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The University of Dayton_____ **1997**
Mathematics Department
NEWSLETTER

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

CHAIRPERSON'S MESSAGE
The past year has indeed been a year of change and transition. We have been saddened by the passing of Brother Bill Bellmer, Bert Prather, and Ken Schraut, each of whom served here for many years as professors of mathematics, and Brother Ed Zahn, who taught mathematics here for several years after retiring from Chaminade-Julienne High School. We have begun a period of rebuilding of the Department, which will extend over the next decade, with the retirements of Stan Back and Dick Peterson, in May of 1997, and Ben Rice, in December of 1997. We are currently involved in searches for two positions, one in statistics and one in mathematics education, to fill the voids left by the first two retirements. Next year we anticipate two additional searches to cover the areas of analysis and applied mathematics.   The on-again/off-again project to upgrade and modernize the science facilities on campus seems to be moving off of dead center. We are no longer talking about a connector building between Sherman and Wohlleben Halls, but are concentrating our discussion on the renovation of the existing buildings. We began the academic year with hallway ceilings in Sherman Hall that were spray-painted black in an effort to "hide" the mixture of pipes and wires where the ceiling tiles had been removed. In the wake of the resulting faculty/student reactions, we are now in the process of having the ceiling tiles re-installed, and with new lighting fixtures. But the really good news is that our Dean has been given the authorization to hire an architect firm, with a national reputation and experience for designing state-of-the-art classroom and laboratory facilities, to put together a conceptual design for the renovation of Sherman and Wohlleben Halls. The firm will be selected prior to Christmas from among three finalists to be interviewed, and their main work will be conducted over the winter and spring. At present, the target date for completion of the conceptual design is at the end of the winter term, after which the designs will become part of the fund-raising presentations that will finally realize the goal of renovating the facilities to support our programs over the next quarter century.   During this renovation, it is expected that the funds raised at the summer, 1992, as a tribute to Doc Schraut, will be spent as intended in the invitation to that event: "The University will name an appropriate room in this facility in honor of Dr. Schraut and will place a permanent plaque in this room commemorating Dr. Schraut's dedication

and listing those who contributed to this project in his name." I am hopeful that the next issue of this Newsletter will be able to report substantial progress on this project.

On behalf of the our faculty and students, I wish you a happy holiday season and a successful new year.

Tom Gantner

A NOTE OF THANKS
Just as Dad was consoled by the many cards and notes he received after Mother's death in April, we would like to gratefully acknowledge the prayers, letters, cards, and support we received following Dad's unexpected death in October. It is quite inspirational to hear of the many ways in which he touched people's lives.

Marilyn, Frank, Greg and Jeff Szorc

THE KENNETH C. SCHRAUT MEMORIAL FUND
This Fund, established in Doc Schraut's memory, will be used to endow an annual sequence of invited guest speakers whose target audience will consist of undergraduate students. The goal will be to to present applications and/or topics in mathematics that are accessible to undergraduate students, from a wide variety of majors, who have achieved an understanding of elementary calculus. At the time of this writing, over $6,500 in contributions have been received, and we can expect that about 5% of the principal will be made available to the Department annually for its stated purpose; any earnings above that amount will be added to the principal as a hedge against inflation. To date, the following have given generously to this Fund:

Thomas Beckert	Joseph Belna
Alan Berens	William Bianco
Birthright of Kokomo	Carey Clouser
John Condon	Carol DeMario
Nora Duffy	Paul Eloe
Susan Enyart	Steve Fern
Douglas Folzenlogen	David Gantose
Thomas Gantner	Robert Goubeaux
James Grugurich	Aparna Higgins
Mark Holysz	Sara Louise Hinders
Timothy Kelaghan	Alex Koler
Laura Kroupa	Emil Krueger
John Lagnese	Frederick Lane
George Lang	Kathleen Lefevre
Patrick Luby	John McGrath
James Mescher	Michael Moell
Robert Nero	Thomas O'Bryan
Robert Pearson	Edward Pekarek
Richard Pirchner	Daniel Riehle
Douglas Romer	Jack Scheidt
Richard Schladen	Harold Schoen
James Seiler	Joseph Severs
William Skelly	David Small
Ralph Steinlage	Ronald Steinkirchner
Eugene Steuerle	Clarence Szorc

Michael Woltermann
NCR Corporation Matching Gift Program employee: Daniel Riehle
TRW Foundation matching gift from David E. Small

THANKS!
We wish to acknowledge the alumni, friends and faculty who have specified that their gifts to the University of Dayton be directed to the Department of Mathematics. These donations are greatly appreciated because they go into a special fund that exists outside of our normal operating budget, and they can often be used to leverage additional money for needed equipment and other projects. For example, about $3,000 from this fund will be used, along with additional money from the Dean and the upper administration, to equip one of our larger classrooms with a computer projection system and digital camera; the expected total cost of this project will be in the neighborhood of $20,000. Once this system is in place, hopefully this spring, we will be able to access the worldwide web in the classroom, as well as display images through the projector from a wide variety of sources. According to the University Advancement Office, the following people have made such designated gifts to the Department of Mathematics since December 1996:

Jonathan Baniak (81)	Frank Demana (60)
Paul Eloe	Tom Gantner (62)
Aparna Higgins	Bill Huster (78)
Jane Pendergast (74)	Tim Rice (88)
Robert Springer (77)	

In addition, corporate gifts were received from the Arthur Andersen Foundation (for Tim Rice), the Eli Lilly Foundation (for Bill Huster), and Lockheed Martin (for Jonathan Baniak).

FACULTY UPDATE

Full Time Faculty

Paul Eloe, 1980	Harry Mushenheim, 1965
Bill Friel, 1963	Jerry Neff, 1990
Tom Gantner, 1966	Irina Panasyuk, 1997
Bob Gorton, 1969	Ben Rice, 1960
Aparna Higgins, 1984	Paula Saintignon, 1983
Muhammad Islam, 1985	Gerry Shaughnessy, 1967
John Kauflin, 1966	Joe Stander, SM, 1959
Joe Mashburn, 1981	Ralph Steinlage, 1966
Jack McCloskey, 1965	

Part Time Faculty

Martha Carter, 1997	Shirley Ober, 1977
Eric Cheney, 1989	John Pfetzing, 1997
Bob Finnegan, 1985	Betty Schneider, 1989
Tom Grilliot, 1990	Mardjan Shokoufi, 1997
Don Jurick, 1991	Les Steinlage, 1969
Karen Mickel, 1992	

IN MEMORIAM
Brother William J. Bellmer A Mass of Christian Burial was celebrated February 17, 1997 at Queen of Apostles Chapel, Mount St. John, Beavercreek, for Marianist Brother William J.

Bellmer, 96. He died February 13 at the Franciscan Medical Center, Dayton campus. A Brooklyn, N.Y., native, he professed first vows in the Society of Mary in 1917 and perpetual vows in 1924. He received a bachelor's degree in mathematics from the University of Dayton in 1928 and a master's degree in mathematics from Catholic University in 1932. He taught in grade schools in Dayton and Baltimore; in high schools in Pennsylvania, New York and Michigan; and at UD, 1932-1979, serving during part of that time as associate dean of science and head of the mathematics department. Interment was at Queen of Heaven Cemetary, Mount St John, Beavercreek, Ohio. Alberta Ginstie Prather, a former UD associate professor and founder of the Kettering and Suburban Senior Citizens Group, died this fall in Fairfax, Va. She was 94. A resident of Falls Church, VA., Mrs. Prather was a graduate of Stivers High School and Miami University. She taught mathematics at UD for more than 20 years and helped organize the Kettering and Suburban Senior Citizens Group in 1963. Mrs. Prather was awarded a lifetime membership on the board of trustees of the Group and received the Kettering Mayor's Award for volunteer service. She is survived by her daughter, Rebecca Prather of Falls Church, Va. Brother Edward A. Zahn A Mass of Christian Burial was celebrated on August 30, 1997 for Edward A. Zahn, S.M.. Brother Ed was 80 years old and a member of the Society of Mary for 62 years. He died on August 27, 1997 in Dayton, Ohio.   A native Daytonian, Brother Ed graduated from Mount St. John Preparatory School in 1934, professed first vows in 1934, and perpetual vows in 1939. He received a BS degree from UD in 1938 and an MA in mathematics from Ohio State in 1946. He taught mathematics, physics, and religion in Cleveland, Sioux City, Iowa, Dayton, Philadelphia, Mineola, NY, and Kalamazoo, MI. He completed his educational ministry at UD, teaching mathematics in the Department of Management and the Mathematics Department. Interment was at Queen of Heaven Cemetary, Mount St. John, Beavercreek, OH

REMARKS OFFERED AT THE FUNERAL OF DR. KENNETH C. SCHRAUT (November 3, 1997)

Prepared and Presented by Dr. Harold G. Mushenheim Department of Mathematics, University of Dayton Family members, relatives, and friends of Doctor Schraut,

When Doc's family requested that someone in the Department say a few words about him at the service, and that that someone might be me, my initial response was to decline. In part, my reluctance arose from the fact that without a piece of chalk, an eraser, and a blackboard to run around in front of, I find public speaking not one of my favorite things. In greater part, though, I believe I hesitated because of the severe boundary condition contained in the phrase "a few words." I realized that rendering even small justice to Doc's accomplishments and life would require much more than that. My own first encounter with Doc occurred in the early fifties in his office in the Albert Emanuel Library building, when he directed the project which eventually grew into the Research Institute. He had then already been on the campus scene for some twelve years or more. I am sure that most of us here today can recall clearly the circumstances of our first meeting with him. Perhaps, for you, it was as a freshman pre-med or engineering student who, just told--in no uncertain terms--to "mount the sphere, young man," realized only later that Doc was telling you to "get on the ball." Indeed, many of us here can say that our lives would probably be much different today had we not entered into Doc's force field.

His special genius as an educator derived, I think, from the intense personal interest he had in each of his students and in getting them to collaborate with him and each other in the learning process.   In his position as chair of the Mathematics Department, he developed a highly successful program of employing undergraduate teaching assistants. This provided many students with the opportunity of putting their knowledge at the service of others, and, in so doing, of perfecting their own. A disproportionately high percentage of these students were inspired by Doc and this experience to take on the challenge of graduate school and/or a career in mathematics

education. The biennial alumni seminars which he began, and which still flourish, evolved out of this philosophy of passing on to others the educational advantages which one received.

Over the years, Doc was involved in the advising of pre-medical students, and he taught a calculus course specially designed for them. The lecture notes which he generated for this class were in a constant state of development. Revision began immediately upon the completion of each new draft. Again, Doc--as he did in mathematics--brought back to campus many alumni physicians to enrich the education of the current class of pre-meds.

Doc had a strong sense of how the university ought to be run for the good of all, and he did not hesitate to inform those who had need of this knowledge. In all likelihood, at this moment, there are, in many file drawers on campus, examples of what he himself termed "fussing letters," communications directed to right a wrong or set a policy straight. He loved languages, and once even set himself to learning a bit of Arabic, in order to assist some of our Mid-Eastern students. He had a rich vocabulary and liked to use it, especially in his letters, "fussing" or otherwise. His annual letter to hundreds of alumni and friends was a harbinger of the Christmas season.

Doc possessed an excellent memory and an arsenal of stories, some involving himself and some very funny. I once went with Doc to a mathematics convention in New Orleans. At that time, he was feuding with a certain Father so-and-so about some parish matter. Doc was really looking forward to meeting with his mathematical brethren, getting out of Dayton's January chill, and certainly being out of touch with his nemesis on the homefront. As we were settling our registration business at the hotel desk, I looked up and was startled to see this very Father so-and-so coming out of the elevator. I started to tell Doc not to look in that direction, but it was too late. For the rest of the meeting, Doc was--as he would put it in his own words--"not quite [him]self." Doc liked the Rumpole stories and the televison shows based on them. I personally thought this very appropriate, as it seemed to me that there was something of Doc in Rumpole and something Rumpolean about Doc. When, for instance, he would chortle about something that the character "She Who Must Be Obeyed" said or did, I knew that he was speaking affectionatelyof his own beloved Virginia.

His intelligence and interests were wide and deep. He was in fact a fine woodworker. Examples of his craftsmanship were displayed in a beautiful exhibit of photographs at the funeral home yesterday.

As for all of us, some of the day-to-day circumstances of life moved his spirits. For Doc, having a good secretary lifted them skyward; having a poor one was a source of deep travail. Even though I did not intend to provide an archival record of Doc's work in these "few words," I must mention his long service to the American Society for Engineering Education and to Honor Seminars of Metropolitan Dayton with which he was associated from its inception. I have tried, rather, to provide a few strokes of the pen, swiftly drawn, so that each of you can fill in your own portrait of this father, grandfather, teacher, adviser, mentor, colleague, and friend.

How fitting that the University of Dayton conferred upon Doc the title of Distinguished Service Professor. His life was indeed one of service, truly distinguished.

SABBATICALS
Bob Gorton was on sabbatical during the winter term of 1997. He studied Fuzzy Sets and investigated classroom applications of MAPLE.

RETIREMENTS

Stan Back retired from the UD faculty in May of 1997. He began teaching in the Mathematics Department in June of 1959 with speciality in probability and statistics. Stan received his B.S. in mathematics at UD in 1957 and an M.S. degree in Statistics at Purdue University in 1959. He worked several years at UDRI, was a member of the American Statistical Society, and served on various University and Departmental committees during his tenure at UD.

Dick Peterson retired also in May of 1997. He joined the faculty as a member of the Mathematics Department in September of 1957. Dick was awarded his B.A. degree in 1955 from Hiram College and he received his M.S. degree in Mathematics from Purdue University in 1957. In August of 1966 Dick was named Assistant Dean of the College of Arts and Sciences and he continued in that position until recently when he rejoined the mathematics department as a full-time member. Professor Peterson was a member of the MAA, the NCTM, the Ohio Council of Teachers of Mathematics, and Phi Delta Kappa. He served on numerous University and departmental committees while at UD.

PUBLICATIONS

Paul Eloe (with V. Doddaballapur) "Monotone and quadratic convergence of approximate solutions of ordinary differential equations with impulse", Communications in Applied Mathematics..... (with Y. Zhang) "A quadratic monotone iteration scheme for two- point boundary value problems for ordinary differential equations", Nonlinear Analysis. ....(with V. Doddaballapur and Y. Zhang) "Quadratic convergence of approximate solutions of two-point boundary value problems with impulse", Electronic J. Differential Equations. ....(with J. Henderson) "Inequalities for solutions of multipoint boundary value problems", Rocky Mountain J. Mathematics.

Muhammad Islam "Almost periodic solutions of nonlinear integral equations", Proceedings of the Second World Congress of Nonlinear Analysts, Athens, Greece, 1996.....(with Arif,Hossain, and Awwal) "Refracting system for annular Gaussian-to-Bessel beam transformation", Applied Optics....(with Eloe) "Lidstone boundary value problems for fourth order ordinary equations with impulse effects", submitted for publication.

PROFESSIONAL MEETINGS AND SERVICE

Paul Eloe organized a Special Session in Boundary Value Problems for the International Conference on Differential Equations and Dynamical Systems in Waterloo, Canada, in August. Paul presented a paper in this session. He accepted an invitation to serve on the editorial board for the journal Communications in Applied Analysis.

Muhammad Islam gave an invited presentation at the Second International Conference on Differential Equations and Dynamical Systems in Waterloo, Canada, in August. He was Co-chair of a Session on Aerospace Engineering, 15th Southern Biomedical Engineering Conference, Dayton, March 1997.

UNDERGRADUATE ACTIVITIES

T. J. Highley ('98) and Stephen Hartke ('99) were among the top finishers in a programming tournament sponsored by the Association for Computing Machinery. They pulled off a fourth-place finish in the Nov. 14 regional at the University of Notre Dame by topping power- house Carnegie Mellon University and will advance to the international competition in Atlanta, Feb. 25-28. Carol Lijek ('97) was given the Senior Award and Stephen Hartke was honored as Sophomore of the Year last year.

GRADUATE ACTIVITIES

Vidya Doddaballapur, Laura English, Meer Hossain, Dawn Mumford, Martina Ruzickova, and Yongzhi (Tony) Zhang were awarded Master of Science degrees in Applied Mathematics. Vidya and Tony, under the supervision of Paul Eloe, studied a generalized quasilinearization method which yields quadratic convergence of iterates and made extensions to apply to boundary value problems with impulse effects. Three refereed manuscripts have been accepted for publication. Vidya is currently employed by Televentures in Austin, Texas; Tony is continuing his studies at UD in the computer science department. Laura and Martina, under the supervision of Gerry Shaughnessy, studied Computer Response Time Optimization using Taguchi's Parametric Design. Martina is currently employed by Capital One in Washington, D.C. Meer, under the supervision of Muhammad Islam, studied Refracting System for Annular Gaussian-to-Bessel Beam Transformation. A paper under the same title has been accepted for publication in Applied Optics. Meer is employed by Spectra Physics Laser Plane, Inc. and recently moved to Atlanta. Dawn Mumford, under the supervision of Paul Eloe and Dr. John Reising of Engineering Management, studied An Application of Queuing Analysis in a Redesign of the UD Bookstore.

SENIOR PLANS

Emilie Greenwald (BSE 97) is teaching 9th grade mathematics at the Jonathan Alder High School in Plain City, Ohio. Michael Hoch (BS 97) is teaching mathematics in San Diego. Carol Lijek (BS 97) was awarded an assistantship at Michigan State University and is working toward her Ph.D. in Econometrics. Cortlund Sattler (BS 97) is working in banking and plans to pursue his MBA degree. Benji Sayer (BS 97) is a teacher for Joy Outdoor Education Center in Clarksville, OH. Leanne Voos (BS 97) teaches mathematics in the Baltimore County Public Schools. Steve Wyrick (BS 97) is supervising his construction company in the Dallas-Ft. Worth area.

ALUMNI ACTIVITIES

Jonathan Baniak (BS 81) and his wife, Natalie, are proud new parents of Michael, born on October 13, 1997. Paul Campbell (BS 67) and his family are spending the current academic year in Augsburg, Germany. Paul is associated with the Institute of Mathematics at the University of Augsburg while on a sabbatical leave from Beloit College. Just before leaving the country, Paul donated another three cartons of new mathematics monographs for our departmental library. Brian Donahue (BS 85), his wife, Ann, and their daughter Nicole (19 months) live in Nashville, Tennessee and are expecting a new family member. Brian is an assistant professor in the Department of Anesthesiology in the School of Medicine at Vanderbilt University. Sean Donahue (BS 84), his wife Janet (Locke) (BS in Biology '84), and their sons, Patrick (6), Eric (4), and Luke (2) live in Nashville, Tennessee where Sean is an assistant professor in the Department of Ophthalmology in the School of Medicine at Vanderbilt University. He holds joint appointments in pediatrics and neurology. Janet is an MD and works in the ER at St. Thomas Hospital. Marla Prenger (BS 90) is employed as a statistician by Procter and Gamble in Cincinnati. She returned to UD to speak to the Mathematics Club on statistics in industry. Paul Judd (BA 82) and his wife, Linda, announce the birth of twin daughters, Ellen and Laura, on June 19, 1997, who join their sister, Emily (4), at the family home. Paul is a senior actuarial associate at Principal Financial Group in Des Moines, IA.

CAREERS IN MATHEMATICS

If you know any high-school age students who excel in mathematics, but who are not aware of the variety of careers open to someone with a solid training in mathematics, then here is a book to recommend. 101 Careers in Mathematics was recently published by the Mathematical Association of America, and can be ordered for about $20 at (800) 331-1662. Among the 101 people highlighted in that publication are two of our own: Marla Prenger (90), who earned a master of applied statistics degree, and is currently an associate scientist at Procter and Gamble

in Cincinnati; Nancy Roderer (67), who earned a master of library and information science degree, and is currently director of the Harvey Cushing/John Hay Whitney Medical Library at Yale University.

THE ALUMNI CAREER NETWORK
The office of Alumni Relations has been working to establish a data base of alumni who are willing to act as resource contacts for students who are about to graduate and enter the job market. They currently have about 2,900 alumni volunteers and hope to have the information available through the Alumni Relations home page (http://www.udayton.edu/alumni/) on the web beginning sometime in mid-January. Each alumni volunteer will have a web page containing name, address, phone, employer, career history, and rules of engagement (e.g. "Don't call me at work", or "Don't call me at home after 10 P.M."). The data base will be sortable by major, location and job title, and it will be password protected (current students and alumni will be able to access the information via student identification and/or social security number).   At this time, only UCLA has a similar program for networking students with alumni who share career interests. If you are interested in joining this worthwhile effort, you will be able to use the web to join it, as well as update the information on on your personal page.