.

Dr. Diestelkamp's additional service activities are numerous. For four years, she advised undeclared science transfer students from within UD and to UD. Presently, she advises junior mathematics majors. She has also served as a faculty mentor for a first-year minority student and on numerous thesis/dissertation committees for undergraduate, graduate and doctoral students. At the University level, Dr. Diestelkamp serves on the Judicial Hearing Board. Locally, Dr. Diestelkamp has served the Dayton Chapter of the American Statistical Association. After previously being elected vice president, she is currently serving as the chapter's elected secretary/treasurer.

For these and her many unmentioned accomplishments, the College of Arts and Sciences is pleased to present the 2008 Outstanding Service Award to Dr. Wiebke Diestelkamp.



## **ACTIVITIES OF UNDERGRADUATE STUDENTS**

The **Math Club and Pi Mu Epsilon Chapter** of the University of Dayton (<http://academic.udayton.edu/mathclub/>) was very active this year. The officers were **Danielle Carleton** (Math Club President), **David Aaby** (PME President), **Megan Johns** (Vice-President), **Jennifer Diemunsch** and **Megan Miller** (co-Secretary) and **Shelley Leber** (Treasurer). **Muhammad Usman** served as the faculty advisor. As usual, the Math Club and Pi Mu Epsilon met together and regularly this year. Math Club got things going with the traditional Math Club picnic; however, this year we gathered at Danielle's house in the south neighborhood (ghetto). Meeting agendas included a presentation on Research Experiences for Undergraduates by **David Aaby** and **Jennifer Diemunsch**, guest speakers getting started in math careers or research experiences in robotics, preparation for the High School Math Contest (multiple agendas), a community viewing of NUMB3RS and election of officers.

Elections for officers for 2009-10 resulted in **Joshua Cain** being elected President of the Math Club, **Josh Craven** elected as PME President, **Megan Miller** elected as Vice-President, **Charlie Suer** elected as Secretary, and **Matt Magner** elected as Treasurer.

Math Club organized and hosted the **13<sup>th</sup> annual High School Mathematics Contest**. For the second year in a row, Math Club President, **Danielle Carleton**, wrote a winning proposal for funding from the Student Government. One hundred thirty-one students from five high schools participated. There were a record number of teams this year with three students per team. The five participating high schools were Carroll, Fairborn, DECA, Stivers, and Walnut Hills. Fairborn took first place; Carroll took second and third place. This has become a major annual event and we are very proud of the Math Club. Special thanks goes to this year's organizing committee, **David Aaby, Danielle Carleton, Jennifer Diemunsch, Megan Johns, Shelley Leber, and Megan Miller**.

The sixty-eighth annual **William Lowell Putnam Competition** was held on the first Saturday of December. Four students from UD participated. They are **Nicholas Armenoff, Jennifer Diemunsch** (UD's high scorer with 10 points), **Charlie Suer** and **Joe Vecchio**. We are proud of all of these students as they spent a valuable Saturday near exam week, working on very challenging mathematics problems.

We conducted an informal induction ceremony for Pi Mu Epsilon, the national mathematics honorary society on Tuesday April 28th and there will be a formal induction early next fall. This year's inductees are:

<b>Joshua Cain</b>	<b>Erik Krissek</b>	<b>Megan Miller</b>
<b>Joonwoo Park</b>	<b>Yi Zhao</b>	

UD produced three teams of students for this year's **COMAP Mathematics Modeling Competition**. Team 1 consisted of **Larry Hill, Matt Magner** and **Charlier Suer**, Team 2 consisted of **Jennifer Diemunsch, Sarah Huggins** and **Joe Vecchio** and Team 3 consisted of **Joshua Cain, Michelle Tomczyk** and **Kara Wurzelbacher**. All three teams worked on a traffic control problem and Teams 1 and 2 earned Honorable Mention.

## **THE STANDER SYMPOSIUM**

The **Stander Symposium** is a very special event at UD. It was held on Wednesday evening, April 15 and Thursday April 16 this year. The Department of Mathematics provided two of its usual contributions, the Integration Bee, and the pizza luncheon.

Several students participated in the Poster Session. Their names and poster titles are given below. By the titles, you see that many students are double majors or are interested in interdisciplinary work.

**David Aaby**, *A Comparative Study of Numerical methods for the Hodgkin-Huxley Model of Nerve Cell Action Potential*

**Danielle Bott**, *Interdisciplinary Methods with Science and Mathematics*

**Megan Cable**, *Stability and Instability in Differential equations with Multiple Delays*

**Megan Johns**, *Investigation of the McCook Field Area and Associated Health Effects of Trichloroethylene Exposure*

**Brian Krilov**, *A Study of the Probability of Failure of Aircraft Turbine Engines Using Modified Maximum Likelihood Estimates*

**Eric Krissek**, *Translating Geometrical Transformations across Cultures: Teaching Mathematics in Zambia*

**Erin Landers**, *Efficiency in the Medical Supply Industry: A Nonparametric Analysis*

**Lu Ee Peh**, *Bootstrapping with SAS and Exploring Dirty Data*

**Miriam Poteet**, *Stability of Steady State Solutions of the Forced Kuramoto-Sivashinsky Equation*

**Cheuk Wai**, *Earning Money in Day-Trading: Fact or Fiction*

**Jennifer Diemunsch** presented a talk entitled *Paley Graphs: exploring Transitive Subtournaments and Cliques*

**Integration Bee** is growing. 180 students formed 70 teams to compete in the Integration Bee. If we get bigger than Chudd Auditorium, we may be looking at the Fieldhouse for a home. **Art Busch** again organized this year's Bee and served as host. First place went to Korean University (**Joonwoo Park**), second place went to Pi is Exactly 3 (**Mike McArtor, Dan Loerke and Brian McMasters**), and third place went to The Team That Will Lose to Josh... Again (**Courtney Castle, Michele Tomczyk and Kyle Rodden**).

## **THE HONORS STUDENTS SYMPOSIUM**

In recent years, the University Honors Program has been hosting the Honors Students Symposium. This year it was held on Friday afternoon, March 6, 2009. In the Stander

Symposium, the vast majority of the students present their work in the form of a poster. In the Honors Students Symposium, students present their work in the form of fifteen minute talks. This year four math majors participated. By the titles, you can sense that many students are double majors or are interested in interdisciplinary work.

**Jennifer Diemunsch**, *On Transitive Subtournaments and Cliques Numbers of Paley Groups*

**Sarah Huggins**, *Thomas Merton's Buddhist Rays of Truth: A Study of the Truths of Zen Buddhism Found in the Writings of Thomas Merton*

**Erin Landers**, *Efficiency in the Medical Supply Industry: A Nonparametric Analysis*

**Brian Krilov**, *A Study of the Probability of Failure of Aircraft Turbine Engines Using the Extreme Value Theory*

## **AWARDS**

The recipient of the 2009 Faculty Award for Excellence is **Megan Johns**. Megan was a double major: mathematics and biology. She also served as a co-winner of the P. K. Bajpai Undergraduate Research Award which goes to the undergraduate student who best represents the spirit of undergraduate research in biology.

The recipient of the 2009 Pi Mu Epsilon Award is **Joshua Cain**. This is an award for excellence among second year students in mathematics.

The 2009 Brother Joseph W. Stander, S.M., Award of Excellence in Mathematics Education recipient is **Ella Stone**. This award for excellence goes to a graduating senior in the teacher licensure program with a principal teaching field in mathematics.

**Danielle Carleton** is co-winner of the Dr. E. B. O'Leary Award of Excellence. Danielle was a double major: mathematics and economics. This award goes to the outstanding senior majoring in economics.

## **SMART Scholarship**

The Science, Mathematics And Research for Transformation (SMART) Scholarship for Service Program has been established by the Department of Defense (DoD) to support undergraduate and graduate students pursuing degrees in Science, Technology, Engineering and Mathematics (STEM) disciplines. The program aims to increase the number of civilian scientists and engineers working at DoD laboratories. **Megan Miller**, who will begin her junior year this fall, was awarded a SMART Scholarship. The scholarship pays full tuition, an additional book allowance, and guarantees paid summer internships, health insurance and a job upon graduation. Congratulations Megan!

## ***PLANS OF RECENT GRADUATES***

**David Aaby** will enter a graduate program in biostatistics at the University of Michigan.

**Nicholas Armenoff** will enter a Ph.D. program in mathematics at the University of Kentucky.

**Danielle Carleton** begins work for Buck Consultants in Fort Wayne, Indiana on June 1.

**Jennifer Diemunsch** will enter a Ph.D. program in mathematics at the University of Colorado Denver.

**Sarah Huggins**, a double major in religious studies and mathematics, is considering graduate programs and the job market in math related fields.

**Megan Johns** begins work with P&G in Cincinnati in late September. She has a position in Research and Development with baby care products.

**Shelley Lebers** earned licensure to teach mathematics and she is looking to teach in high school this fall.

**Zachary Martinzek** graduated in December and took a position with Infinium an investment firm in Chicago.

**Erin Shafer** will enter a graduate program in actuarial science at Ball State University.

## ***ACTIVITIES OF GRADUATE STUDENTS***

In recent years, the University of Dayton has been developing better mechanisms to support graduate students during the summer term, including the Graduate Student Summer Fellowship program. Graduate students submit research proposals and summer fellowships are awarded on a competitive basis. Last summer (08), **Hannah (Samuel) Sanders** was awarded the prestigious Dean's Fellowship. This summer approximately 60% of the submitted proposals were funded. This summer **Qian Li** was awarded a Dean's Fellowship and **Elham Negahdary** was awarded a Graduate Student Summer Fellowship. Qian is working with **Carl Chen** of the Department of Economics & Finance; Elham is currently working independently.

**Jinyang Sun (Aug 08)** earned the MAS degree. She worked with **Ruihua Liu** and **Paul Eloe** and she wrote a math clinic project on Double Barrier Option Pricing in Regime-Switching. She is a co-author on a paper entitled Double Barrier Option under Regime-Switching Exponential Mean-Reverting Process that will appear in the International Journal of Computer Mathematics. She currently resides in the Philadelphia area where she is employed by ING.

**Philip Myers (Dec 08)** earned the MAS degree. He has pursued his master's degree as a part-time student while being employed by Honda. He worked with **Pete Hovey** and wrote a math clinic project entitled Transfer Function Model Application for Forecasting Automotive Warranty Claims.

**Hannah Samuel Sanders (Dec 08)** earned the MFM degree. She worked with **Peter Lung** (now on the faculty at the University of Texas, Arlington) and she wrote a math clinic project entitled Money Illusion or Resale Option? - A Model-Based Mispricing Approach to Understanding the Housing Market Crisis. Her research was supported by a Dean's Fellowship grant from the University of Dayton Graduate School.

**Locksley Shamori Todd (Dec 08)** earned the MFM degree. He worked with **Kevin Mahon, CPA** and wrote a math clinic project entitled Inflation Hedging. This work represents a continuation of Locksley's internship with Highland Consulting Associates, Inc., an Investors Advocates firm based in Cleveland.

**John Garringer (May 09)** earned the MFM degree. He worked with **Peter Lung** and **Paul Eloë** and wrote a math clinic project on An Analysis of the "Mighty Mesa" Option Trading Strategy. John is employed by NCR and pursued his master's degree as a part-time student.

**Lu Ee Peh (May 09)** earned the MFM degree. She worked with **Maher Qumsiyeh** and wrote a math clinic project entitled Bootstrapping with SAS and Exploring Dirty Data. Upon graduation, Lu Eh plans to relocate to Singapore where she has an opportunity to work in a bank. Her parents made the trip from Malaysia to enjoy her graduation with her.

**Miriam Poteet (May 09)**, earned the MAS degree. She worked with **Muhammad Usman** and wrote a math clinic project on Stability of Steady State Solutions of the Forced Kuramoto-Sivanshinsky (KS) Equation. Miriam will continue her studies as a Ph.D. candidate in applied mathematics at the Air Force Institute of Technology.

**Veronica Respress (May 09)** earned the MAS degree. She worked with **Paul Eloë** and wrote a math clinic project on Uniqueness of Solutions Implies Existence and Uniqueness of Solutions of Boundary Value Problems for Third Order Differential Equations.

**Cheuk Wai (May 09)** earned the MFM degree. He worked with **Len Schneck** of the Department of Economics & Finance and he wrote a math clinic project entitled The Effectiveness of Trading. Upon graduation, Cheuk will return to his hometown of Chicago where he is employed by Zurich North America.

## **ALUMNI NEWS**

**John E. Orban (74)** was recently elected as an American Statistical Association Fellow. He was selected, in part, for his leadership accomplishments in managing a large statistical consulting organization and mentoring young statisticians. John serves as

manager of Battelle's Statistics and Information Analysis product line that employs approximately 80 professional statisticians (M.S. or Ph.D. in Statistics), database programmers, and environmental engineers. Prior to joining Battelle in 1985, he was an Assistant Professor of statistics and Associate Director of the Center for Statistics, Quality Control, and Design at the State University of New York at Binghamton.

**Sean Donahue** (84) is a professor of ophthalmology at Vanderbilt University. On April 1, 2009, he was named the first Sam and Darthea Coleman Chair in Pediatric Ophthalmology, an endowed professorship.

**Mary (Kaczynski) Ollier** (89) teaches mathematics at Carroll High School. She and her teams are regulars at the High School Math Contest.

**Eric Kaufmann** (91) was awarded the College Research Award for 2008 in the College of Arts and Sciences at the University of Arkansas, Little Rock.

**David Jessup** (92) and his wife, Margeux, live and work in Washington D.C. They joined us for dinner at the alumni get-together at the Lebanese Taverna.

**Tann Elali** (93) is currently on the faculty in the engineering college at King Faisal University of Saudi Arabia.

**Rachael Kenney** (99) completed her PhD in Mathematics Education at North Carolina State University; since Fall 2008 she has served as an assistant professor of Mathematics Education at Purdue University.

**Sean Hendrick** (04) has been working at Baker College in Detroit as a financial aid officer for the past four years.

**Peri Shereen** (04) completed a masters degree in International Peace and Conflict Resolution at American University and she is now studying mathematics at Cal State University, Long Beach. She attended the national meetings in January in Washington, D.C. She flew in the night of the reunion and thus, she missed the reunion.

**Christian Hampson** (05) earned a Ph.D. in mathematics from Colorado State University and has taken a position with the National Security Agency.

**Ruth (Hinde) Pera** (05) and her husband, Michael, announce the birth of their daughter, Abigail (February, 18, 2009).

**Tom Hawkins** (07) works for PricewaterhouseCoopers as a consulting actuary, assisting in Due Diligence for Transactions.

### ***UD GET-TOGETHER AT THE MATH MEETINGS***

We met for dinner in Washington D.C. on Monday January 5. Those gathering included **Joseph Dib** (2002), **Joe Diestel** (64), **Christian Hampson** (05), **Stephen Hartke** (99), **David Jessup** (92), **Bob Lewand** (66), **Mariette Maroun** (2003), **Nancy Roderer** (67), **Bill Scharf** (68). At the recommendation of Nancy Roderer, we gathered at the Lebanese Taverna. Excellent recommendation!

**Bob Buck** (69), **Collen Hoover** (91), **Peri Shereen** (04) and **Susan Thompson** (81) attended the meetings, but they were unable to join us for dinner.