

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

Number 3, SUMMER 1990

It's summer in Madison as I write this. The sun is shining and there are cool breezes blowing over Lake Mendota which is dotted with sailing boats. There is a crowd of people sitting on the Memorial Union Terrace. Some of them are just enjoying a lazy summer day, some are discussing the latest political news, and yes some of them are discussing mathematics (you can tell them from the others by observing those writing on their napkins!). The purpose of this edition of VAN VLECK NOTES is not to describe the theorems that have been proved on the terrace by faculty and graduate students alike, but to inform you, our former colleagues, students and alumni of one sort or another, of the many (mostly good) things

that have been going on around Van Vleck in the past year. Madison, the University of Wisconsin, Van Vleck Hall continue to be exciting and stimulating places. We hope that some of you will pass by here again. Many of you have. We also hope that you will remember us when you are advising your good students about their graduate school plans.

And now the news ...

1 Our Leaders

Si Hellerstein has completed two years as Chairman and has been reelected for a third year. *Fred Brauer*, who has been the Associate Chairman the past three years, is giving up that position. *Dieter Uhlenbrock* has been appointed Associate Chairman beginning with the academic year 1990-1991. *Steve Bauman*, after many years of service as T.A. Supervisor, is stepping down from that position. *Peter Orlik* has been appointed the new T.A. Supervisor. *Phil Miles* continues as the Precalculus Supervisor. *Mike Voichick* is in his second year of leave from his duties as Undergraduate Coordinator. *Don Crowe* has been acting Undergraduate Coordinator. *Frank Forelli* is the Graduate Coordinator. *Howard Conner* is the Director of the Computer Laboratory of the department.

2 Special Recognition

Sigurd Angenent, who specializes in partial differential equations, got a 'hat-trick' this year. Besides being awarded a Sloan Foundation Fellowship, he was named a Presidential Young Investigator. Of course, we're not surprised. Congratulations Sigurd! Sigurd received his Ph. D. from the University of Leiden in 1986 and has been in the Department since 1987. He was promoted to Associate Professor in 1989.

3 Promotions

Amir Assadi, an algebraic topologist, and *Arnie Miller*, a set-theorist, have been promoted from Associate Professor to Full Professor. More congratulations! In addition, Amir has been awarded a Faculty Development Grant by the University of Wisconsin.

4 Sabbaticals

Four members of the Mathematics Department were awarded sabbaticals for 1990-1991. They are *Fred Brauer*, *Richard Brualdi*, *Joel Robbin* and *Louis Solomon*. Fred will take his sabbatical during the second semester of 1990-1991 and will be based in Madison. Richard plans to spend most of his second semester in Madison with some book writing projects. Joel will take his sabbatical during the fall semester and will be at the University of Warwick for part of the time. Lou will take his first semester sabbatical at the Mathematical Sciences Research Institute in Berkeley where he will participate in their special program on group representations; then he is off to Australia for the second semester.

5 New Faculty

In the last couple of years the Department has hired several new faculty members and expects to hire more this coming year. *Athanassios Tzavaras*, who received his Ph. D. from Brown University in 1985 and whose research interests lie in nonlin-

ear analysis with applications to continuum physics, was appointed an Assistant Professor this past year. Previously, he was a Van Vleck Assistant Professor here for two years. Although they were hired earlier, *Hiroaki Terao* and *Alejandro Adem* will be joining the department this year. Hiroaki, who specializes in algebraic geometry and combinatorics, will be leaving his position at International Christian University in Tokyo and will be an Associate Professor here. Alejandro, who specializes in algebraic topology and has been at the Institute for Advanced Study in Princeton, Stanford University and most recently this summer at the Mathematical Sciences Research Institute in Berkeley, will be an Assistant Professor. *Robert Wilson* of Ford Aerospace Research in Palo Alto was recently hired jointly as a Full Professor and Director of OUTREACH for the mathematics program of the University of Wisconsin Extension. Many of you will remember Bob as a former Ph. D. graduate of the University of Wisconsin and T.A. Supervisor.

This past year three new people were hired on a permanent basis. *Efim Zelmanov* of the Institute of Mathematics of the Academy of Sciences of Novosibirsk (USSR) was hired as a Full Professor. He received his Ph. D. in 1980 from the same institution and his specialities are ring theory (associative, non-associative and Lie) and group theory. It is expected that he will join us for the first time in the spring of 1992. *Franz Forstneric* of the University of Ljubljana (Yugoslavia) was hired as an Associate Professor. He received his

Ph. D. in 1985 from the University of Washington and his specialities are analysis (several complex variables) and geometry. *Andreas Seeger* of Princeton University was also hired as an Associate Professor. He received his Ph. D. in 1985 from the Technical University in Darmstadt and his speciality is analysis (harmonic analysis and partial differential equations). He will be at the IMA in Minneapolis in the fall and then will join us in the spring.

6 Van Vleck Assistant Professors

This past year we have had several Van Vlecks on campus: *Carol Bezuidenhout* (probability), *Paul Corazza* (logic), *Kai-Chin Lin* (analysis), *Michael Papadimitrakis* (analysis), and *Sanjay Tiwari* (differential geometry). Carol, Paul, Kai-Chin and Michael will be leaving us this year. We're sorry to see them go, they've contributed to the good life around here, but we wish them well with their new jobs. Joining us for the first time as Van Vleck Assistant Professors this year are: *Steven Hutt*, a topologist from the University of Edinburgh, and *Kai Cheong Mong*, a geometer from Oxford University who was last year at the Max Planck Institute.

7 Visiting Teaching Faculty

We have been fortunate to have with us this past year as visiting faculty members

Zoltan Balogh of Kossuth University in Debrecen, Hungary, *Raymond Brummelhuis* of the University of Amsterdam, *Anatole Joffe* of the Centre de Recherche of the Université de Montréal, *Alex Pothén* of the Pennsylvania State University (our new Big-Ten sister university!), and *Mei-Chi Shaw* of the University of Notre Dame. While we will miss them this year we are happy to welcome several new visitors this year:

Donald McQuillan, our former colleague, is visiting us this summer and is teaching in the summer session. We're happy to have him back. Don is permanently at University College in Dublin.

Joseph Roseman of Tel Aviv University will be here the entire year. Joe, whose speciality is Applied Mathematics, is no stranger here as he was a member of the department in the 60's.

Sergio Fajardo is a logician from the University of the Andes in Bogota, Columbia. He is a former Wisconsin Ph. D. student of Jerry Keisler.

Boris Shapiro specializes in singularity theory and comes from Moscow State University.

R. Szwarc works in harmonic analysis and operator theory and comes from the University of Wroclaw in Poland.

Zhi Quing Wang, who specializes in differential equations and nonlinear functional analysis, spent last year at the University of Utah and has his Ph. D. from the Institute of Mathematics of the Academia Sinica (P.R. of China).

Pui Tak Kan, who works on nonlinear partial differential equations, received his Ph.

D. from the Courant Institute and was visiting last year at the State University of New York in Stony Brook.

8 Other Recent Hiring

Yvonne Nagel was recently hired as an Information Program Consultant. Yvonne, who also is a Wisconsin Ph. D., is responsible for maintaining the extensive computer resources within the department, in particular for seeing that all our electronic mail goes in and out. *Melinda Certain* (another Wisconsin Ph. D.!) was hired as a Faculty Associate. Besides teaching in the department, Melinda is involved in Extension activities for the department. Also hired as a Faculty Associate is *Claire Rider*. Claire is in charge of the University Tutorial Program within the Mathematics Department.

9 Other Goings and Comings

Mike Bleicher who has been teaching in Malaysia for the past three years in a program affiliated with the University of Wisconsin is returning this fall. Also returning are *Ed Fadell*, from the University of Heidelberg and the University of Pisa, *Jim Kuelbs*, from Indiana University, *Larry Levy*, from Wayne State University, *Marshall Slemrod* from the Weizmann Insitute in Israel, and *Steffen Lempp* from Germany and the Mathematical Sciences Insitute at Berkeley. Steffen has been in the department for two years now,

although he has actually been in Madison for only one semester. We are happy to welcome back all our colleagues.

Steve Bauman will be on leave for the fall semester and will be teaching at Spelman College in Atlanta. *Marty Isaacs* will be on leave in the fall participating in the special program on group representations at the Mathematical Sciences Research Institute in Berkeley. *Pat Ahern* will be on leave at the University of Barcelona during the spring semester.

Not returning, a fact that does not make us happy at all, are *David Russell* who will be staying at the Virginia Polytechnic Institute and State University and *Mike Crandall* who will be staying at the University of California, Santa Barbara. A sad footnote: Mike's house was destroyed in the fires this past summer in Santa Barbara and we all wish him and his family a speedy recovery from this mishap.

10 Medal of Science

Stephen C. Kleene, Emeritus Professor of Mathematics, was awarded the National Medal of Science by President George Bush. Steve, although retired, continues to remain active. All of us who know Steve know that this honor, in recognition of his fundamental contributions to mathematics and the scientific well-being of the United States, is richly deserved. Congratulations Steve!

11 R.C. Buck Retires

Creighton Buck who has been in the Mathematics Department for 40 years retired this past year. At the time of his retirement Creighton was *Hilldale Professor of Mathematics*. Creighton has given extraordinary service to the Department, the University, and the entire mathematics community. From 1959 until 1963 he directed the Committee on the Undergraduate Program in Mathematics (CUPM) of the Mathematical Association of America. He was a member of the U.S. Commission on Mathematics Instruction from 1962-1967. From 1964-1966 he was Chairman of the Mathematics Department and from 1973-1975 he was director of the Mathematics Research Center (now the Center for Mathematical Sciences). Creighton headed the university-wide committee that recommended (subsequently adopted) the changes in the grading system that resulted in the grades of AB and BC. His book *Advanced Calculus*, written with his wife *Ellen Buck*, is widely used and is now in its third edition. Creighton was honored by his colleagues with a retirement dinner in May at the Swiss Chalet in Middleton. We're all going to miss him around here, although we hope that he will continue to spend some time at Van Vleck Hall with his new status as Emeritus Professor of Mathematics. We wish Creighton and Ellen a long, happy and peaceful "retirement". The quotes are there because we don't think that Creighton is really going to retire. In fact, Creighton is continuing as the na-

tional head of the Coordinating Committee for the Doctoral Program in Mathematics in the MS 2000 project, and Creighton says that now that he will no longer be teaching (in the formal sense) he expects to have more time for research!

12 Hilldale Lecture

George Andrews, Evan Pugh Professor of Mathematics at the Pennsylvania State University, gave the annual Hilldale lecture in the Division of Physical Sciences on April 5th this year. The title of his lecture was *The amazing romantic story of Ramanujan's mathematics*. George captivated an audience of about 200 in this public lecture with the story of Ramanujan and his mathematics. After the lecture there was a reception in the ninth floor lounge of Van Vleck Hall. George also talked in the mathematics colloquium on the day following the Hilldale Lecture. A video of Andrews' lecture is available from BAVI of the University of Wisconsin for \$ 30. The video makes for a good math club show and is also appropriate for high school students. Dick Askey has copies of a newspaper series on Ramanujan which can be used in connection with this video. Contact Dick for a copy.

13 Teaching Awards

Marty Isaacs was awarded the 1989 *Benjamin Smith Reynolds Award for Excellence in the Teaching of Future Engineers* by the School of Engineering. He was pre-

sent with a check for \$ 1500 and a bronze medal. He was cited for his contributions to education at both the undergraduate and graduate levels, in particular for his participation in the maintenance of the calculus sequence, his efforts in promoting mathematics, his dedicated service in the Mathematics, Science, and Engineering Talent Search Program, and for the recognition he has received from students for his outstanding teaching. Congratulations Marty for this well deserved honor.

Our teaching assistants do a great job for the department. Seven of them were awarded departmental teaching awards this past year. They are: *Mounir Boughoula, Kevin Godbey, Mark Johnson, Tom Linton, George Mader, Mary Marshall and Jennifer Quinn Massey*. Each person was presented with a check for \$ 75 and a certificate of the award.

Curt Tuckey received a Distinguished Service Award of \$ 75 for coordinating visits of prospective graduate students. *Kari Shaw* was given an Excellence in Teaching Award by the Graduate School. She received a check for \$ 500. *Janine Smolin* was named an L & S Teaching Fellow for 1990. She was presented with a check for \$ 500. Congratulations to them all!

14 Teaching Assistantships and Fellowships

The department has appointed 26 new Teaching Assistants for the coming aca-

demic year. Of these, 17 are new graduate students. We look forward to welcoming them as well as *Garth Dickie* from the University of Michigan and *Scott Lindhurst* from Princeton University who were awarded Graduate School Fellowships and John Gordon who was awarded an Advanced Opportunity Fellowship.

Ten graduate students were awarded Department of Education Fellowships for 1990-1991 through a grant administered by the department. Three of the new fellows are incoming students: *Janet A. Best*, *Rebecca Hasti* and *Heidi A. Munson*. The other seven are continuing students: *Keith L. Chavey*, *Thomas J. Kunkle*, *Thomas J. Linton*, *Paul H. Schuette*, *Janine Smolin*, *Curtis D. Tuckey* and *Peter S. Turbek*. These awards will enable the continuing students to devote full time to their dissertation research and writing. More congratulations!

15 Undergraduate Scholarships

A number of scholarships administered by the Mathematics Department were awarded to outstanding undergraduate mathematics majors. The name of the awards and the recipients are:

M.H. Ingraham Scholarship to: *Stephen P. Arvedson* and *David M. Perry*.

Irma L. Newman Scholarship to: *Wayne H. Ohlrich* and *Karl A. Voss*.

Professor Linnaeus Wayland Dowling Scholarship to: *Kacheong Poon*, *Beth Ann*

Smalley and *Kelly Lynne Wieand*.

Hazel Duling Scholarship to: *Cynthia Chin*.

16 New Ph.D.'s

Twenty graduate students received Ph.D.'s between August 1989 and August 1990. Their names, advisors, and their new affiliations, if known, are:

August 1989:

Patricio Felmer (P. Rabinowitz), Univ. of Chile,

Ismor Fischer (R. Askey), Naval Postgraduate School,

Zhongdan Huan (M. Crandall), Worcester Polytechnic Inst.,

Hyeonbae Kang (A. Nagel), Univ. of Minnesota,

Kevin McDougal (R. Brualdi), Univ. of Wisconsin, Oskosh,

December 1989:

James P. Kavanaugh (H. Schneider), Illinois Wesleyan Univ.,

May 1990:

Gary Shon Katzenberger (T. Kurtz), Microsoft Corp.,

Bryan L. Shader (R. Brualdi), Univ. of Wyoming,

Charles Welsh (D. Passman), SUNY College at Oswego,

Bingyu Zhang (D. Russell), Univ. of Cincinnati,

August 1990 (expected):

William Calbeck (J.-P. Rosay), Florida International Univ.,

Timothy Daniel (M. Rudin),
Philip Gwanyama (J. Harvey),
Avner Landvner (K. Kunen), Univ. of
 Kansas,
Kari E. Shaw (P. Ahern), Miami Univ.,
Eli A. Siegel (L. Solomon), Lawrence
 Univ.,
Shu Ming Sun (M. Shen), Research Asso-
 ciate UW-Madison,
Hai Tao Fan (M. Slemrod), IMA, Univer-
 sity of Minnesota,
James R. Wright (S. Wainger), Texas
 Christian Univ.,
Xuezheng Wu (J. Robbin),
Ning Zhong, (M. Rudin).

17 Changes in Van Vleck

The kitchen on the ninth floor was recently remodeled. There are now new cabinets and a microwave oven. Also the ninth floor lounge was recently refurbished giving it a more attractive ambiance. It continues to be a stimulating place for mathematical discussions and a great place to meet people. And of course the view is still terrific! By vote of the mathematics faculty, Van Vleck Hall has now become an almost smoke-free building. Smoking is no longer permitted except in private offices.

The Mathematics Library in Van Vleck Hall has expanded its shelf space to accommodate its growing collection of books. The space above the library has been remodelled to become a Computer Laboratory.

18 Obituaries

We are sad to report the deaths of two of our distinguished colleagues. Emeritus Professor of Mathematics and Computer Science *J. Barkeley Rosser* died on September 5, 1989 at the age of 81. Emeritus Professor of Mathematics, *Isaac Schoenberg* died on February 21, 1990 at the age of 86. Barkeley, who made seminal contributions to logic, number theory and applied mathematics, was director of the Mathematics Research Center from 1963 until 1973. Iso, as he was known to his friends, is sometimes called "the father of splines" because of his pioneering work on splines. He made fundamental contributions to number theory, total positivity, distance geometry, and many other parts of mathematics. More detailed obituaries are available elsewhere. In the November 1989 issue of SIAM NEWS can be found an obituary of Barkeley Rosser written by R.C. Buck, S.V. Parter and L.B. Rall. The May 1990 issue of SIAM NEWS contains an obituary of Isaac Schoenberg written by Carl de Boer.

We are also sad to report the death of another of our colleagues. *Ruven Gurevic* died this past year as a result of complications from a brain tumor. He came to Wisconsin from the University of Illinois where he wrote a thesis in logic and analysis with Lee Rubel, a Wisconsin Ph. D. Ruven was a Van Vleck Assistant Professor at the time of his death. During his brief time here he was an active and stimulating member of the department.

19 Talent Search

Under the stewardship of Marty Isaacs, the *Mathematics, Science, and Engineering Talent Search Program* continues to be popular among the Wisconsin high school students. The annual Honors Day was held this May with over thirty high school students and their teachers invited. One exciting new development is the establishment of a full four year scholarship at the University of Wisconsin. The very best performers on the problems of the Talent Search will be invited to compete in a written examination for the scholarship. It will be awarded this coming year for the first time. The Department continues to seek contributions for funds that will enable it to award other partial scholarships and monetary prizes to Talent Search finalists.

20 Computer Grant

The Mathematics Department received a matching grant of \$ 70,000 in 1989 from the NSF Instrumentation and Laboratory Improvement Program. The purpose of this grant is to upgrade the computers in the Mathematics Computing Lab. The faculty associated with this grant are *Rod Smart* and *Arnold Miller*, principal investigators, and *Howard Conner*, *David Griffeath*, *John Harvey*, *Jerome Keisler*, *Russ McMillan*, *Alex Nagel*, *Peter Orlik*, *Louis Rall* and *Joel Robbin*. With money from this grant, Macintosh IIcx's and generic 386 machines have been purchased. The

main audience targeted consists of students in third semester calculus. Last semester one small lecture (100 students) was taught by Rod Smart using *Mathematica* on the Macs. In the fall there will be a slightly larger lecture using the Macs and the 386s all connected by a TOPS network with a single Apple Laser Writer. Next semester more Macs and 386s and a least one more printer will be purchased. According to Rod Smart, it was thought that the use of software with powerful graphing capabilities would entice the students to want to learn more. While the students are somewhat awed by *Mathematica* they seem to be really learning how to do mathematics on a computer. Most of the students thought the course was a good experience, but a little time consuming.

21 Math Preview

This year will be the fourth year of the Math PREVIEW program on the Madison campus. This program is modelled on the Ohio State EMPT program. According to *John Harvey* the program tests high school juniors and on the basis of their scores forecasts what mathematics courses they will be placed in upon entrance to the University here if they take no additional mathematics courses during their senior year. The intent of the program is to encourage high school seniors to take more mathematics and to reduce the number of entering college students who must take low-level mathematics courses.

John is the new director of PREVIEW. *Phil Miles* directed the program during its first three years. Two other Wisconsin campuses, Milwaukee and La Crosse, have similar programs and the three campuses are cooperating.

22 Book News

The book **Fourier Analysis on Groups** by *Walter Rudin*, originally published in 1962, has been reissued in paperback as a volume in the *Wiley Classics Library*.

The book **Matrices and Linear Algebra** by *Hans Schneider* and *George Barker*, originally published in 1968, has been republished as a Dover book.

The book **Symmetries of Culture: Theory and Practice of Plane Partition Analysis** by *Dorothy K. Washburn* and *Donald Crowe*, published in 1988, was given the *Tenth George Wittenborn Award*. The book was described as "a superb post-modern collaboration of mathematics and anthropology to produce a primary tool for artistic and cultural analysis".

The book **Infinite Crossed Products** by *Donald Passman* was published in 1989 by Academic Press. Don has also just finished writing the book **A Course in Ring Theory** which will be published soon by Wadsworth Publishing Company.

Joel Robbin has just finished writing an elementary book on linear algebra to be called: **Matrix Algebra and More**. The book will be accompanied by a disk which includes a program called MINI-

MAT written by Joel.

Richard Brualdi has just finished writing the book **Combinatorial Matrix Theory**. The book was begun as a joint project with *Herbert J. Ryser* who, although he died shortly after the book was begun, will be a coauthor. The book will be published by Cambridge University Press as part of their series *Encyclopedia of Mathematics and its Applications*.

23 The Rest of The News

Mary Ellen and *Walter Rudin* gave invited lectures in Iceland this past summer and *Walter* will be giving a lecture in Sendai, Japan in August.

Fred Brauer participated in an *International Conference on Differential Equations and Applications to Biology and Population Dynamics* in Claremont, California in January of 1990 and a session on nonlinear integral equations at the winter meeting of the Canadian Mathematical Society in Montreal in December 1989.

Tom Kurtz recently completed a term as a member of the Advisory Committee of the Division of Mathematical Sciences of NSF. He had been Chairman of that committee for one year. Tom has also been elected recently to the University Committee of the University of Wisconsin-Madison. This is the top faculty committee, which among other duties acts as the executive committee for the Faculty Senate.

Dan Shea spent the spring semester of 1989 on sabbatical in Madrid, Uppsala and Joensuu (Finland) where his main hosts

were, respectively, José Fernández, Matts Essén and Ilpo Laine. Before leaving he spent February visiting several universities in California (Pasadena, San Diego, San Bernardino, Davis) and part of March in Valparaiso, Chile.

Donald Crowe spent the spring semester of 1989 on sabbatical in Australia, New Zealand, Fiji and Tonga. He collected material for several small papers on symmetry in various forms of "naive" art: aboriginal rain forest shields and spears, Maori rafter paintings, Fiji stencilled bark cloth, Tongan patterned rafter lashings, and Admiralty Islands spear decorations. Don is back in the South Pacific again this summer.

Hans Schneider is the founding president of the new *International Linear Algebra Society*.

Jean Pierre Rosay was an invited speaker at the AMS regional meeting in Manhattan, Kansas in March of this year. His title was to have been *Examples of Cauchy-Riemann Structures*, but unfortunately he became ill and was unable to give his lecture.

Richard Askey is giving the AAAS-MAA lecture at the joint summer meetings of the American Mathematical Society and the Mathematical Association of America in Columbus, Ohio this summer. The title of his talk is *Lost and found mathematics*.

Mike Crandall is giving the AMS Progress in Mathematics Lecture at those same summer meetings in Columbus. His talk is entitled *Viscosity solutions of partial differential equations*.

Efim Zelmanov is giving an invited address at the International Congress of Mathematicians (ICM) in Kyoto, Japan this summer. His title is *Restricted Burnside Problem*.

Department members who will be attending the ICM in Kyoto include *Richard Askey, Mary Ellen Rudin, Walter Rudin, Marshall Slemrod, Arnold Miller, and Hans Schneider*.

John Harvey has been elected to a three year term as MAA governor representing the Wisconsin section. He is continuing as Chair of the MAA Committee on Testing. He also directs the MAA Prognostic Testing Project funded by NSF and the MAA Calculator-Based Placement Test Program Project funded by Texas Instruments.

The Ministry of Education of Japan has approved a joint research project between *Hans Schneider* and *Richard Brualdi* from the University of Wisconsin and *T. Ando, F. Hiai* and *Y. Nakamura* of Hokkaido University in Sapporo. Hans is visiting Sapporo University in August as part of this project and T. Ando will be visiting the University of Wisconsin in December.

Richard A. Brualdi participated in a workshop on coding theory and algebraic geometry in January at the University of Puerto Rico in San Juan. He also gave invited talks at the 5th Las Cruces Graph Theory Conference in March at New Mexico State University, the Linear Algebra Workshop in April at the University of Lisbon, the conference Directions in Matrix Theory in May at Auburn University, and the 6th

Haifa Matrix Theory Conference in June at the Technion in Israel. While in Israel he also gave lectures at the Hebrew University and the Weizmann Institute. He is a member of the organizing committee for the special year on Applied Linear Algebra in 1991-1992 at the Institute for Mathematics and its Applications at the University of Minnesota.

24 Alumni News

Actually we don't have very much, but we would like to have news of former members of our department. To start things off, we have:

Fred N. Krull, who earned a B. S. in applied mathematics from the Madison campus in the fifties, was a recipient of the Charles L. McCuen Special Achievement Award from the General Motors Research Laboratories in 1989. He was cited for developing an interactive computer-aided design system for modeling free-formed body surfaces. The system combines the ability to easily manipulate surfaces with the ability to generate realistic rendered images and is now in use for design as several GM divisions.

John Allen Paulos, a Wisconsin Ph. D., is the author of the book **Innumeracy: Mathematical Illiteracy and Its Consequences** which was published in 1989 by Hill & Wang. This book was reviewed in the New York Times.

Naomi Fisher is co-editor (with Harvey Keynes and Philip Wagreich) of the book **Mathematicians and Education Re-**

form, CBMS Issues in Mathematics Education, Volume 1 which was published by the AMS in 1990.

25 The Future

January 1991 AMS Meeting: A number of people here are interested in holding a Wisconsin party or dinner at the AMS annual meeting in San Francisco (January, 1991). More information will be forthcoming. Meanwhile if you are interested in attending and perhaps in helping organize such an affair, please contact Tom Kurtz (kurtz@math.wisc.edu). We have hopes of this becoming an annual affair. We want to stay in touch with our former students and colleagues.

Van Vleck's 30th birthday: Many of you attended the 25th anniversary in May 1988 of the opening of Van Vleck Hall. We are considering having a similar gathering in 1993 when Van Vleck becomes 30 years old. We would be interested to know of your reaction to this possibility.

Mary Ellen Rudin and *Walter Rudin* are planning to retire at the end of the coming academic year. Plans are under way for festivities in connection with their retirement. More details will be available later.

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