

VAN VLECK NOTES:
THE
NEWSLETTER
of the
MATHEMATICS DEPARTMENT
of the
UNIVERSITY OF WISCONSIN
MADISON

Number 4, SUMMER 1991

We have received many letters from Wisconsin alumni in response to last summer's newsletter, and we want to thank all who have written or emailed. It is nice to hear from old friends and to know that so many people have warm feelings and good memories about the time they spent either as students or faculty in the UW-Mathematics Department. And of course we here have many fond memories of our former students and colleagues. Some people, like Joe Malkevitch (York College, CUNY), Dave Guichard (Whitman College) and John Baxley (Wake Forest University) wrote us about former students of theirs who are attending or are thinking of attending graduate school at UW-Madison. Others like William Jaco

(Executive Director of the AMS), Jeremy Haefner (University of Colorado, Colorado Springs) Fred Gooding (Francis Marion College) and Frank Sullivan (University of Padova, Italy) wrote us simply to express their pleasure about hearing about what was happening at Wisconsin. There was even more opportunity this past year to catch up on news from Madison. A reunion-party was held at the San Francisco AMS annual meeting in January for all those with connections to UW-Madison. More than 100 people showed up at Bardelli's restaurant for a very lively affair. It was great seeing and talking to so many old friends. We plan to make this an annual affair. In particular, another party is being planned for the Baltimore meeting

in January, 1992. Information on the place and time of the party will be available at the meeting from current UW faculty. In addition, Charlie Slavin (University of Maine) is hosting a party/cookout for Wisconsin people at his house in Orono during the summer meetings at the University of Maine (August, 1991). And there are still plans to have a 30th reunion in Madison in 1993. Great opportunities to keep in touch with old friends!

Last newsletter we started out by telling you about summer in Madison. Well, how about winter? Undoubtedly, most of you remember (or are still experiencing) mid-western winters. On December 3, 1990 Madison recorded its largest snowfall in one day - 17.3 inches. It was so bad outside that the University officially closed (a rarity) (actually the University didn't close until midmorning after some of us had braved the cold and snowy Bascom Hill winds and had taught our classes), and the Madison schools were closed for two consecutive days. But as anyone who has been in Madison for the last 25 years will admit, the winters are getting milder. So now for some warm news!

1 Alex Nagel is new Chair

Si Hellerstein has completed his three year term as Chair of the Mathematics Department. His effective and vigorous leadership has helped keep our department among the best, we think, in the country and he has left us in an excellent position as we approach the year 2000. *Alex*

Nagel has been elected the new Chair and he will take up this position in the fall. *Dietrich Uhlenbrock* continues as Associate Chair. The new T.A. Supervisor is *Dan Rider*. Also continuing are *Frank Forelli* as Graduate Coordinator and *Phil Miles* as Placement and Precalculus Supervisor. After a two year sabbatical as Undergraduate Coordinator, *Mike Voichick* resumes that position in the fall. Also to be noted is the retirement of *Sylvia Mitchell* as Department Secretary. That position is now held by *Gen Novara*. Starting her 27th year as Department Receptionist is *Ann Caruso*.

2 New Faculty

We've completed a very successful hiring year enabling us to attract several outstanding mathematicians to Madison. First to be noted is that *Franc Fostneric* and *Andreas Seeger*, who were hired the previous year will be joining us for the first time this fall as Associate Professors. *Efim Zelmanov*, also hired the previous year, is expected to join us in the fall of 1992.

Robin Pemantle of Oregon State University has been hired as an Assistant Professor. Robin, who received his Ph.D. from MIT in 1988, specializes in Probability and Stochastic Processes and also has interests in Combinatorics. He will be on leave in the fall and is expected to be here for the spring 1992 semester.

Panagiotis Souganidis of Brown University is a new Professor. Panagiotis is a 1983 Wisconsin Ph.D. (supervisor was

Mike Crandall) and works in Nonlinear Analysis and Nonlinear Partial Differential Equations. He has received both an Alfred P. Sloan Fellowship and a Presidential Young Investigator Award.

Appointed as an Assistant Professor is *Thaleia Zariphopoulou-Souganidis* of Worcester Polytechnic Institute. Thaleia received her Ph. D. in Applied Mathematics from Brown University in 1989 and specializes in Stochastic Control with Applications to the Theory of Finance. She will hold a 75 % time appointment in Mathematics and a 25 % time appointment in Business. Both Panagiotis and Thaleia will be on leave during 1991-1992 and will join us in the fall of 1992.

Yong-Geun Oh of the Courant Institute of New York University has also been hired as a new Assistant Professor. Yong-Geun works primarily in Symplectic Geometry and Nonlinear Schrödinger Equations. He received his Ph. D. in 1988 from the University of California in Berkeley. He too will be on leave during 1991-1992 as he will be at the Institute for Advanced Study in Princeton. We look forward to welcoming all our new colleagues.

3 Van Vleck Assistant Professors

Two new Van Vleck Assistant Professors have also been hired this year, both of whom will be here for the first time in the fall of 1992. They are: *Tom Ilmanen* who received his Ph.D. from University of California in Berkeley in 1991 with a thesis

in Geometry, and *Arun Ran* who received his Ph.D. from the University of California in San Diego with a thesis on Algebra and Combinatorics. Tom will be at the Institute for Advanced Study in Princeton in 1991-1992. Arun has received an NSF postdoctoral fellowship and will spend this coming year at MIT.

Continuing as Van Vleck Assistant Professors are *Steven Hutt* (Topology) and *Kai Cheong Mong* (Geometry). Also *Sanjay Tiwari* (Differential Geometry) is continuing for an additional year as a Van Vleck Assistant Professor.

4 Visiting Teaching Faculty

We are fortunate to have as visitors this year a number of distinguished faculty members from around the world. During the first semester of 1991-1992, visiting us will be:

Dietmar Salamon of the University of Warwick (England). Dietmar, who received his Ph. D. from the University of Bremen in 1982 and works in Symplectic Geometry, will be a Visiting Professor.

Ilan Zisser of Tel Aviv University (Israel). Ilan received a Ph.D. from Tel Aviv University in 1991 and works in Finite Group Representations. He will be a Visiting Assistant Professor.

Jiangang (Jim) Dai of Georgia Institute of Technology. Jim, who received his Ph.D. from Stanford University in 1990 and works in Queuing Theory, will also be

a Visiting Assistant Professor.

During the second semester we will have as visitors:

Sergey Pinchuk of Bashkir State University (USSR). Sergey works in Complex Analysis and received a Ph.D. from Moscow State University in 1974. He will be a Visiting Professor funded in part by the University's prestigious Brittingham Fellowship.

Georgia Triantafillou of the University of Crete (Greece) (currently visiting the University of Chicago). Georgia is a Topologist with a Ph.D. in 1978 from the University of Bonn (Germany). She will be a Visiting Associate Professor.

Shu-Ming Sun, who was a Research Associate last year, will be a Visiting Assistant Professor this year. His field is Applied Mathematics, and he is a 1990 UW Ph.D. (M.-C. Shen).

Pui Tak Kan will continue another year as a Visiting Assistant Professor. He works in nonlinear partial differential equations.

A very eclectic group of visitors! We should have a very stimulating and interesting year.

5 Other Goings and Comings

Three members of the Department were awarded sabbaticals this year. *Anatole Beck* will take his sabbatical at the London School of Economics. *Mei-Chang Shen* will be at Hong Kong University of Science and Technology. *Peter Ney*, who was

also awarded a Humboldt Fellowship, will be at J.W. Goethe University at Frankfurt am Main (Germany) during the fall semester. He will also be spending time in Montreal and London during the spring semester.

Also on leave this year are: *Louis Solomon* who will spend the fall semester at the Mathematical Sciences Research Institute in Berkeley, *Sigurd Angenent* who will be at the University of Tokyo during the fall semester, and *Richard Brualdi* who will be at the Institute for Mathematics and its Applications in Minneapolis participating in their special year on Applied Linear Algebra.

6 Hilldale Award to Walter Rudin

The Hilldale Awards are given annually to four outstanding UW faculty members, one in each faculty division, for major achievements in teaching, research and public service. This year *Walter Rudin* received the award in the physical sciences division. Walter was cited for his "profound impact on the development of modern mathematical analysis in the U.S." and for "the clarity of his graduate and undergraduate lectures." He was described as one of the heroes of the University of Wisconsin and it was noted how the name Walter Rudin is almost synonymous with the University of Wisconsin throughout the world. Walter's books "Real and Complex Analysis" and "Principles of Mathematical Analysis" are known throughout the world. Walter re-

ceived the award, which included a cash award of \$ 7,500, at the Annual Physical Sciences Division Dinner in April of this year. His after dinner talk on "Multivariate Phenomena in Complex Analysis" delighted the audience.

7 Teaching Awards

We have a great bunch of Teaching Assistants here in Van Vleck Hall. Six of them were recognized this year with Departmental Teaching Awards. They are *Kenneth Jewell*, *Alan Letarte*, *Wenbo Li*, *Judith McDonald*, *Carl Mueller* and *Brian Repko*. At the award ceremony, Si Hellerstein presented each of them with a certificate and a check for \$ 75.

Sharad Chandarana was presented with the Department's "Distinguished Service Award" for his many contributions to the Department. Besides being a graduate student representative on the Graduate Committee, Sharad has put a lot of time and effort into organizing holiday parties and picnics for the Department. He was also presented with a certificate and a check for \$ 75.

In addition, two of our graduate students were selected by the L & S Teaching Assistant Instructional Development Program Committee as Teaching Fellows for 1991. They are *Mounir Boughoula* and *Thomas Halverson*. Selection is based on high quality performance as a Teaching Assistant. Their duties include working with other Teaching Fellows and the Committee in planning and conducting workshops

for new T.A.'s. A payment of \$ 500 accompanies the award.

The ceremony honoring these graduate students ended with a small party in the ninth floor lounge.

8 Teaching Assistantships and Fellowships

This year we have 23 new Teaching Assistants, of whom 18 are new graduate students. In addition we have a large number of new graduate students who will be on fellowship. Six new students have accepted Graduate School Fellowships for 1991-1992. Their names, along with their undergraduate institution are: *Michael Chao* (Harvard University), *Joseph Duffy* (Rutgers University), *J. Mark Ettinger* (University of Arizona), *Kevin Hansen* (Illinois State University), *Michael Kim* (MIT) and *Heather Lewis* (Carleton College). Receiving 36 months National Science Foundation Fellowships are *Brian Curtin* (Ripon College) and *David Perry* (UW-Madison). *Michael Neergaard* (Pennsylvania State University) has received a 36 month Office of Naval Research Fellowship.

Seventeen graduate students have been awarded Department of Education Fellowships for 1991-1992 through a grant administered by the Department. Seven of these are new students: *Liduvina Cruz Diaz* (University of Puerto Rico), *Catherine Denny* (Louisiana State University), *Adriana Dinca* (Hamline University), *Stephanie Edwards* (Miami Univer-

sity), *Susan Hollingsworth* (Pennsylvania State University), *Rafael Mirabel-Rivera* (University of Puerto Rico) and *Evelyn Torres-Gallardo* (University of Puerto Rico). The other ten recipients are current students working on their dissertations: *Joseph Dolinak, Kellie Evans, Lisa Galminas, Janine Graves, Grant Izmirlian, Peter Jarvis, Kenneth Jewell, Mary Marshall, Jennifer Quinn Massey* and *Thomas Maxwell*.

In addition, four of our students were awarded Department of Education Fellowships for this summer. They are : *Keith Brandt, Steven Deckelman, William Haloupek* and *Fereja Tahir*.

Congratulations to all, good luck to our new students, and best wishes to our continuing students for finishing their theses!

9 Undergraduate News

The following undergraduates were selected as recipients of awards administered by the Department:

Irma L. Newman Scholarship to *Steven P. Dast*;

Professor Linnaeus Wayland Dowling Scholarship to *Julian T. Dolby, Tadeusz J. Jankowski* and *Jeffrey J. Rolland*;

Mark H. Ingraham Scholarship to: *Mark A. Eriksson* and *Kelly Lynne Wieand*;

Frank D. Cady Scholarship to *Jun Luo*;
Scholarship from the David Young Memorial Fund to *Christopher E. Hoffman*.

This past year more than 250 students were enrolled as mathematics majors.

10 Talent Search

This past year was the 28th anniversary of the *Wisconsin Mathematics, Science and Engineering Talent Search*, sponsored by the College of Engineering, Tau Beta Pi Engineering Honor Society, the Cray Research Foundation and the Van Vleck Family. Marty Isaacs has been the Chair of the Talent Search Committee for a number of years now. The annual Honors day was held as usual in May with 25 high school students and their teachers present. Speaking in this year's program were *Ed Fadell* on "Topology and Braids" and *Deborah Joseph* (Computer Science) on "How to find the shortest path". The generosity of the Van Vleck family has enabled us this year, for the first time, to offer a major prize to a mathematically talented student in a Wisconsin high school or middle school - a four year scholarship worth \$ 16,000. The 25 students invited to the Honors Day were also invited to take a four-hour written examination in April. This year the first Van Vleck scholarship was awarded to Brent Halsey from Craig High School in Janesville. We are happy to report that Brent has chosen UW-Madison over MIT and will enroll here in the fall.

11 New Ph.D.'s

Twenty three graduate students will have received the Ph.D. degree this year by the time the summer ends. Their names, advisors, thesis title and new affiliation or location, if known, are;

August, 1990:

Zaifai Ye (J.P. Rosay), Holomorphic extension and decomposition from a totally real manifold, University of California at San Diego.

December, 1990:

Ning Zhong (M.E. Rudin), Generalized metric spaces and products, Ohio.

May, 1991

William Arvola (P. Orlik), The fundamental group of the complement of an arrangement of complex hyperplanes, State University of New York at Buffalo.

Peter Cholak (T. Millar), Automorphisms of the lattice of recursively enumerable sets, Victoria University of Wellington (New Zealand) and in 1992, the University of Michigan at Ann Arbor.

Michael Ittis (Peter Ney), Asymptotics of large deviations for I.I.D. and Markov-additive random variables in IR^d .

Edward Keppelmann (E. Fadell), Periodic points on nilmanifolds and solvmanifolds, Texas A & M University.

Weonja Kim (S. Wainger), L^p bounds for Hilbert transforms along convex surfaces, Korea.

Jeffrey Stroomer (G. Benkart), Combinatorics and the representation theory of $GL(r, C)$ and $Sp(2r, C)$, AT & T Bell Labs (Naperville, Illinois).

Roman Zrowtowski (K. Kunen), Indescribability properties of large cardinals.

August 1991:

Keith Chavey (R.A. Brualdi), Combinatorial methods in the study of matrices and

matrix spaces, University of Wisconsin at River Falls.

Timothy Daniel (M. Rudin), Normality in box products and Σ -spaces, Xavier University (Cincinnati).

Janko Gravner (D. Griffeath), Mathematical aspects of excitable media, Cornell University.

Evelyn Hart (E. Fadell), An algebraic study of Nielsen fixed point theory, Hope College (Holland, Michigan).

Hyung Chan Jung (R.A. Brualdi), Some contributions to the combinatorial theory of partially ordered sets, Korea.

H. Turgay Kaptanoglu (W. Rudin), Möbius-invariant spaces and algebras in poydiscs.

Thomas Kunkle (C. deBoor), A multivariate interpolant with n th derivatives not much larger than necessary, College of Charleston (South Carolina).

Thomas Lewis (J. Kuelbs), A law of the iterated logarithm for random walk in random scenery, Fuhrman University (Greenville, South Carolina).

Thomas Linton (A. Miller), Partial isomorphisms and continuous reductions with games, California Institute of Technology.

Hocine Mekias (J. Vanden-Broeck), Flow due to a singularity beneath a free surface.

Brigitte Norton-Odenthal (S. Hussein), A product formula of generalized Lefschetz number, Bates College (Maine).

Paul Schuette (P. Ney), Large deviations for trajectories of sums of random vari-

ables, Applied Mathematics, Inc. (Gates Ferry, Connecticut).

Geum Sug Hwang Son (R.A. Brualdi), Contributions to combinatorial matrix theory and coding, Korea.

Curtis Tuckey (H.J. Keisler), AT & T Bell Labs (Naperville, Illinois).

We wish them all well as they begin their careers as professional mathematicians and educators.

12 Retirements

Can it be true? Mary Ellen, Walter and John, all in one year?

After 32 years at the University of Wisconsin, Madison *Mary Ellen Rudin* and *Walter Rudin* retired in June of this year. At the time of their retirements Mary Ellen was Grace Chisolm Young Professor of Mathematics and Walter was Vilas Professor of Mathematics. Each has been awarded Emeritus status by Chancellor Donna Shalala. The Rudins have been powerful forces within the Mathematics Department, both mathematically and socially. Fortunately for us they plan to keep Madison as their home base during their retirement and to continue to be active with research and seminars within the department. They have been friends to faculty, students and staff alike with their warm and frequent hospitality. Each of the Rudins was honored with a conference in Madison this summer.

A *Symposium in Complex Analysis* was held from June 2 to June 7 which fo-

cused on a field which has been the center of Walter's research for most of the time he has been at Wisconsin. There were 15 principal speakers at the conference including Frank Forelli and Jean-Pierre Rosay from Wisconsin. Over 200 people participated in the conference. A conference banquet was held at Tripp Commons in the Memorial Union preceded by a cocktail hour on the Union Terrace overlooking Lake Mendota. The master of ceremonies at the banquet was Alex Nagel who said that "Walter will continue to do mathematics as long as he can wield a pencil." In his remarks, Si Hellerstein said that one should view the Rudins' retirement as "a success on their part in reducing their course load to zero." Mary Ellen reminisced about when they first came to Madison. Then the Mathematics building was the oldest on campus (North Hall). She related how once at a skating party, Walter skated too fast and dislocated his shoulder. But they made it to the party that night! The students in Walter's class discovered that he could write as fast with his left hand as his right hand but much less legibly. At the banquet Bruce Moser of McGraw-Hill announced the establishment of the *Rudin/McGraw-Hill Prize in Complex Analysis* in the amount of \$2,000 from the McGraw-Hill Foundation. This prize is to be awarded by the Department to the top graduate students in the field. In announcing the prize, Bruce said: "For nearly 40 years, Walter Rudin has been the best known and most respected author of McGraw-Hill's college mathematics textbooks. His books *Prin-*

Principles of Mathematical Analysis, Real and Complex Analysis and Functional Analysis have been used by students throughout the world. They have been translated into a total of 13 languages and are the cornerstone of McGraw-Hill's International Series in Pure and Applied Mathematics." In roasting Walter at the banquet, *Jean-Pierre Rosay* said "we have as students and teachers made best sellers out of Walter Rudin's books" and "Walter Rudin's books are very thin—the reason why they have been translated into so many languages."

A conference on *General Topology and Applications: Mary Ellen Rudin and her Work* was held from June 26-29. The local conference organizer *Arnie Miller* wrote: "Mary Ellen has exercised enormous influence on the field of set-theoretic topology, especially since the publication of her lectures on the subject at an AMS regional conference in 1972. The occasion of her retirement provides an opportunity to reflect on where the field has been, where it is, and where it should be going. The invited speakers at the conference discussed precisely these questions for the subfields in which Mary Ellen has been significantly involved. These comprise a large fraction of the entire field of general topology. Mary Ellen's 1972 lectures set the agenda for set-theoretic topology for more than 10 years; we hope that this conference will have a similar stimulating effect." A conference banquet was also held at Tripp Commons. *Judy Roitman* presented an award to Mary Ellen from the Associa-

tion of Women in Mathematics. *F. Burton Jones* told several stories about Mary Ellen including one about how Mary Ellen as a young girl was always going around barefoot and losing her shoes. The Master of Ceremonies, *Arnie Miller*, in joking about Mary Ellen said that "Mary Ellen is always willing and eager to help out. Especially when she shouldn't." He also described how Mary Ellen has solved a lot of difficult problems that the rest of us were unable to touch, and remarked how irritating that can be!

After 31 years in the Department *John Nohel* retired in June. John was for many years the Director of the Center of Mathematical Sciences and his influence on the mathematical life here has been great. Three special issues of the *Journal of Integral Equations* were dedicated to John in 1990. The editors of those special issues (*P.M. Anselone*, *R.K. Miller* and *J.J. Levin*) in describing John's accomplishments in the dedication wrote: "John Nohel has made many important and influential research advances in the study of the qualitative behavior of solutions of differential equations, Volterra integral equations, integrodifferential equations and equations involving delays. His major contributions include results in the asymptotic behavior of solutions, in particular asymptotic stability, and also on energy methods and conservation laws with memory. Much of this work concerns applications to reactor dynamics, viscoelasticity, heat flow and non-Newtonian fluid flow. [He] is also recog-

nized as an outstanding teacher. His insight, enthusiasm, and probing curiosity have inspired his students to follow in his footsteps and pursue research careers. He has also had a strong impact on mathematical research as Director of the Center for the Mathematical Sciences... ." In responding to questions as to what he will do in his retirement, John says that it will take him years to absorb most of the nice papers in the three special issues. John has been awarded Emeritus status by the Chancellor. This year he has a guest appointment at the ETH in Zürich.

In May John was honored by his colleagues with a pot luck banquet on the ninth floor of Van Vleck Hall. Included among the 130 or so guests were many former students and old friends, and some of John's children. The food was delicious and the view, including a spring sunset, was gorgeous. Carl de Boer read a telegram from Mike and Sharon Crandall who wondered whether retirement will curtail John's worldwide lecture tours, a theme that was repeated by Jake Levin, Bob Turner, Si Hellerstein and former student Richard Miller. In roasting John another theme was the carrying power of John's voice, and references were made to the sound of his voice coming from an adjacent classroom, the next floor above and even from the moon. For his part John mentioned his early stint as departmental T.A. coordinator, the protests of the late 60's (when John was Chairman), and his work as MRC and CMS Director. He also spoke of his wife Vera, who lost her courageous fight against cancer in 1988.

We wish Mary Ellen, Walter and John long, happy and peaceful retirements, and we're very happy that their retirement plans include us.

13 Outreach

Robert Wilson is the Director of OUTREACH for the mathematics program of the University of Wisconsin system. Part of his duties consist of coordinating the correspondence courses that are taken by students from all over the country. This past year over 1000 students took mathematics courses by correspondence, the largest number of any discipline. Last fall Bob led a set of three 'teleworkshops' for teachers in grades K-12 across the country, under the title *The Mathematics Curriculum: What's ahead?*. These workshops went by satellite link to teachers and administrators who had signed up to receive the signals through the Satellite Educational Resources Consortium (SERC). Viewers were able to arrange to get credit for the workshop in order to continue their teacher certification. Also participating in the workshop were *John Harvey* of this Department and the Department of Curriculum and Instruction, Tom Romberg, who is Sears Foundation-Bascom Professor of Education at UW and the director of the NSF funded National Center for Research in Mathematical Sciences Education, and Megan Loef of the research program in Cognitively Guided Instruction. According to Bob, this was the first year that the UW participated in producing SERF pro-

gramming, and the mathematics program was an experiment which was apparently quite successful. This fall Bob and John will again be presenting mathematics to teachers via SERC, this time in a semester long course for graduate credit.

14 Book News

The book *A course in ring theory* by *Donald Passman* was published this spring by Wadsworth Publishing Company. According to Don, the book is an expanded version of the course MATH 746 that he has been giving for a number of years.

The book *A first course in Matrix Algebra using MiniMat* by *Joel Robbin* will be published later this year by Jones & Bartlett Publishing Company.

The book *Combinatorial Matrix Theory* by *Richard Brualdi* and *Herbert J. Ryser* was published this summer by Cambridge University Press. In addition, Richard has been preparing a second edition of his book *Introductory Combinatorics*. The second edition, which has been extensively rewritten, will be published this fall by Elsevier Science Publishing Company.

15 The Rest of the News

Tom Kurtz is the new Director of the *Center for Mathematical Sciences*.

Richard Askey spoke at a conference on approximation theory in Leningrad and Moscow earlier this summer.

Robert Szczaeba of Yale University has made a sculpture which was given to the MAA by the AMS. The mathematical source of this work was Chapter 9 of the book *Mathematical Time Exposures* by former UW Professor *I. J. Schoenberg*.

Louis Rall was a principal speaker at the SIAM Workshop on Automatic Differentiation of Algorithms: Theory, Implementation, and Applications, held at Breckenridge, Colorado on January 6-8, 1991. (According to Lou, automatic differentiation basically consists of applying the rules for differentiation concurrently with evaluation of the function, so that values of derivatives or Taylor coefficients can be obtained without symbolic differentiation. This amounts to straightforward computation in suitably defined rings, integral domains and fields.)

Steffen Lempp was in Kazan (USSR) over spring break visiting Professor and fellow recursion theorist *Arslanov*. He gave three lectures, one on the U.S. educational system. This summer Steffen is attending the European Logic Colloquium in Uppsala (Sweden) and is also visiting Professor *Ambos-Spies* in Heidelberg (Germany).

Georgia Benkart and *Marshall Osborn* are attending this summer an International Conference in honor of *A. Shirshov* at *Altai University* in *Barnaul* (Siberia).

Donald Crowe gave MAA minicourses at the annual meeting in San Francisco in January and at the summer meetings in Orono (Maine) in August. The minicourses were based on the techniques of pattern analysis in his book *Symmetries in Cul-*

ture (with Dorothy K. Washburn). He also gave two talks on symmetry in African art at Spelman College in Atlanta as part of the UW's cooperative program with Spelman.

Mary Ellen Rudin has been elected to the American Academy of Arts and Sciences.

Alejandro Adem and *Amir Assadi* are organizing a Topology Conference to be held in Madison on October 11-13, 1991. Some support has been given by the UW Graduate School and additional NSF support is expected.

Dan Shea has been spending the summer at the Mathematics Institute of the University of Würzburg (Germany). He is also making mathematical trips to Berlin, Aachen, Giessen and Ulm. (Fanatic opera fan that he is, Dan hopes to get tickets to see some opera at the *soldout* Wagner Festspielhaus in nearby Bayreuth.)

Hans Schneider spent a month this summer at the Mathematics Institute of the University of Bielefeld in Bielefeld (Germany).

Richard Brualdi spoke at the First Estonian Conference on Graphs and Applications held in May in Tartu-Kääriku (Estonia). In June he gave five lectures at the Topology and Geometry Research Institute of Kyungpook National University in Taegu (South Korea). While in Korea he also gave lectures at Seoul National University and Cheju National University on Cheju Island. He was well taken care of by his two former students Suk-Geun Hwang (of Kyungpook University) and Han Hyuk Cho (of Seoul University).

16 Alumni News

Terry McKee (UW Ph.D. 1974, J. Keisler) of Wright State University (Dayton) has won the 'Presidential Award for Faculty Excellence/Outstanding Faculty Member' at that University. This award is for overall excellence in research, teaching and service. At the fall convocation at Wright State, Terry will address the full faculty and will formally receive the award.

Bryan Shader (UW Ph.D. 1990, R. Brualdi) of the University of Wyoming has been awarded a Postdoctoral Fellowship at the Institute for Mathematics and its Applications at the University of Minnesota. Bryan will be participating in the program on Applied Linear Algebra in 1991-1992.

Richard Stark (UW Ph.D. 1975, J. Barwise) of the University of South Florida (Tampa) is the author of 'LISP, Lore and Logic: An algebraic view of LISP programming, foundations and applications' published in 1990 by Springer-Verlag. Richard was one of the organizers of a special session on 'Mathematical issues in biologically motivated computing' at the AMS sectional meeting in Tampa in March of this year.

Matt Kaufmann (UW Ph.D. 1978, J. Barwise) wrote to say that he is now working at a small firm in Texas called Computational Logic, Inc. which does research in automated reasoning and verification (proofs of correctness) of computer software and hardware. He also serves on the Mathematics Department Visiting Committee at the University of Texas, Austin.

B.M. Stewart (UW Ph.D. 1940, MacDuffee) of Michigan State University (retired) wrote to tell us about two of his graduate school friends who died recently. *James Henry Bell* (UW Ph.D., Ingraham) died in May of 1989. At the time of his death he was a retired A.C. Electronics executive who had done important work in quality control and worldwide marketing of guidance systems. *Randall H. Cole* (UW Ph.D., Langer) at the time of his death in February, 1990 was Professor Emeritus of the University of Western Ontario.

Each year many people make contributions to the UW-Mathematics Department. We warmly thank all those that have. In these times of tight university budgets, such contributions allow the Department to perform some services for students, faculty and staff that it would otherwise be unable to. If you would like to make a contribution, checks payable to the **UW Foundation: Math. Dept. Fund** can be sent to: UW Foundation, 150 East Gilman St., P.O. Box 8860, Madison, WI 53708-8860.

This newsletter was written and typeset using L^AT_EX by Richard A. Brualdi (brualdi@math.wisc.edu).

