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### ***CHAIRPERSON'S MESSAGE***

I hope that this letter finds each one of you well and prosperous. I have now made it through two years as Chair with no discernable damage to either me or the department. There are two especially exciting events from last year that I want to tell you about.

First, our own Dr. **Youssef Raffoul** won the University of Dayton's Alumni Award in Scholarship. His sustained record of high quality research in the areas of differential and integro-differential equations has earned him the respect of colleagues here and in the mathematics community. The citation of the award appears later in this letter.

Next, our department has put into place a minor in actuarial science which will go into effect next year. This is a rigorous, challenging minor that should prepare students for the actuarial exams covering statistics and finance. A student who completes this minor will receive VEE (Validation by Education Experience) credit for statistics, finance, and economics. We have always had a significant number of students choosing a career as an actuary, and we are very pleased to offer them this opportunity of an excellent start to their career. I want to especially thank **Tom Britt** (84), a UD Mathematics Alumnus and Fellow of the Society of Actuaries, who gave us first-class advice.

Youssef Raffoul is the subject of another bit of news. Last year he was promoted to the rank of Professor. Also, Dr. **Ruihua Liu** was granted tenure and was promoted to the rank of Associate Professor. Congratulations to both of them on the recognition of their contributions to the university.

Last year we welcomed Dr. **Lynne Yengulalp** to our department. She graduated last year with a PhD from the University of Kansas. Her research is in set-theoretic topology. She is something of a local product, because she got her undergraduate and master degrees from Miami University.

In my message last year I mentioned that one aspect of the job I was looking forward to was getting to meet alumni. Sadly, I was unable to attend the national meeting last January. I certainly plan to be in New Orleans next January, and hope to meet a number of you there.

On May 2, 14 UD students became alumni of the Mathematics Department. 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 \$9,297.50 to the Department of Mathematics during 2009:

Timothy (91) & Christine (91) McGinnis Bahmer	Michael Hemler (74)
Ronald L. Beisel (63)	William & Aparna Higgins
Stephen & Cheryl Bergeon (83)	Timothy Rice & Angela Jacobs (88)
Gregory (86) & Julie Ruschau Bishop	Melvin & Pauline Kuhbänder (56)
Tom & Jennifer Bohman (91)	Kathleen Kern (79) & Patrick MacVeigh (79)
Gregory & Patricia Campbell (70)	Christopher Wagner (71) & Christine Mitchell (72)
Melanie Schneider & Paul J. Campbell (67)	Mark Hale & Jane F. Pendergast (74)
Joseph & Joan Chmiel (69)	Edward & Joyce Thomas Ray (74)
Kennon & Linda Copeland (75)	David (81) & Barbara (81) Kieltyka Schwallie
David (93) & Cheryl (92) Prenger Edelmann	Richard & Elizabeth Segers (50)
Paul & Laura Schneider Eloë (84)	Robert W. Springer (77)
Charles & Alicia Fernandez-Mott (61)	Susan Elaine Thompson (81)
Marla Prenger Gross (90)	Mark Turella (80)
Bill Scharf (68)	

The above total includes gifts from the following corporations and foundations, at least some of which are matching:

Fidelity Charitable Gift Fund	The Abbott Fund
Hewitt Associates LLC	The Procter & Gamble Fund
IBM Foundation	Towers Perrin Co.

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

The market value for the Schraut Memorial Lectureship Fund (49108) was \$ 45,233.19. 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 6, 2010. The Lecture will be held in conjunction with *Biennial Career Seminar*. **Dr. Eugene Steuerle** (68) 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 Seminar. Information should begin to appear following Labor Day.

The following individuals donated to the lectureship endowment during 2009:

Eugene Bolzan (69)  
Ann Farley Flynn  
Peak Statistical Services, Inc.  
Richard (71) & Leslie Kirchmer Iannarino (72)

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

The market value of the Kenneth C. Schraut Memorial Scholarship Fund is \$113,125.90. The first recipient of the Kenneth C. Schraut Memorial Scholarship will be announced later this summer. We wish to thank all of you who have made it possible for UD to reward mathematics majors for their hard work. The following individuals donated to the Kenneth C. Schraut Memorial Scholarship Fund.

Andrew (81) and Suzanne (83) Ehrenzeller  
Robert (68) and Mary Jo (70) Nero  
Eugene Steuerle (68)

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

Vanguard Charitable Endowment Program  
The Scholarship Fund  
Fidelity Charitable Gift Fund

### ***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.

### **THE 10<sup>th</sup> ANNUAL KENNETH C. SCHRAUT MEMORIAL LECTURE, 11/7/2009**

**Dr. Thomas Santner** (69), Professor at the Ohio State University delivered the 10<sup>th</sup> annual Kenneth C. Schraut Memorial Lecture to a diverse audience with high school students, undergraduate and graduate students and faculty members. **Josh Cain** (11), Math Club President, provided introductory remarks and introduced Tom. Thank you, Josh.

Tom spoke on "These Aren't your Mothers and Fathers Experiments." Tom gave some historical context of the development of statistical experiments; he then focused on recent developments of computer experiments and described the breadth of these experiments, the

impact of the methodology, and he discussed the framework in which one analyzes the accumulated data.

## **UNDERGRADUATE MATHEMATICS DAY November 7, 2009**

The Schraut Memorial Lecture once again anchored Undergraduate Mathematics Day (UMD).

Eighty-one students and thirty-four faculty members participated in the 2009 UMD, the fourth biennial undergraduate mathematics conference hosted by UD.

In addition to the Schraut Memorial Lecture, **Kristin Duncan** (99), of San Diego State University, delivered an invited address entitled Keeping Up-to-Date with Bayes. She reviewed Bayes Theorem and discussed the perspectives of Bayesians and frequentists. She then illustrated applications of Bayesian methods with examples in criminal evidence, best methods to conduct clinical trials and the development of software.

Twenty-one contributed papers were delivered. UMD is an opportunity for UD students to participate in a mathematics conference and ten of these papers had UD authors or co-authors. There were contributors from other schools as well: Wright State University, Marshall University, St. Olaf College, Winona State University, Central State University, the University of Oregon, Wittenberg University, John Carroll University and the US Air Force Academy.

The presenters were invited to submit articles based on their presentations for refereed publication in electronic proceedings of this conference, which is now published as Volume 4 of the Electronic Proceedings of Undergraduate Mathematics Day (<http://academic.udayton.edu/EPUMD/>).

The conference has matured over the years as has the Electronic Proceedings. In addition to the alumni support, the Dean of the College of Arts and Sciences, Dr. Paul Benson graciously provided financial support. Moreover, the conference was supported by a grant administered by the Mathematical Association of America from the National Science Foundation, DMS-0846477. You can find the program and abstracts for talks and all other information about UMD 2009 at <http://academic.udayton.edu/MathEvents/>.

## **AN INVITATION TO THE 24<sup>th</sup> BIENNIAL ALUMNI SEMINAR ON CAREERS IN MATHEMATICS, 11/6/2010**

You are invited to participate in *Math Events 2010*, which will take place on Saturday, November 6, 2010. This year's program will consist of the 11<sup>th</sup> Annual Kenneth C. Schraut Lecture and the 24<sup>th</sup> Biennial Alumni Seminar on Careers in Mathematics. We are pleased to announce that **Dr. Eugene Steuerle** (69) has graciously accepted the invitation to serve as the 11<sup>th</sup> Kenneth C. Schraut Memorial Lecturer; undoubtedly, he will also be asked to serve as a panelist on this year's Career Panel.

Gene serves as the Vice President of the Peter G. Peterson Foundation. Previously, he has served as Senior Fellow of the Urban Institute, co-director of its Tax Policy Center, Deputy Assistant Secretary of the Treasury for Tax Analysis, President of the National Tax Association, and chair of the 1999 Technical Panel advising Social Security on its methods and assumptions. From 1984 to 1986, he worked as the original organizer and economic coordinator of the Treasury Department's tax reform effort.

Gene is also the author, co-editor, or editor of 15 books and hundreds of articles and Congressional testimonies, as well as a prolific columnist who has written for Tax Notes and the Financial Times. Among other honors, he received the first Bruce Davie-Albert Davis Public Service Award from the National Tax Association in 2005. He has a PhD in economics with a distinction in public finance from the University Wisconsin at Madison.

Currently, there is no further information; in general, the most current information can be found 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	Becky Krakowski, 2000	Gerry Shaughnessy, 1967
Paul Eloie, 1980	Ruihua Liu, 2004	Les Steinlage, 1969
Bob Gorton, 1969	Joe Mashburn, 1981	Muhammad Usman, 2007
Aparna Higgins, 1984	Shirley Ober, 1977	Lynne Yengulalp, 2009

### **Part Time Faculty**

Cheryl Edelmann, 1999	Steve Fuchs, 2005	John Loomis, 2007
Robert Finnegan, 1985	Brink Harrison, 2009	Scott Mitter, 2001
Bob Flavin, 2008	Joe Huelsman, 2003	Rusty Rizzotte, 2007

### **Professors Emeriti**

Stanley Back, 1998	Jack McCloskey, 2001	Ben Rice, 1998
Bill Friel, 1999	Harry Mushenheim, 2006	Carroll Schleppe, 2001
Tom Gantner, 2001	Jerry Neff, 1999	Ralph Steinlage, 2001
John Kauflin, 2006	Richard Peterson, 1998	Jerry Strange, 1999

## **FACULTY ACTIVITIES**

**Atif Abueida** returned from a two year visit to the United Arab Emirates University, and we are very happy to have him back. During the past year he co-authored “Multidecomposition of the complete graph into graph pairs of order 4 with various leaves” *Ars Combinatoria* **93** 403-407 and “Uniform k-Distant Even Trees are Harmonious” *Utilitas Mathematica* **78** 279-285. He gave two invited talks at the United Arab Emirates University in April, 2009.

**Arthur Busch** co-authored “Transitive partitions in realizations of tournament score sequences” *Journal of Graph Theory* **64**, no. 1, 52-62. Art gave invited talks at the University of Colorado Denver, at the Second Canadian Discrete and Algorithmic Mathematics Conference, and at the 2009 SIAM Annual Meeting.

**Wiebke Diestelkamp** co-authored “Box-Hunter resolution in nonregular fractional factorial designs,” *Journal of Statistical Theory and Practice* **3(4)** 879-889. She delivered a workshop on “Advising Undergraduate Mathematics Students” and served as a panelist for “Joining the Mathematical Community” for Project NExT in Portland in August. She wrote a book review for MathSciNet on “Design and Analysis of Experiments – Classical and Regression Approaches with SAS” by L. C. Onyia. In 2009 she was appointed by Dean Benson to serve as Equity Advisor for the UD College of Arts and Science, LEADER Consortium (funded by an NSF ADVANCE grant) and has just finished her first year in this position. LEADER stands for “Launching Equity in the Academy across the Dayton Entrepreneurial Region.”

**Shannon Driskell** co-authored the article “Mathematics teacher TPACK standards and development model” *Contemporary Issues in Technology and Teacher Education* **9(1)** 4-24, and the chapter “New directions in the research of technology-enhanced education” which appeared in the book *Technology leadership in teacher education: Integrated solutions and experiences*. She also obtained a provisional patent, along with several engineering students who helped with the design, for *Shape Shifters*, which is a device intended to be used to illustrate geometric principles to students. Shannon gave talks at the 59<sup>th</sup> Annual Conference of the Ohio Council of Teachers of Mathematics, the Society for Information Technology & Teacher Education 20<sup>th</sup> International Conference, and the 13<sup>th</sup> Annual Conference of the Association of Mathematics Teacher Educators.

**Paul Eloe** co-authored “Discrete fractional calculus with the nabla operator,” *E.J. Qualitative Theory of Diff. Equ. Spec. Ed. I*, **2009**, No. 3, 1-12 and “Initial value problems in discrete fractional calculus,” *Proc. Amer. Math. Soc.* **137** 981–989. He also enjoyed serving as co-Guest Editor for Special Edition I, 2009 of the *Electronic Journal of Qualitative Theory of Differential Equations*.

**Aparna Higgins** returned from her sabbatical at California State University Channel Islands. She began her tenure as Director of Project NExT last fall and continues her work on the advisory board for the Center for Undergraduate Research in Mathematics. Aparna continues to give numerous talks on conducting undergraduate research in mathematics, and in March presented the results in achievable pebbling numbers that she and her collaborators, Bill Higgins and Cindy Wyels, obtained. The presentation was an invited address at the Graph Theory Seminar at Saint Louis University.

**Peter Hovey** co-authored “A modest increase in weekly step counts improved cardiovascular function in healthy elderly women” *Journal of Exercise Physiologyonline* **12(6)** 25-32, “Analyzing the effects of l.e.d. traffic signals on urban intersection safety”, *ITE Journal* **80**, no. 6, 22-27 and “An empirical Bayes analysis using the statistical analysis system for evaluating safety effectiveness of a continuous two-way” *Journal of*

*Public Works & Infrastructure*, which will appear in the near future. He presented work done with student Brian Krilov (08) at the Joint Statistics Meeting in August and at the Spring Research Conference on Statistics in Science and Industry in May. His biggest news is that he will be on leave all next year at the Air Force Academy in Colorado. We will miss him, but wish him well in what should be a wonderful leave.

**Muhammad Islam** co-authored (with **Youssef Raffoul**) the article “Bounded solutions and periodic solutions of almost linear Volterra equations” *CUBO, A Mathematical Journal* **11(3)** 115-124, and presented some of his results at the 29<sup>th</sup> Southeastern-Atlantic Regional Conference on Differential Equations last October.

**Virginia Keen** authored the article “Creating children’s books and learning mathematics” *Ohio Journal of School Mathematics* **61** 7-13. Her paper “Using digital video to strengthen student learning of mathematics” was published in the proceedings of the conference Mathematics Education into the 21<sup>st</sup> Century Project. She gave numerous presentations on aspects of elementary mathematics education.

**Ruihua Liu** co-authored (with **Paul Eloe**, and **Jinyang Sun** (‘08)) “Double barrier option under regime-switching exponential mean-reverting process” *International Journal of Computer Mathematics* **86** 964–981. He also co-authored “New numerical scheme for pricing American option with regime-switching”, *International Journal of Theoretical and Applied Finance* **12(3)** 319-340, and (with **Youssef Raffoul**) “Boundedness and exponential stability of highly nonlinear stochastic differential equations” *Electronic Journal of Differential Equations* **2009(143)** 1-10. He authored “Regime-switching recombining tree for option pricing”, to appear in the *International Journal of Theoretical and Applied Finance*, and “Analytical approximation method of option pricing under geometric mean-reverting process”, *International Journal of Computer Mathematics* **86(6)** 1082-1092. He was invited by Wayne State University to present some of his results at their Mathematics Seminar. We are very happy to announce that Ruihua was granted tenure and promoted to the rank of Associate Professor. We are excited that Ruihua has reached these milestones in his career.

**Maher Qumsiyeh** was the faculty advisor for the Math Club last year, and will continue in that position next year. He co-authored a paper with **Gerry Shaughnessy** which appeared in the proceedings of the Joint Statistical Meeting: “Using the Bootstrap for Analysis of Unreplicated Two-Level Designs with Missing Responses”. He and Gerry presented these results at the meeting.

**Youssef Raffoul** has been honored with the 2009 Alumni Award in Scholarship. The citation appears below. He continued his impressive pace of research with 11 papers published in 2009, one of which was co-authored with **Ruihua Liu**. He presented “Resolvent and boundedness in Volterra equations on time scales” at the Central Meeting of the American Mathematical Society and “Population models with asymptotically constant or periodic solutions” at the Joint Mathematics Meetings.

**Gerry Shaughnessy** co-authored a paper with **Maher Qumsiyeh** which appeared in the proceedings of the Joint Statistical Meeting: “Using the Bootstrap for Analysis of Unreplicated Two-Level Designs with Missing Responses”. He and Maher presented these results at the meeting.

**Muhammad Usman** co-authored (with **Miriam Poteet** ('09)) “Stability of steady state solutions of the forced Kuramoto-Sivashinsky (KS) equation” *Advances in Differential Equations and Control Processes* **4**, 119-131, and (with B. Zhang) “Forced oscillations of the Korteweg-de Vries equation on a bounded domain and their stability” *Discrete and Continuous Dynamical Systems-Series A* **26(4)**, 1509-1523. He talked about his results at SEARCDE 29 and was invited to give a talk at Western Illinois University. He and Amit Singh of the Department of Biology offered a team taught course in mathematical biology in the spring of 2010.

**Lynne Yengulalp** joined the department this year. She is getting settled in with her teaching and research. She and **Joe Mashburn** met regularly to discuss her research into set-theoretic topology.

## **AWARD CITATION**

We are very pleased to announce that **Dr. Youssef Raffoul** has received the 2009 Alumni Award in Scholarship. The citation for the award follows.

### CITATION

On the occasion of his receiving the  
ALUMNI AWARD IN SCHOLARSHIP  
**Dr. Youssef Raffoul**

Dr. Youssef Raffoul has been an outstanding and highly productive faculty member in the Department of Mathematics since joining the University of Dayton in 1999.

Dr. Raffoul was honored for his significant contributions to research with the 2005 College of Arts and Sciences Award for Outstanding Research. Dr. Raffoul has sustained a high level of productivity throughout his career publishing over 55 peer-reviewed papers in some of the most prestigious journals in differential and integral equations. His remarkable rate of production has not diminished, with 35 papers published or accepted in the last four years and 12 more submitted and in review. Several of his articles have appeared on “Science Direct Top 25 hottest articles” list, a quarterly compilation of the most frequently downloaded journal articles in every academic discipline.

He has established a broad international set of collaborators. His theoretical work produces new mathematics, but some of his research is applicable to other disciplines. In recognition of the importance of some of his work to economics and ecological system dynamics, he was awarded a Sustainability, Energy, and Environment grant from UD. He also was awarded a grant by the Scientific and Technological Research Council of Turkey to travel to Turkey to collaborate with colleagues to use stochastic differential equations to model economic processes.

Dr. Raffoul has established an impressive network of international collaborators. This can be seen from the coauthors on his publications and from the workshops he organized in

Turkey. He continues to build on and to expand this network. Dr. Raffoul's collaborations extend to students as well, where he has published four peer-reviewed joint publications with three of his students. His work has been cited about 200 times by more than 40 different researchers.

The respect that the mathematics community has for Dr. Raffoul is seen by his position as a referee for some of the top journals in his research area. He is also currently serving on the editorial board of three well-respected journals in the area of differential equations. For these and many other outstanding accomplishments, Dr. Raffoul is the recipient of the 2009 Alumni Award in Scholarship.

## **ACTIVITIES OF UNDERGRADUATE STUDENTS**

The **Math Club and Pi Mu Epsilon Chapter** of the University of Dayton was very active again this year. The officers were **Joshua Cain** (Math Club President), **Josh Craven** (PME President), **Megan Miller** (Vice-President), **Charlie Suer** (Secretary) and **Matt Magner** (Treasurer). **Maher Qumsiyeh** served as the faculty advisor. As usual, the Math Club and Pi Mu Epsilon met together and regularly this year. This year the traditional Math Club picnic was held at Art Street, an innovative learning and living arts complex located in the heart of the South Student Neighborhood at the University of Dayton.

Elections for officers for 2010-11 resulted in **Joshua Cain** being elected President of the Math Club, **Josh Craven** elected as PME President, **Megan Miller** elected as Vice-President, **Katie Esselstein** elected as Secretary, and **Courtney Castle** elected as Treasurer.

Remarkably, Math Club organized and hosted the **14<sup>th</sup> annual High School Mathematics Contest**. This tradition was initiated by **Andrew Hetzel** (98) when he served as Math Club President. The key feature has been that Math Club administers this contest with minimal faculty involvement. This year, 39 teams representing 9 different schools participated. The winners were:

1st Place: FHS, Fairfield High School, Fairfield, Ohio

2nd Place: Monst0rs, Walnut Hills, Cincinnati, Ohio

3rd Place: J.A.M., Walnut Hills

The sixty-ninth annual **William Lowell Putnam Competition** was held on the first Saturday of December. Four students, **Joshua Cain, Joshua Craven, Charlie Suer and Yi Zhao**, participated. We congratulate Josh Cain, whose score of 21 ranked 543 out of 4036.

We conducted an informal induction ceremony for Pi Mu Epsilon, the national mathematics honorary society on Monday April 26th and there will be a formal induction early next fall. This year's inductees are:

**Danielle Bott**

**Jaye Samantha Flavin**

UD produced a team of three students for this year's **COMAP Mathematics Modeling Competition**. The team consisted of **Mathew Magner, Sarah Meyer and Charles Suer**. They were awarded a Certificate of Achievement.

## **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.

Most students now participate. Many of the math majors are involved in group projects representing service projects and coursework projects. Below, we shall keep the contributors focused to the posters that presented mathematics or mathematics education based research.

- **Jaye Flavin**, *Measles Epidemic: Studying the Spread Using Numerical Techniques*
- **Willy Balbach, Nathan Frantz, Brett Mershman and William Weger**, *Mathematical modeling of H1N1 flu*
- **Michelle Timmerman**, *The Black-White Achievement Gap: A Novice Teacher's Professional Development Plan for Closing It*
- **Danielle Bott**, *The Nine-Point Circle Theorem: A Look at Feuerbach's Circle*
- **Charles Suer**, *The Coloring Game on Certain Outerplanar Graphs*
- **Charles Suer**, *Graph Decompositions and Equitable Edge Colorings*
- **Eric Krissek**, *An Ethnographical Exploration of Math and Science in a Kenyan Primary (K-8) School*
- **Matthew Magner**, *Lovasz's Conjecture for Semidirect Products, Dihedral Groups, and Alternating Groups*
- **Angela Umstead**, *A Computational Study of the Fizehugh-Nagumo Action Potential System*

**Integration Bee** has become a popular event during the Stander Symposium. **Art Busch** again organized this year's Bee and served as host for the event that was held in Chudd Auditorium. More than 50 teams consisting of more than 120 students participated this year. First place went to a team of engineering students, It's Not the Length of the Vector That Matters, it's How you Apply the Torque. One team member was overhead saying, "Finally, after three years." Second place went to Robot Unicorn Attack! There was a tie for third place with those teams being Game Theory, Set Theory, Match and OU EST CE QUE J'AI VU CELA.

## **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 12, 2010. 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 three math majors participated. By the titles, you can sense that many students are double majors or are interested in interdisciplinary work. **Eric Krissek** was a co-winner of the Patrick F. Palermo Honors Program Founders Fund Award which recognizes outstanding honors thesis projects.

**Eric J. Krissek**, *Ethnographical Exploration of Math and Science Pedagogy in a Kenyan Primary (K-8) School*

**Matthew P. Magner**, *Hamiltonian Cycles in Cayley Graphs*

**Michelle L. Timmerman**, *Black-White Achievement Gap: A Novice Teacher's Professional Development Plan for Closing It*

### **Poster at Joint Mathematics Meetings**

**Charlie Suer** presented the poster, *The Coloring Game on Certain Outerplanar Graphs*, at the Joint Mathematics Meetings in San Francisco. Charlie was presenting results obtained during his REU experience at Linfield University last summer.

### **Rubik's Cube Wizard**

**Chester Lian** is a Rubik's Cube wizard. He's ranked 14th in the world in solving a cube blindfolded. He's 35th in the world in solving multiple cubes blindfolded (by the way, he has solved 12 cubes blindfolded at once). He's "60 to 70th" in the world solving a cube one-handed. Chester says he does it with "almost no thinking involved. It's muscle memory and intuition." Writing this blurb reminds one of **Brian Donohue** (85).

## **AWARDS**

Recognizing that our undergraduate majors perform considerable service in support of the mission of this department, the Award of Excellence in Support of Mathematics was awarded for the first time in 2010. The first recipient is **Charles Suer**.

The co-recipients of the 2010 Pi Mu Epsilon Award are **Danielle Bott** and **Brian Bradley**. This is an award for excellence among second year students in mathematics.

The 2010 Brother Joseph W. Stander, S.M., Award of Excellence in Mathematics Education recipient is **Michelle Timmerman**. This award for excellence goes to a graduating senior in the teacher licensure program with a principal teaching field in mathematics.

**Eric Stoiber** was awarded the 2010 Maureen E. O'Rourke Marianist Award which recognizes a graduating senior who exemplifies the Marianist Charism on campus.

**Eric Krissek** was a co-winner of the Patrick F. Palermo Honors Program Founders Fund Award which recognizes outstanding honors thesis projects.

## **PLANS OF RECENT GRADUATES**

**Willy Balbach** will enter the master's program in applied mathematics at the University of Dayton.

**Jaye Flavin** has a position with a brokerage firm in the Chicago area.

**Eric Krissek** has taken a teaching position with the Dayton Public Schools and he has been assigned to teach mathematics at Ruskin Elementary/Middle School.

**Natalie Leonhardt** will enter the Lalanne program. She has been assigned to teach in Indianapolis.

**Matt Magner** will enter law school at Georgetown University.

**Brett Mershman** will enter a master's program in statistics at Ball State University.

**Elham Negahdary** will begin a Ph.D. program in financial mathematics at the University of Calgary.

**Katie O'Brien** may accept an internship with Athletes in Action; at the time the writing of this newsletter, she had an interview to discuss an opening with Centerville High School.

**David Saliba** is employed as a risk analyst at Dayton Power & Light.

**Charlie Suer** will enter a Ph.D. program in mathematics at the University of Louisville.

**Michelle Timmerman** is considering an offer to teach mathematics in the Jefferson County Public School system in the Louisville area.

## **ACTIVITIES OF GRADUATE STUDENTS**

We currently offer three master's degrees, the Master of Science in Applied Mathematics (MAS), the Master of Financial Mathematics (MFM), and the Master of Mathematics Education (MME).

**Megan Cable (Aug 09)** earned the MAS degree. She worked with **Youssef Raffoul** and wrote a math clinic project on "*Exponential Stability and Instability in Multiple Delay Differential Equations.*"

**Sri Krishna Chirumamilla (Dec 09)** earned the MAS degree. He worked with **Youssef Raffoul** and wrote a math clinic project on "*Boundary Layer Phenomena and Perturbation Methods in Non-homogeneous Differential Equations.*"

**Joe Jordan (Aug 09)** earned the MFM degree. He worked with **Dr. Dale Courte** of the Department of Computer Science and wrote a math clinic project on “*Automatic Trading Rule Creation Using Grammatical Evolution.*”

**Qian Li (Dec 09)** earned the MFM degree. She worked with **Dr. Carl Chen** of the Department of Economics & Finance and wrote a math clinic project on “*The Economic Dynamics of Financial Crisis.*” She is currently in a graduate program in Accountancy at George Washington University.

**Chelsea Partusch (Aug 09)** earned the MME degree. She worked with **Becky Krakowski** and wrote a math clinic project on “*The Effect of an Interactive Electronic Whiteboard on Student Achievement and Attitude in a Convenience Sample of Suburban Ohio High School Algebra Students.*”

**Sandra Venable (Aug 09)** earned the MME degree. She worked with **Shannon Driskell** and wrote a math clinic project on “*Navigating Toward Enhanced Student Learning.*”

**Richard Wuebker (May 10)** earned the MFM degree. He worked with **Ruihua Liu** and wrote a math clinic project on “*Analysis of the Pricing and Hedging of Spread Options.*”

**Ashley Yontz (Dec 09)** earned the MFM degree. She worked with **Dr. John Ruggiero** of the Department of Economics & Finance and wrote a math clinic project on “*Using Data Envelopment Analysis (DEA) to Measure the Efficiencies of Pharmaceutical Preparation Companies.*”

## **ALUMNI NEWS**

**Jeffrey Diller** (88) has earned the rank of Professor at the University of Notre Dame. Jeff has been in the Department of Mathematics since August, 1998.

**Julie (Anderson) Mause** (88) and her spouse, **Norm** (88), live with their four children in Colorado.

**MaryBeth (Anderson) O’Keefe** (87) and her spouse, **Jim** (87), live with their three children, Matt (junior in HS), Katie (sophomore in HS), and Connor (grade 3) in the Chicago area. MaryBeth has been working for Zurich Insurance as an actuary for the past twenty years.

**Colleen Hoover** (91) and her spouse, Mike, are now proud parents of their second child, Maclean Gregory. Maclean joins his older brother Travis. Colleen’s photo can be found on page 9 of the AWM Newsletter in which a photograph of the Shafer Prize winner and honorable mentions from the year 1990 is reproduced.

**Andrew Hetzel** (98) is currently on the faculty at Tennessee Tech. He reports that he and the family (spouse, Kristi, and three year old daughter, Katie) are doing well. His parents live in Beavercreek and so, Andrew does get back to the Dayton area regularly.

**Geoffrey Dietz** (00) and his spouse, **Amber** (00), announce the birth of their third child, William Ambrose, who joins big sister, Rachel and big brother, Joseph. Geoffrey is on the faculty at Gannon University.

**Casey Malone** (02) dropped us a surprise e-mail message. Casey has worked as an actuary since graduating. He will return to a graduate program at UNC Charlotte this fall.

**Joanne Sklodowski** (05) sent us the following message for the newsletter. I worked for a while in Cleveland at a job that did not utilize my Math degree at all, and I couldn't get a statistics job (what I really wanted) because my degree was more theoretical than applied. So, I got a fellowship to get my Masters in Applied Statistics at The Ohio State and finished my degree by March 2008. While at OSU, I applied to (and accepted) the job I have had for two years at Eastman Chemical Company. Just like the name suggests, we make chemicals here. Eastman makes a myriad of products for a lot of different customers. It is the single largest domestic chemical plant! I am part of a team of 7 statisticians. The way it works is that each statistician has their own area of the company to support. Each area is quite varied in products, but we mostly deal with the same problems and objectives. Once a month, we get together and discuss problems and solutions that we encounter that could potentially help another statistician. This "teamwork" strategy helps us all grow and learn from each other. I've found that it is uncommon to have this type of environment because of competition in bonuses, or even needing to outperform peers to keep your job! [We get bonuses, but we don't have cut throat competition.] On any given day, I could work on quality control (creating control charts, determining if a process shifted), design an experiment (fractional factorials, response surface, even mixtures!), and use the results from these DOEs (or even use historical data) to create models in order to optimize a process or explain variability of the process better. Because of the variety of products, I get a variety of projects! The area I support makes the plastic resins that create the films for LCD screens. As you probably know, the optical and processing properties of this resin must be optimized for the customer. I almost act like a consultant (even though I'm employed full time) and engage my "clients" (the engineers and managers). I also make sure they're asking the right questions and are doing the most efficient/proper designs and analyses. I'm very happy with my job responsibilities and work environment. I feel very fortunate that I found a company that encourages me to grow and learn, where I feel part of a team, and that is varied with people and projects on a daily basis.

**Fatima Bousso** (06) left her position at ING and has returned to Columbia University in an MPA program in development practice.

**David Prier** (06) completed a Ph.D. in mathematics from Auburn University. He has accepted a tenure track position at Gannon University beginning this fall.

**Nancy Buck** (08) has completed an M.S. degree in mathematics at UNC Greensboro and was accepted into Math for America. She attended the Joint Mathematical Meetings this year in San Francisco and presented a talk based on her master's thesis. Her father, **Robert Buck** (69), who is Chair of the Department of Mathematics at Slippery Rock University, also attended. The Buck family was visiting **Steve** (03) who is a Ph.D. candidate in Economics at UC Berkeley.

**Lanre Oriowo** (08) has returned to UD to earn licensure to teach high school mathematics.

**Bob Zeng** (08) returned to Moody (Shanghai). He initially was working in the finance industry but he has since returned to school and he is currently teaching courses in econometrics, financial engineering and fixed income.

**Danielle Carleton** (09) lives in Fort Wayne and is employed by Buck Consultants.

**Megan Johns** (09) returned to walk in the May 2010 graduation ceremony. Megan graduated last year and missed her graduation ceremony because of health issues. Happily, good health has returned; she works for Proctor & Gamble, and she now accepts speaking engagements to increase awareness on heart health.

**Lu Ee Peh** (09) had taken a lecture/research position in Sunway University College in Malaysia. She has recently left teaching and is moving to the finance industry.

**Miriam Poteet** (09) and her spouse, Perry, announce the birth of their daughter, Lydia Ruth. Miriam is a Ph.D. candidate in mathematics at the Air Force Institute of Technology.