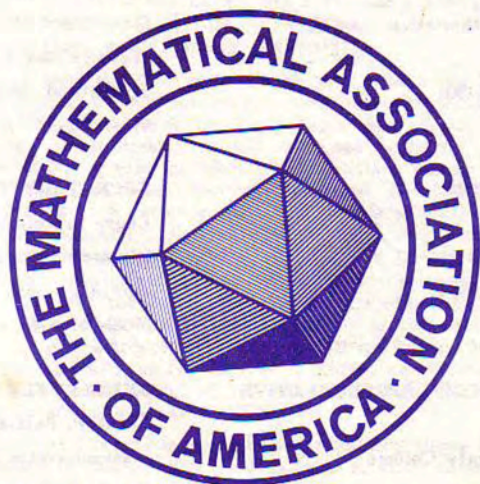


NORTHEASTERN SECTION



NEWSLETTER

FALL 1988

VOLUME 10

NUMBER 2

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FUTURE SECTION MEETINGS

FALL, 1988

Rhode Island College
November 18,19
See this bulletin for details

SPRING, 1989

Keene State College
June 2,3
Local Arrangements Chair : Joseph Witkowski
Program Chair : Joan Ferreni-Mundy, UNH

Fall, 1989

College of the Holy Cross
November 17,18
Local Arrangements Chair : Leonard C. Sulski
Program Co-Chairs : Melvin Tews and Thomas Cecil,
College of the Holy Cross

A MESSAGE FROM THE CHAIR

This year, the centennial of American Mathematics, has certainly proved to be as exciting as the predictions. Len Gillman, President of the MAA, surprised everyone attending the banquet at the joint AMS/MAA meeting in Atlanta when he led all 1900 of them in singing happy birthday to the American Mathematical Society. What a perfect way to initiate our special year.

The Centennial AMS Meeting in Providence in August was equally festive and exciting. It began with a photograph of all the attendees standing on the steps of the State Capitol Building, and as the days passed, prominent mathematicians lectured on the past, present, and future of mathematics.

The media have been very supportive this year. Obviously they have seized the opportunity to report on our celebration activities. They have also brought other important mathematical issues to the public's eye. Benoit Mandelbrot and fractal geometry, and the discussion of the supposed "solution" to Fermat's last theorem offered the public a view of what mathematicians do. However, not all of the reporting has been flattering. Surveys released by the National Science Foundation indicated that U. S. science and mathematics education at the primary and secondary level is foundering. According to Ed Connors, chairman of the joint committee on educational policy for the AMS/MAA, the United States is facing a critical shortage of mathematicians in the 1990's. These releases do not give the public an optimistic view for the future of mathematics education. The single issue which has received the most attention from the media is the teaching of calculus. This is a result of our own introspection - as exemplified by the MAA publications: *Calculus for a New Century*, *A Pump Not a Filter*, and *Toward a Lean and Lively Calculus*. We should be proud of our self-evaluation. Yet in this pursuit we have brought to the forefront some of our failures.

It is important that the public be informed regarding these issues and others since our future success in dealing with them depends on their cooperation.

On the subject of anniversaries, the MAA will celebrate its 75th in 1990 (Summer Meeting at Columbus, Ohio - the location of MAA's founding), Pi Mu Epsilon will celebrate its 75th in 1989, and the *Monthly* will be 100 years old in 1992. We should identify how our section can contribute to these celebrations.

Our Section had a most successful year. The meeting at Bentley College drew a record attendance - 245. Compared to the meetings of the other 28 sections there was only one larger meeting in 1987-1988. The Southeastern Section, which holds one meeting a year, had an attendance of 334. Our Spring Meeting at St. Michael's featured a superb program (thanks to Ed Sandifer) with excellent local arrangements (thanks to Rick Cleary.) Steve Ingram, past chair, gave a tribute to Jim Ward for his services as Governor of the Section. It brought back memories and also entertained us. If you missed this meeting, you missed one of our best.

Don Small, Colby College, was elected Governor by the membership of the section, as communicated to us by the national office. Although he has provided exemplary service to the Section over the past several years, I am sure he would be the first to admit that it will be a challenge to continue the level of excellence that Jim Ward has set. This fall we have three offices open to election. A special thanks to the nominating committee for providing us with the slate of nominees. Independent of the outcome of the elections the section will have excellent leadership for the future.

Al Willcox, the MAA Executive Director, has announced a program whereby Sections will be reimbursed \$10 for each member that the Section recruits. The coordinator of this Membership Incentive Program for our Section is Jim Ward, Bowdoin College. In order for our Section to benefit from this program, the application for each new member must have Jim's signature on it. See Page 5 for further information on MIP and the appropriate form to use for those whom you do recruit. Please coordinate future recruitment activities through Jim.

As you may be aware, the MAA is now in the process of establishing student chapters at colleges and universities. The purpose of these student chapters is to attract students to careers in the mathematical sciences, to increase student participation at Section meetings, and to encourage membership in the MAA. Our Section currently seeks an ad hoc coordinator for student chapter activities in our geographic region. If you are interested in this position, please contact me. If you seek more information on a student chapter at your institution, contact Howard Anton, Drexel University.

A special thanks to Donald and Shirley Blackett for their efforts in preparing *A Brief History of this Section* which appears on Page 6 of this newsletter.

James Tattersall has put together an interesting and attractive program for the Section meeting this fall. I hope to see you at Rhode Island College, November 18 - 19.

Dennis Luciano
Chair, Northeastern Section
of the MAA

REPORT OF THE NOMINATING COMMITTEE

It is with great pleasure that the Nominating Committee recommends the following slate of nominees :

Vice Chair

James J. Tattersall Providence College
Providence RI 02918

Karen J. Schroeder Bentley College
Waltham MA 02154

Secretary/Treasurer

Laura L. Kelleher Massachusetts Maritime Academy
Buzzards Bay MA 02532

Two-Year College Representative

Phillip H. Mahler Middlesex Community College
Bedford MA

Helene S. Savicki Dean Junior College
Franklin MA

The committee feels that two nominees were sufficient for each position except for secretary/treasurer. All of the above nominees are current members of the MAA and each one has verbally agreed to serve if they are elected. The election will be held during the Business Meeting at Rhode Island College at which time further nominations may be made from the floor.

Kenneth Schoen, Chair
Worcester State College

Donna Beers
Simmons College

Steve Ingram
Norwich University

GOVERNOR'S REPORT

I wish to express my appreciation to the members of the Northeastern Section for my election to the Governor of the Section. I feel honored.

The Board of Governors met during the August Summer Mathematics Meetings in Providence where Dennis Luciano and Gordon Prichett received their George Polya Awards as well as where the American Mathematical Society celebrated its 100th anniversary. The major issue of the five hour meeting, in addition to receiving and acting on committee reports, was resolution of the debate on the repairing the present MAA's headquarters building or moving the headquarters to Alexandria. (See Jim Ward's report in last Spring's Newsletter for a discussion of the intermediate steps.) The Association owns two adjoined townhouses in Washington. One is used as the Association's headquarters building and the other is rental property. Hindsight has clearly shown that not enough of the rental income over the past ten years has been set aside for renovation and maintenance. The result is that extensive repair and renovation needs to be done immediately (\$500,000 - \$600,000). The size of the renovation costs initiated a debate between selling the townhouses and moving the headquarters to Alexandria, a less costly location, or having the renovations done and establishing a National Center for Mathematics at the present location. This would involve negotiating with professional mathematics organizations (e.g. AMS, JPBM, CBMS-organizations) to rent office space in one of the townhouses. The decision at the Providence meeting was to stay in Washington and establish the National Center for Mathematics. This will involve refinancing and enlarging the present mortgage to \$1,000,000 for a ten year period. (Anyone have an extra million that they would like to swap for the engraving of their name on a plaque?) The expected increased interest cost will be approximately \$70,000 per year (Total expenses in 1987 were \$2,506,000). The exterior renovations to both buildings will be done now. Renovations to the present headquarters townhouse will be deferred until the mortgage is paid. I am confident that in the near future we, as a Section and/or as individuals, will be given an opportunity to invest in the future of our Association by becoming involved in fund raising to help allay the expenses of the renovations.

Al Willcox, the Executive Director of the MAA, has announced his decision to retire in September of 1990 after serving in his present position for twenty-two years. A search for Al's replacement is now underway. Nominations should be sent to Professor Deborah Tepper Haimo, Department of Mathematics and Computer Science, Univ. of Missouri - St. Louis, St. Louis, MO 63121.

Both the first and second derivatives of the activity function of the Association have been very positive over the past ten years. We are "asset rich" (the Washington property is valued at over \$3 million), but "operating poor." Our "activity eyes" have been larger than our "pocketbooks." As a result the MAA has accumulated a deficit of \$500,000. The two major ways to increase income is to recruit more members or raise dues. Lets get busy recruiting!

Don Small
Governor

SOFTWARE EXCHANGE

In 1981, our section began a microcomputer software exchange. The "microcomputer revolution" was in its infancy, and there was a dearth of good educational software available. Hence, lots of us were forced to write our own programs to meet the needs of our courses. The Northeastern Section Exchange has been used nation wide, and has served a valuable need in allowing faculty to share software developed for classes, which would have been very expensive or unavailable. However, in the past few years, a wide variety of good (and inexpensive) educational software has become available on the commercial market for an ever expanding variety of microcomputers. Thus, there appears to be a decreasing need to write "customized" software for our local equipment. Consequently, we have decided to discontinue the Microcomputer Software Exchange of the Northeastern Section of the MAA. We are very grateful to all of you who have sent us programs to use in the Exchange, and who made the effort to share your programs with others.

Steve Snover
University of Hartford

Thurmon Whitley
University of New Haven

MINUTES OF THE LAST MEETING

The Spring Meeting of the Northeastern Section was held on June 10-11, 1988 at St. Michael's College in Winooski, Vermont. There were 60 registrants.

Invited Addresses

Matching and Combinatorial Mathematics, by Kenneth Bogart, Dartmouth College.

The SLAW Report: Statistics in the Liberal Arts, by Robin Lock, St. Lawrence University.

Using the Symmetries of a Pentagon to Reduce Typing Errors, by Stan Wagon, Smith College.

STELLA Modeling, by David Daniels, Longmeadow High School.

Math and Origami, by Rona Gurkewitz, Western Connecticut State University.

Contributed Papers

Solutions to the Lane Problem, by Frank Battles, Massachusetts Maritime Academy.

A Stochastic Multi-Categorical Spatial Resource Allocation Model for Large Scale Systems, by Richard Segall, University of Lowell.

A Uniform Geometric Presentation of All the Elementary Transcendental Functions, by Herbert Nichol, Drexel University.

Structured BASIC: Software Comparisons and a Sample Course Description, by Alice Dean, Skidmore College.

A Business College's Approach to Customizing Calculus Instruction, by Alice Miller, Babson College.

Computer Graphics: Alternatives for Algebra and Precalculus Instruction, by Martha DiFazio, Salem State College.

Student Papers

The Skip-Search Algorithm, by Joseph Farina, Western New England College.

Loading Two Railroad Flat Cars, by Marty Couture, Western New England College.

A Technique for Rendering Stellated Polyhedra, by Brett Diamond, Hampshire College.

At the business meeting the Section thanked Edward Sandifer of Western Connecticut State University for serving as Program Chair for this meeting and Richard Cleary of St. Michael's College who was in charge of local arrangements. The Chair informed those in attendance that Don Small is our new governor. Jim Ward, outgoing governor, was commended for a job very well done. The treasurer's report indicated that we are in good financial condition, due especially to the very well attended meeting chaired by Stephanie Troyer of the University of Hartford and hosted by Karen Schroeder of Bentley College last Fall. Book awards, donated by Prentice-Hall, were presented to the above named student presenters.

Laura L. Kelleher
Secretary/Treasurer

WANTED : NEW MAA MEMBERS

As part of a national membership drive, the MAA has instituted a section Membership Incentive Program (MIP). Under this program, an MAA section can earn \$10 for each new member.

The Executive Committee of the Northeastern Section believes that MAA membership is valuable to a wide variety of mathematics professionals and that the MIP offers an opportunity to raise some additional funds for the Section.

We need your help. Please give the membership form which appears below (o. a photocopy thereof) to any of your friends or colleagues who are not now MAA members, but who might like to join.

James E. Ward
Bowdoin College
MIP Coordinator

JOIN MAA TODAY!

Send this application to: MAA Membership Department
1529 18th Street, N.W.
Washington, D.C. 20036

Nominated by the
Northeastern Section

James E. Ward
MIP COORDINATOR

Name _____
Mailing Address _____

Zip _____
Employer/School _____
Position (Rank) _____
Employer's City/State _____
Highest Earned Degree _____ Year Degree Earned _____
Institution Awarding Degree _____
Month/Year of Birth _____
Have you been a member of the MAA before? Yes No

Your membership may begin on July 1 or January 1. You may elect to receive any of the listed combinations of the three MAA journals. All members receive *Focus*, the MAA newsletter.
Please circle the appropriate box corresponding to your initial membership period and the selection of journals you wish to receive. (Rates are guaranteed for the indicated periods only.) Subscription prices are included with dues (see **).

THE AMERICAN MATHEMATICAL MONTHLY (M)
MATHEMATICS MAGAZINE (G)
THE COLLEGE MATHEMATICS JOURNAL (J)

Student Membership	M	G	J	M+G	M+J	G+J	M+G+J
1 year (Jan.-Dec. 1989)	\$29.00	\$23.00	\$25.00	\$36.00	\$39.00	\$31.00	\$ 44.00
1 1/2 year (July 1988-Dec. 1989)	\$43.50	\$34.50	\$37.50	\$54.00	\$57.00	\$46.50	\$ 66.00
Regular Membership	M	G	J	M+G	M+J	G+J	M+G+J
1 year (Jan.-Dec. 1989)	\$48.00	\$35.00	\$39.00	\$61.00	\$65.00	\$52.00	\$ 78.00
1 1/2 year (July 1988-Dec. 1989)	\$72.00	\$52.50	\$58.50	\$91.50	\$97.50	\$78.00	\$117.00

*Student membership available to high school and undergraduate students and to students regularly enrolled in graduate study at least half time. Enclose letter from school or department official confirming status. Student rates apply to unemployed persons who are seeking employment.
**Annual dues include subscription prices as follows: Regular Member \$26 (M), \$17 (J), \$13 (G), \$3 (Focus) Student Member \$13 (M), \$9 (J), \$7 (G), \$1 (Focus)

Payment Enclosed \$ _____ U.S. Funds Only (see blow)
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(MasterCard only--located above name on card)

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A BRIEF HISTORY
OF THE
NORTHEASTERN SECTION
OF THE
MATHEMATICAL ASSOCIATION OF AMERICA

Compiled by
Donald Blackett (Boston University)
and
Shirley Blackett (Northeastern University)

The Northeastern Section of the MAA was inaugurated on November 26, 1955 at a meeting attended by more than seventy people and hosted by the University of New Hampshire. The name originally proposed was the New England Section but the name Northeastern Section was adopted to emphasize that not only New England but also the Maritime Provinces would be represented in the Section. Although most meetings have been in New England, Mount Allison University in Sackville, New Brunswick hosted a memorable summer meeting in 1967.

The list of speakers in the early years included such famous mathematicians and mathematics teachers as Dirk Struik of MIT; David Widder, Garrett Birkhoff, Ralph Beatley, Richard Brauer, and Howard Raiffa of Harvard; Hans Zassenhaus at that time at McGill; Hans Rademacher of the University of Pennsylvania; John Kemeny of Dartmouth; Max Beberman of the University of Illinois; Bob Rosenbaum of Wesleyan; Albert Tucker of Princeton; Oystein Ore of Yale; and Father Bezuska of Boston College. Of special note is Dan Christie of Bowdoin College, who later served as Chairman of the Section and sectional representative on the Board of Governors of the MAA. After his death the annual Dan Christie Memorial Lecture was established in memory of him.

The present national concern for curricular revision seems an echo of the post-sputnik era when the 1958 meeting of the Section included a paper *The Report of the Commission on Mathematics* and another *The School Mathematics Study Group*. In this era many members of the Section generously contributed much time and energy visiting high schools of the region to give lectures and consult with the mathematics teachers.

Among the many members who have served as officers of the Section two who merit special mention for their many years of service are Dick Pieters formerly of Phillips Academy in Andover and George Best, a continuing faculty member at Phillips Academy.

One of the outstanding programs of the Northeastern Section has been the series of short courses held each summer at the University of Maine at Orono. When in 1987 Don Small of Colby College was awarded the MAA Certificate of Meritorious Service, his leadership role as one of the founders and frequent co-director of these short courses was one of the many of his services being recognized.

FALL MEETING

The Fall Meeting will be held at Rhode Island College on November 18-19, 1988 at Providence, Rhode Island. With this the Centennial year of the American Mathematical Society and both Pi Mu Epsilon and the Mathematical Association of America swiftly approaching their seventy-fifth anniversaries, the Northeastern Section is planning a very exciting and informative Fall Meeting. The program of invited speakers features Ed Connors, Chairman of the AMS/MAA Committee on Employment Policy, and Tom Banchoff of Brown University on Friday evening and Saturday morning presentations by Grace Hopper USNR, retired admiral and computer science pioneer, and Ron Graham of AT&T Bell Laboratories and Rutgers University who will be giving the Christie Lecture. Following lunch on Saturday the program will include lectures by Jenny Baglivo of Boston College and Persi Diaconis of Harvard University. Friday's program will include a reception, banquet, and a social and Saturday's program will include both a student paper session and a contributed paper session. Registration will be held in Gage Hall on the Rhode Island College Campus from 3 to 6 P.M. on Friday and from 8 to 10 A.M. on Saturday. For those staying overnight, a block of rooms has been reserved at the Providence Holiday Inn which is near the scenic Federal Hill section of Providence, convenient to Interstate 95 and a 10-15 minute drive from Rhode Island College. Discount rates will be provided to meeting registrants (\$61 plus 10% tax.)

CALL FOR STUDENT PAPERS

Students (and recent graduates) are invited to present papers at the Fall Meeting on topics in mathematics, statistics, or computer science. The presentations will be 15 to 20 minutes in length, on either expository work, research projects, employment experiences, or problems from math periodicals. Prizes will be awarded. This year the Fall Meeting will be held at Rhode Island College on November 18-19.

Almost every college/university has students working on projects, problems, and minor mathematical research. The success of a student paper session depends primarily on faculty members identifying prospective papers, encouraging their students and arranging departmental financial support when possible. If there are no potential student papers on your campus for the Fall Meeting, we urge you to initiate student projects now for presentation at the Spring Meeting.

Interested students should send an abstract and current address, with phone number, by November 7 to : Joseph C. Witkowski, Department of Mathematics and Computer Science, Keene State College, Keene, NH 03431 (603-352-1909). All proposals will be reviewed by department faculty members.

CALL FOR CONTRIBUTED PAPERS

There will be contributed paper sessions at the Spring and Fall meetings. We urge you to make a presentation and let others know what you are doing. At the Fall meeting, we are specifically soliciting papers on either new courses that you have developed or different techniques in teaching standard courses. This is also a good time to start planning a presentation for the Spring meeting. Your presentation should be approximately 15 minutes in length. Send a typed abstract, a brief biography, together with a list of any special equipment that you may need, by November 7, to : Jim Tattersall, Department of Mathematics, Providence College, Rhode Island, 02918. (401-865-2468)

NORTHEASTERN SECTION OF THE MAA

FALL MEETING

RHODE ISLAND COLLEGE

PROVIDENCE, RHODE ISLAND

November 18-19, 1988

PROGRAM

Friday, November 18

3:00-6:00	REGISTRATION	Gaige Hall
3:30-5:00	Executive Committee Meeting	Gaige Room 203
5:00-6:00	Dr. Edward A. Connors, U. of Massachusetts <i>Mathematicians, Bald Eagles and Dinosaurs</i>	Gaige Auditorium
6:00-7:30	BANQUET	Faculty Center
7:30-8:30	Dr. Thomas Banchoff, Brown University <i>The Air Force Cup and Skew Regular Hexahedra : A Course Study</i>	Gaige Auditorium
8:30-	SOCIAL	Gaige Auditorium

Saturday, November 19

8:00-10:00	REGISTRATION	Gaige Hall
8:00-9:00	Student Paper Session	Gaige Room 253
9:00-9:05	Welcoming Address Carol Guardo, President Rhode Island College	Gaige Auditorium
9:05-10:00	RAAdm Grace Hopper USNR (Ret.) <i>Possible Futures in Computing</i>	Gaige Auditorium
10:00-10:30	Coffee/Pastry Break Tour of Book Exhibits	Gaige Hall

10:30-11:30	Dr. Ron Graham, AT&T Bell Laboratories and Rutgers University <i>Christie Lecture : Universal Cycles for Combinatorial Structures</i>	Gaige Auditorium
11:30-11:45	Business Meeting	Gaige Auditorium
11:45-1:00	Lunch	Faculty Center
1:00-1:55	Dr. Jenny Baglivo, Boston College <i>Complexity in Statistical Computations Involving Discrete Data</i>	Gaige Auditorium
2:00-2:55	Dr. Persi Diaconis, Harvard University <i>A Roll of the Dice</i>	Gaige Auditorium
3:00-3:55	Contributed Paper Session	Gaige Room 253

FALL, 1988 PROGRAM COMMITTEE

James J. Tattersall, Providence College, Chair

Frank Ford, Providence College

Mary Russell, Providence College

Frederick Harrop, Rhode Island College, Local Arrangements

ABSTRACTS/SPEAKERS

Mathematicians, Bald Eagles and Dinosaurs

Edward A. Connors, University of Massachusetts

Data on new doctorates in the mathematical sciences from the Annual Survey of the AMS/MAA and the Survey of Earned Doctorates by the National Research Council suggests that the American Mathematician is an endangered species. We present an analysis of the demographics and an agenda to reverse current trends, which if not reversed, will result in severe shortages of mathematical scientists at the beginning of the 21st century. If time permits we will examine the impact of shortages of trained mathematical scientists on our national security and our ability to be economically competitive.

Edward Connors is a Professor of Mathematics at the University of Massachusetts in Amherst, where he has been since 1969. He attended the College of Holy Cross as an undergraduate, received his Master's degree from U. Mass. and his PhD from Notre Dame University. His major mathematical research has been in the area of quadratic forms and classical groups.

He is Chair of the AMS/MAA Committee on Employment and Education (CEEP) and CEEP's Data Subcommittee. Since 1986 he has served as the AMS Representative on the Commission on Professionals in Science and Technology, formerly known as the Scientific Manpower Commission.

The Air France Cup and Skew Regular Hexahedra : A Course Study

Thomas F. Banchoff, Brown University

What is the volume of a cup with a round rim and a square base? Can we make a convex polyhedron with six congruent quadrilaterals as faces? These investigation problems in an elementary college geometry course come together suprisingly and lead to new results, illustrated by models and by computer graphics slides.

Thomas Banchoff received his B.A. from the University of Notre Dame in 1960 and his Ph.D. from the University of California, Berkeley, in 1964. He taught for two years at Harvard and a year at the University of Amsterdam before coming to Brown University in 1967 where he has taught ever since. His main interests are in geometry in 3-space and higher, and in the use of interactive computer graphics in research and in teaching.

Possible Futures in Computing

RADM Grace M. Hopper USNR (ret.)

Possible futures - hardware, software and people as computers move ahead.

The following appeared in the Boston Herald on September 3, 1986:

Former Rear Admiral Grace M. Hopper began a new career yesterday at age 79 with the country's second largest computer company. Hopper had retired last month as the Navy's oldest officer on active duty after a spectacular career as a computer specialist.

Hopper signed on with Maynard-based Digital Equipment Corp. as a full time senior consultant and will become spokeswoman for the company, focusing on industry and government issues related to computers.

Much of Hopper's military service was devoted to keeping the Navy on the leading edge of computer technology. U.S. Navy Secretary John F. Lehman Jr. presented Hopper with the Distinguished Service Medal at her retirement ceremony aboard the U.S.S. Constitution in Boston. Her entry in "Who's Who" takes 34 lines to thumbnail her accomplishments, appointments and honors.

Universal Cycles for Combinatorial Structures

Ron Graham, AT&T, Bell Laboratories

Is it always possible to construct a cyclic arrangement of 0's and 1's of length 2^k so that every possible sequence of length k occurs as a consecutive block somewhere in the sequence? The answer to this classical question is yes, and such "universal" cycles have found applications in a variety of areas, such as cryptography, pseudo-random number generation and magic tricks. In this talk we examine the analogous questions for other structures, such as k -sets of an n -set, partitions of a finite set, permutations of $\{1, 2, \dots, n\}$ and subspaces of finite vector spaces. This is joint work with Fan Chung and Persi Diaconis.

Ron Graham is presently Adjunct Director of the Mathematical Sciences Research Center at AT&T Bell Laboratories. In addition he holds the position of University Professor of Mathematical Sciences at Rutgers University. The following appeared in *Mathematical People* (Birkhäuser Boston, Inc.) :

Ron, as much as anybody, is responsible for bringing high powered math to bear on computer science. Graham's life is itself a scheduling problem that would try the capacity of any computer. He is a remarkably prolific mathematician, publishing more than a dozen papers a year. He sits on the editorial board of some 20 mathematical journals, travels extensively, and lectures frequently. He is also a talented and dedicated juggler, and has been honored for his skills by being elected president of the International Jugglers Association. He constantly works at improving his juggling technique; a net hangs from his office ceiling to snare the occasional ball that escapes him. In his younger years he earned money as a trampoline acrobat, and he still stays in shape by bouncing and flipping on his home trampoline.

Complexity in Statistical Computations Involving Discrete Data

Jenny A. Baglivo, Boston College

Statisticians have devoted a lot of attention to evaluating asymptotic distributions of sample statistics, especially in discrete data problems. Advances in computing technology have motivated recent interest in "non-asymptotic" distributions and many algorithms have been proposed which reduce computational complexity. This lecture will focus on some of the complexity issues involved in developing efficient algorithms for discrete data problems when the underlying probability distributions are known exactly, and survey some of the recent work.

Jenny Baglivo is Associate Professor of Mathematics at Boston College. She earned degrees in Mathematics from Fordham and Syracuse University and a degree in computer science from Syracuse University. She was a postdoctoral fellow in biostatistics at Sloan-Kettering Institute for Cancer Research. Her interests are in applied mathematics and statistics, and in statistical computation.

A Roll of the Dice

Persi Diaconis, Harvard University

I will study what it means for a roll of the dice to be fair. This leads to interesting geometry and physics problems (how many fair die are there?) It gives insight into the use and misuse of probability models in routine scientific work.

The following appeared in *Mathematical People* (Birkhäuser Boston, Inc.) :

His work in statistics is so good that he recently was named a recipient of a MacArthur Foundation Fellowship. As a MacArthur Fellow, Diaconis will receive \$192,000 over the five-year period 1982-1987, tax-free with no strings attached. The purpose of the awards, for which applications are neither solicited nor accepted, is to free people from economic pressures so they can do work that interests them.

In spite of his mathematical achievements, Diaconis insists that he is better at magic, his first career, than he is at statistics. At 14 he left his home in New York City to wander the world as a professional magician. After ten years on the road, he decided to try college. At twenty-four, he enrolled as a freshman. Five years later he earned his PhD from Harvard.

Diaconis applies mathematics to a wide range of real-world problems, claiming that "I can't relate to mathematics abstractly. I need to have a real problem in order to think about it."

DIRECTIONS TO RHODE ISLAND COLLEGE

From North

Take I-95 South to Providence and exit at Atwells Avenue. Turn right (west) onto Atwells Avenue and follow for approximately two miles, then turn right (at hilltop) onto Mount Pleasant Avenue. Entrance to the College is approximately one mile ahead on the left.

From West

Take US-44 East past the Centerdale section of North Providence. Follow US-44 for approximately one mile to Fruit Hill Avenue. Bear right onto Fruit Hill Avenue to the campus entrance (on your left).

From South and East

From the south, take I-95 North to Providence, and from the east take I-195 West to I-95 North to Providence. Then take Broadway exit to second traffic light, turn left onto Atwells Avenue (US-6 West) and follow for approximately two miles, then turn right (at hilltop) onto Mount Pleasant Avenue. Entrance to the College is approximately one mile ahead on the left.

Alternate from the South

Take I-295 North and exit at RI-195. Follow RI-195 East to Killingly Street exit. Turn left onto Killingly Street and continue to traffic light. Turn right onto Manton Avenue and follow to traffic light, turning left onto Fruit Hill Avenue. Fruit Hill Avenue entrance to campus is approximately one-half mile ahead on the right.

CAMPUS MAP FOR RHODE ISLAND COLLEGE



FUTURE MEETINGS

In addition to those listed on the inside front cover, the following future meetings are being planned :

SPRING, 1990

Roger Williams College
June 8,9

Local Arrangements Chair : John O'Connell

FALL, 1990

Framingham State College
November 16,17

Local Arrangements Chair : Thomas Koshy

NEWS FROM NEMATYC

As of July 1, 1988 the New England Mathematics Association of Two-Year Colleges officers are President Veronica McConnell of Bristol Community College (MA), Vice-President Helene Savicki of Dean Junior College (MA), and Treasurer Jean Smith of Middlesex Community College (CT).

The host school for the March 4, 1989 conference of NEMATYC will be Dean Jr. College in Franklin, MA. The theme of the meeting is *The Math Curriculum : Turn On A Turn-Off*. For additional information contact Helene Savicki at (508)-528-9100 x275.

AWARDS

The Northeast region has done quite well when it comes to the winning of national awards. The George Polya Award, presented to authors of articles of expository excellence, was shared by Dennis Luciano and Gordon Prichett for their article *Cryptology : From Caesar Ciphers to Public-key Cryptosystems* which appeared in THE COLLEGE MATHEMATICS JOURNAL in January of 1987. Dennis is Department Chair and Associate Professor of Mathematics at Western New England College and is the Chair of NES/MAA. Gordon is Academic Vice-President at Babson College and served for many years as Secretary/Treasurer of our Section.

The Lester R. Ford Award, also presented to authors of articles of expository excellence, was won by Stan Wagon, Associate Professor of Mathematics at Smith College, for his article *Fourteen Proofs of a Result About Tiling a Rectangle* which appeared in the August-September 1987 issue of THE AMERICAN MATHEMATICAL MONTHLY. Stan was one of the featured speakers at our Section Meeting last June at St. Michael's College.

David S. Daniels who teaches mathematics at Longmeadow High School was one of six Massachusetts teachers to receive the 1988 Presidential Award for Excellence in Science and Mathematics Teaching. He was also one of the featured speakers at our Section Meeting last June at St. Michael's College.

REMINDER

Next Spring's meeting will be held at Keene State College (NH) on June 2 - 3, 1989. Local arrangements are under the direction of Joe Witkowski. The Program Committee consists of Joan Ferrini-Mundy of the University of New Hampshire (Chair), Phil Mahler of Middlesex Community College, and Richard Pelosi of Western New England College. The theme of the meeting will be *Current Issues in Mathematical Pedagogy*. Topics will include the changing calculus curriculum with attention to the role of technology and the influence of discrete mathematics.

EDITOR'S MESSAGE

Tuesday, March 1, 1989 is the date by which all materials for inclusion in the Spring 1989 issue of the Newsletter must be in the hands of the editor:

Frank P. Battles
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Massachusetts Maritime Academy
P.O. Box D
Buzzards Bay, MA 02532-1803
(508)-759-5761(school) (508)-224-8388(home)

This is two weeks earlier than previous deadlines for the Spring Newsletter and is due to the fact that next Spring's meeting is about two weeks earlier than usual.

Many thanks to Donald and Shirley Blackett for preparing the history of the Section which appears on Page 6 of this issue. Jim Ward is writing a biographical sketch of Dan Christie for whom the Christie Lecture is named and this should appear in the next issue. Additional contributions relating to the history of our Section would be gratefully received.

Thank you to the other contributors to this issue as well as to Drs. Laura Kelleher and David Kan, both of Mass. Maritime, for their invaluable assistance in the preparation of this Newsletter.

PRE-REGISTRATION FORM

NORTHEASTERN SECTION-MAA

FALL MEETING NOVEMBER 18-19, 1988 RHODE ISLAND COLLEGE

Mail Registration Form to: Professor Frederick F. Harrop
Dept. of Mathematics and
Computer Science
Rhode Island College
Providence RI 02908

Checks should be made out to: MAA/NES (no refund after November 11, 1988)

You may register at the meeting if you wish; however, it would facilitate the organization of the meeting if you registered by mail at an earlier time. In any case, banquet and luncheon reservations should be made by Tuesday, November 1, 1988. Spouses and guests are welcome at the banquet and buffet.

See the previous page for housing information.

REGISTRATION: Name _____
Institution _____
Address _____
City, State, Zip _____
Telephone (____) _____

REGISTRATION FEE: MAA Member (\$10.00)
Non-member (\$15.00) } \$_____
Student or unemployed (\$5.00)

MEALS: Banquet* (6 pm, Friday)
Number () x \$15.50 \$_____

Luncheon buffet** (11:45 am, Saturday)
Number () x \$10.50 \$_____

TOTAL \$_____

* The menu for Friday night banquet includes baked stuffed boneless chicken breast with gravy as the main course.

** The menu for the Saturday luncheon buffet will be: meatballs and sausage; chicken tenders with sauce on the side; assorted cold meat with cheese platter; pasta; celery tray; potato salad; tri-bean salad; tossed salad with dressing; assorted pastries; beverage.

Northeastern Section MAA

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