FOCUS

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MAA Board Actions: Secretary and Associate Secretary Elected, MAA to Stay in Washington

Kenneth A. Ross, MAA Secretary

This is a brief report of Board actions. The Board elected Gerald L. Alexanderson to the position of Secretary; his five-year term officially begins in January 1990 at the end of the Louisville meeting. The Board also elected its current Secretary to the position of Associate Secretary, newly created by the passage of bylaw changes approved by the members at the business meeting in Providence (see FOCUS, May-June, 1988, page 4). This means that I will continue to arrange the meetings, but that Jerry Alexanderson will attend to the normal Secretarial duties, including assisting the President, the Board of Governors, and the Executive and Finance Committees. On becoming Secretary, Jerry Alexanderson will be an Officer of the Association and will be involved with policy making, while I will no longer fill these roles.

The Board elected William Watkins, co-editor of the COLLEGE MATHEMATICS JOURNAL, to serve on the Executive Committee for two years.

The big news is that the Board has decided that the MAA Headquarters should remain in its current location in Washington, D.C. This was based on recommendations of the Executive and Finance Committees, which in turn were based on recommendations of the ad hoc Committee to Recommend a Decision on the MAA Headquarters, that was chaired by Donald L. Kreider. This significant decision was based on several factors, not the least being that a move out of the District of Columbia to a location such as Alexandria, Virginia would be effectively irreversible. Since the MAA is a national advocacy group for mathematics education and because our cooperative activities with other mathematical associations are of increasing importance, Washington is the best place for our headquarters. Also considered was the fact that the repairs needed on our buildings will raise their value, so that the net worth of the Association will not suffer.

The Board approved an impressive, massive report of the MAA/ACM/IEEE Computer Society Task Force on Teaching Computer Science within Mathematics Departments. This document should be very useful to any mathematics department or division that includes the teaching of computer science. Details will appear in a later issue of FOCUS.

(MAA Board Actions continued on page 2.)

Contributed Paper Sessions and Minicourses for the Phoenix Meeting

This early preliminary announcement of the Phoenix meeting is made in order to encourage members' participation and to provide lead-time for organizing the contributed paper sessions. The meeting will be held January 11–14 (Wednesday–Saturday) in Phoenix, Arizona. Don Bernard Zagier will give the Hedrick Lectures. There will be other invited MAA addresses, Joint AMS-MAA addresses, minicourses, and various panel discussions. There will be activities with special emphasis on new calculus initiatives, including a special address by Bassam Z. Shakhashiri, Associate Director at the National Science Foundation with responsibility for the Directorate for Science and Engineering Education at the National Science Foundation.

Contributed paper sessions on selected topics will include the following subjects listed with their organizers:

PRECALCULUS MATHEMATICS *S. C. Bhatnagar, University of Nevada, Las Vegas* Papers on all aspects of precalculus mathematics are invited; however, the ones emphasizing its importance independent of calculus, are especially encouraged.

WRITING ACROSS THE CURRICULUM *Gerald M. Bryce, Hampden-Sydney College* Many colleges and universities are instituting Writing Across the Curriculum programs. This session will explore how departments of mathematical sciences can contribute to such programs.

GRAPHING CALCULATORS *Gregory D. Foley, Ohio State University* Graphing calculators, or hand-held computers, such as the Casio fx-8000G, Hewlett-Packard 28S, and Sharp EL-5200, combine the capabilities of a scientific calculator, a programmable computer, and an interactive-graphics computer system. Papers are solicited that deal with specific uses of such devices that are appropriate to the undergraduate mathematics curriculum.

(Paper Sessions and Minicourses continued on page 3.)

(MAA Board Actions continued from page 1.)
This meeting was the AMS's centennial celebration and it included the MAA's formal presentation of a 547-pound sculpture of Carrara marble titled *Torus with Crosscap and Vector Field,* created by Helaman Ferguson, a mathematician and sculptor at Brigham Young University. A photograph of this sculpture opened the Annual Meeting program in the October 1987 issue of FOCUS and a poster showing it is available from the AMS Meetings Department in Providence ($10 plus $2 for shipping).

Renovation Plans for MAA Headquarters

The MAA Board of Governors voted that the Association Headquarters should remain at 1529 Eighteenth Street, NW, and that the Association should renovate, starting with needed exterior work on 1529 and the rental property which the Association owns at 1527. See "MAA Board Actions" in this issue of FOCUS.

Repairs will be begin as soon as arrangements can be made. The immediate needs are to assure the integrity of the buildings, putting roofs and shells into good shape and then to bring the 1527 Eighteenth property into condition for MAA use or for rental. The leaseholders at 1527 Eighteenth Street moved out at the beginning of April because of uncertainties connected with the repairs and the MAA's potential need for space in the 1527 building. As recommended by the Building Committee and endorsed by the Board of Governors, the Association will seek mathematical tenants to join it and the Conference Board of Mathematical Sciences on Eighteenth Street.

The immediate costs of renovation and money to replace lost rental income will be met by a new 10-year mortgage of about $1,000,000, replacing the existing 30-year mortgage of about $300,000. The Association has benefited from owning its headquarters in past years through its very low cost for office space, through the income from rental of 1527, and through a substantial increase in the value of this property. However, a dollar measure of these benefits will be easier to see because future accountings will easily segregate building operations within MAA's general financial statements.

Refinancing to cover renovation and moving from a 30-year mortgage to a 10-year mortgage will mean greater annual costs, but it will also mean a year-by-year increase of the Association's equity in property–its most substantial asset.

The resolve to stay in Washington was and is strong. The decisions in Providence on these matters were unanimous. The prospect of building a more general mathematical center at 1527-1529 Eighteenth Street is exciting. The MAA staff is eager to move ahead, putting these plans and decisions into effect.

The MAA Nominating Committee (Ronald Davis, Jerome Goldstein, Ivan Niven, Doris Schattschneider, and Lynn Steen) invites the membership to recommend names of appropriate candidates for Second Vice-Presidnet, First Vice-President, and President of the Association. Any member who wishes to send names should address them to the chair of the Committee, Professor Jerome Goldstein, Department of Mathematics, Tulane University, New Orleans, Louisiana 70811.

A sample problem from the 29th International Mathematical Olympiad:
If $a, b, and (a^2 + b^2)/(ab + 1)$ are positive integers, show that the last of these must be a perfect square.

Mathematical Olympiad and Contests: Results for 1988

The American High School Mathematics Examination program culminates in the US and International Mathematical Olympiads (USAMO and IMO). This year the IMO was held in Australia, with a record number of countries sending contestants, 49 countries in all. The questions were particularly difficult. The number theory problem given above is representative of this and is also interesting because it emerged from computer experimentation. Eleven of the 268 students participating in the IMO solved this problem, with a special prize for a particularly elegant solution going to a student from Bulgaria.

The top 10 teams in order of standing were: the USSR, Romania, the People's Republic of China, the Federal Republic of Germany, the People's Republic of Vietnam, the USA, the German Democratic Republic, Bulgaria, France, and Canada. Particularly notable were the strong performances by China, Vietnam, and Canada. "The U. S. Team turned in a strong performance, earning 5 silver medals and a bronze on what was an usually difficult set of problems," said Gerald Heuer, in an interview immediately after learning the results. "While we are somewhat disappointed at placing sixth, we have to admire the superb scores of the top five countries and we look forward to a stronger showing by the U.S. team in West Germany next year."

The US team was Hubert L. Bray of Houston, Texas; Jordan S. Ellenberg of Potomac, Maryland; Samuel Kutin of Old Westbury, New York; Tal N. Kubo of Brookline, Massachusetts; Eric K. Wepsic of Boston, Massachusetts; and John Woo of Pepper Pike, Ohio. These six were chosen from the 24 students invited to the four-week training session held this year at the US Naval Academy. The team is picked on the basis of the strength of performance on the USAMO and on training examinations given during the session. The students at these sessions not only give us this year's IMO team but also provide a core of seasoned contestants for future Olympiads.

STEPS TO THE OLYMPIAD The American Mathematics Competitions begin with the Junior High School Mathematics Examination (JHSME) in December, although this examination is not part of the formal ladder leading to the Olympiad. In 1988 over 3,000 schools participated in JHSME representing participation by over 200,000 students. Schools wishing to participate in any of these examinations should get in touch with the AMC directly (see box below).

The formal steps on the path to the Olympiad begin with the American High School Mathematics Examination (ASHME). In 1988 over 6,000 schools participated in ASHME with almost 390,000 individual examinations being sent out. Students scoring above 100 points on ASHME were invited to participated in the American Invitational Mathematics Examination (AIME) and 7,184 students did so.

A linear combination of each student's ASHME and AIME scores is used to select students to participate in the USAMO, with the

cut-off level set to yield about 150 participants (in 1988 the number was 146). The USAMO itself has eight winners. This year they were Hubert L. Bray, Jordan S. Ellenberg, Joshua B. Fischman, Tal N. Kubo, Nhat Nguyen, David M. Patrick, Ravi D. Vakil, and Eric K. Wepsic. See photograph and legend for more information.

The eight USAMO winners stand atop a pyramid of young mathematical talent that is broad and deep, and includes contestants from Canada, for instance, Ravi D. Vakil who went on to a very strong performance as a member of the Canadian team in the 1988 IMO. Schools wishing to recruit strong students in mathematics should obtain the honor and merit roll listings of AHSME participants available from the AME office. See box below.

The Mathematical Olympiad activities are sponsored by 7 national associations in the mathematical sciences with arrangements carried out by the MAA's various Committees on American Mathematical Competitions. Financial support was provided by IBM, the Army Research Office, the Office of Naval Research, Hewlett-Packard, and the Matilda R. Wilson Fund.

Winners of the United States American Mathematical Olympiad. Front Row, from left to right: Tal N. Kubo of Brookline, Massachusetts; Joshua B. Fischman of Bethesda, Maryland; Erik K. Wepsic of Boston, Massachusetts; David M. Patrick of Batavia, New York; and Hubert L. Bray of Houston, Texas. Second Row: Ravi D. Vakil of Toronto, Ontario, Canada. Third Row, from left to right: Nhat Nguyen of Columbus, Ohio; and Jordan Ellenberg of Potomac, Maryland. The winners were photographed around a sculpture of Albert Einstein in the gardens surrounding the National Academy of Sciences in Washington, D.C., where they were honored on June 7, 1988.

For information about the American Mathematical Competitions, write to: Dr. Walter E. Mientka, Executive Director, AMERICAN MATHEMATICAL COMPETITIONS, Department of Mathematics and Statistics, University of Nebraska, Lincoln, Nebraska 68588.

(Paper Sessions and Minicourses continued from page 1.)

HISTORY OF MATHEMATICS *Charles V. Jones, Ball State University* Several kinds of papers are appropriate for this session. First, papers on the history of a mathematical topic or concept; second, papers that describe effective or innovative uses of history in the mathematics classroom (e.g., tested techniques of motivating, clarifying, or enriching classroom topics with history are appropriate); third, using history to encourage writing by mathematics students (e.g., a history of mathematics courses where writing is a key tool used in understanding concepts).

WHAT IS HAPPENING WITH CALCULUS REVISION *John W. Kenelly, National Science Foundation, and Thomas W. Tucker, Colgate University*

HUMANISTIC MATHEMATICS *Elena Anne Marchisotto, California State University, Northridge, and Alvin White, Harvey Mudd College* Humanistic Mathematics promotes research and instruction that present mathematics as a richly rewarding human experience; it focuses on those aspects of mathematics that have ensured its pursuit in every society. Appropriate topics for this session include: research and classroom activities that incorporate history, philosophy and ethics; explore discovery and invention in mathematics; examine the relationship of mathematics to other disciplines; emphasize what is creative, beautiful and useful in mathematics; and promote the idea that students and teachers are learning together.

Presentations are normally limited to ten minutes, although selected contributors may be given up to twenty minutes. Individuals wishing to submit papers for any of these sessions should send the following information to the MAA Washington office (1529 Eighteenth Street, N.W., Washington, D.C. 20036) by September 30: (1) title; (2) intended session; (3) a one-paragraph abstract for distribution at the meeting; and (4) a one-page outline of the presentation.

Rooms where sessions of contributed papers will be held are equipped with one overhead projector and screen. Blackboards are not normally available. Persons having any other equipment needs should notify the Secretary (Kenneth Ross, Department of Mathematics, University of Oregon, Eugene, Oregon 97403) as soon as possible, but in any case prior to November 1. Upon request, the following will be made available: an additional overhead projector, 35 mm slide projector, 16 mm film projector, or VCR/VHS with one color monitor.

MINICOURSES In addition to these contributed paper sessions, fifteen minicourses, the first five of which will involve microcomputers, will be offered at the Phoenix meeting.

Teaching Mathematical Modeling Frank R. Giordano, United State Military Academy, and Maurice D. Weir, Naval Postgraduate School

muMath Workshop Wade Ellis, Jr., West Valley College

Computer Graphics in Elementary Statistics Florence S. Gordon, New York Institute of Technology, and Sheldon P. Gordon, Suffolk Community College

Using Computer Graphing to Enhance the Teaching and Learning of Calculus and Precalculus Mathematics Franklin D. Demana and Bert K. Waits, Ohio State University

Computer Based Discrete Mathematics Nancy Baxter, Dickinson College, and Ed Dubinsky, Purdue University

Using History in Teaching Calculus V. Frederick Rickey, Bowling Green State University

(Paper Sessions and Minicourses continued on page 4.)

(Papers Sessions and Minicourses continued from page 3.)

Applications of Discrete Mathematics Fred S. Roberts, Rutgers University

Learning Mathematics Through Discrete Dynamical Systems James T. Sandefur, Georgetown University

Applications of the HP-28S Supercalculator for More Experienced Users Thomas W. Tucker, Colgate University

Applied Mathematics via Classroom Experiments Herbert R. Bailey, Rose-Hulman Institute of Technology

Creating Order out of Chaos in Freshman Mathematics: Instituting a Mathematics Placement Program Billy E. Rhoades, Indiana University at Bloomington (sponsored by the Committee on Placement Examinations)

Modeling with Poisson Process Linn I. Sennott, Illinois State University

Writing in Mathematics Courses George Gopen, Director of Writing Programs, and David A. Smith, Professor of Mathematics, Duke University

ADA for Mathematicians Joseph Straight, SUNY College at Fredonia

Surreal Numbers Leon Harkleroad, Bellarmine College and Cornell University

Survey on Preparation for Graduate School

Richard D. Neidinger

Which mathematics courses should be recommended to an undergraduate mathematics major who is considering graduate work in the mathematical sciences? To help answer this question, I surveyed 102 graduate schools in mathematics (all those rated over 1.4 in Scholarly Quality of Program Faculty, AMS NOTICES, April 1983). Impressively, 76 schools responded.

Real Analysis (through Riemann-Stieltjes integral)	3.30
Advanced Calculus (vector calculus and PDE)	3.08
Differential Equations	2.83
Linear Algebra (to dual spaces and canonical forms)	2.75
Complex Analysis	2.54
Abstract Algebra II (through Galois theory)	2.27
Introduction to Toplogy	2.21
Numerical Analysis	1.63
Mathematical Statistics	1.48
Data Structures& Algorithms—Computer Science	1.14

The survey instructions follow. This was originally intended for use only at Davidson College, thus Davidson's nine required courses are assumed and the survey listed ten electives selected from Davidson's offerings. Assume a student completes the following required courses: Calculus through Multivariate Calculus, Programming and Problem Solving (Computer Science), Linear Algebra with Applications, Introduction to Abstract Mathematics (including set theory), Discrete Mathematics, Probability, and Abstract Algebra. Please indicate your recommendation of the following additional courses as preparation for graduate degree programs in your department (including Master's and Ph.D. programs in applied mathematics, operations research, and statistics as well as pure mathematics). Please check one of the following for each course: Essential (or Required) (4), Highly Recommended (3), Recommended (2), and Optional (1). Blanks were assigned 0 points.

Responses did appear normally distributed around these averages. Due to the undecided status of many undergraduates, responses were averaged over all types of programs. Where an applied mathematics perspective was indicated, the top five courses listed above remained highly recommended and Numerical Analysis joined the group while Abstract Algebra II and Introduction to Topology fell to optional. Mathematical Statistics is highly recommended for Statistics programs; Data Structures for Computer Science.

Many comments stressed the flexibility of their graduate programs to adjust to different backgrounds, though several emphasized the importance of "mathematical maturity" as gained in proof-oriented algebra and analysis courses. Davidson College sincerely thanks all those who participated and included comments which help personalize this effort.

Richard D. Neidinger is an Assistant Professor of Mathematics at Davidson College in Davidson, North Carolina.

More Women Sought for MAA Committees

Patricia Kenschaft

At its first meetings the Committee on Participation of Women discussed at length how to involve more women in the national MAA committees, and found no quick nor easy solution to the underrepresentation of women shown by the following statistics. About 23% of the MAA members listed in the CML are women, but only about 18% of the members of the committees involving undergraduate education, and only 11% of those deciding publication awards and prizes. Indeed, only 11% of the individuals (45 of 425) on all MAA committees, excluding those specifically addressing the topic of underrepresentation of certain groups in mathematics, are female.

Altogether there are 130 MAA committees with 812 slots filled by 476 individuals. Although terms typically run for three years, the need for continuity and the desire for reappointment means that only about 75 of the potential 270 openings can be filled by newcomers each year; thus, achieving a better balance of groups on MAA committees will take some time.

"The 'problem' in short, is that we have too many dedicated and competent people working for the MAA and too many more people who would like to help out," according to Ken Ross, Secretary of the Association. The MAA leadership is aware of this problem, which affects more than just women. Eight of the 38 MAA leaders who hold 4 or more committee appointments are women. This is 21%, which suggests that the probability of a woman committee member becoming a top leader may be the same as that of a man.

Since a higher fraction of young mathematicians are women, this problem especially affects them. How can new blood be introduced into an organization that has so many willing and competent, experience leaders *before* the latter retire. This problem merits widespread thought and dedicated action.

Patricia Kenschaft is a Professor of Mathematics at Montclair State College in Upper Montclair, New Jersey, and chairs the MAA's Committee on Participation of Women.

Dorothy L. Bernstein, 1914–1988

R. P. Boas

Dorothy Lewis Bernstein was born in Chicago, April 11, 1914. In 1939 she received her Ph.D. from Brown University for a thesis on double Laplace transforms, which have unexpected properties (In recent years, Soviet mathematicians have been rediscovering some of her results.) Her later mathematical interests were in partial differential equations. She taught at Mount Holyoke College, the University of Wisconsin, and the University of Rochester before moving to Goucher College in 1959, where she was the chair of the Department of Mathematics from 1960–1970. After retiring from Goucher, she was Visiting Professor of Applied Mathematics at Brown University during 1979–1985. She died in Providence, Rhode Island on February 5, 1988.

While at Rochester in the 1950's, Professor Bernstein attended a course in computing at IBM and became convinced of the importance of the computer in the undergraduate curriculum. She succeeded in obtaining an early computer for Goucher, one of the first computers at a small college, and gradually introduced the use of computers throughout undergraduate mathematics. Together with local education officers and a colleague at the University of Maryland, she founded the American Association for Educational Use of Computers, and for several years directed institutes on the use of computers for high school teachers.

Professor Bernstein was a member of the MAA for 49 years. She was active in Association affairs at least from 1965 onward, and held many important positions. There is space to mention only a few. She served as Governor of her Section (Maryland-D.C.-Virginia) in 1965–1968; served on the Committee on the Undergraduate Program in Mathematics in 1967–1969 and 1979–1980; chaired the Committee to Study the Reorganization of the Association's Journals in 1966-1967; was First Vice-President for 1972–1973, and chaired the Committee on Purchasing a Building in 1975. In 1978 she was elected President of the Association for 1979–1980, the first woman to serve in that position. Through 1986, she continued to serve the Association in a variety of capacities.

One does not get to do such things by accident. As I learned when Dorothy was serving as First Vice-President, it was not just her capacity for hard work that made her so effective a committee member and officer; it was her sturdy common sense, her immunity to persuasive cant, and her intolerance of nonsense. It is arguable that the most important things that a President of the MAA does are to appoint the right people to committees and to keep the Executive and Finance Committees working smoothly. Dorothy could do those things, even though her arthritis prevented her from visiting as many Sections as she would have liked. It was a great pleasure to me that, as Chairman of the Nominating Committee, I was able to telephone Dorothy Bernstein in 1978 to ask her to accept the Presidency of the MAA.

R. P. Boas is Professor Emeritus, Northwestern University.

In Memoriam

Thomas T. Bauman, Associate Professor, University of Florida, died 8 March 1988, at the age of 45. He was an MAA member for 18 years.

Jane D. Bowman, teacher, Woodson High School, Washington, D.C. died 11 February 1988. She was an MAA member for one year.

James C. Corsan, Computer Programmer, Ohio Development Department, died 9 May 1988 at the age of 39. He was an MAA member for four years.

William Durant, Mathematics Department Head, Boston Latin School, died 29 March 1988 at the age of 58. He was an MAA member for 28 years.

Istvan Fary, Professor, University of California at Berkeley, died 2 November 1984 at the age of 62. He was an MAA member for 26 years.

Daniel Finkel, retired, died 12 December 1987 at the age of 71. He was an MAA member for 43 years.

Orrin Frink, Professor Emeritus, Pennsylvania State at University Park, died 4 March 1988 at the age of 86. He was an MAA member for 58 years.

Orville G. Harrold, Department Chair, Florida State University, died 16 May 1988 at the age of 78. He was an MAA member for 36 years.

George G. Harvey, Professor Emeritus, Massachusetts Institute of Technology, died 9 April 1988. He was an MAA member for 53 years.

Colonel Russell B. Ives, Manager AI Tech, Grumman Aerospace, died 8 June 1988, at the age of 61. He was an MAA member for 2 years.

John C. Knutson, Instructor, Portland Community College, died 22 June 1988 at the age of 66. He was an MAA member for 27 years.

Roger C. Lyndon, Professor, University of Michigan at Ann Arbor, died 8 June 1988 at the age of 70. He was an MAA member for 38 years.

Gordon Pall, Professor, Louisiana State University, died December 1987. He was an MAA member for 51 years.

William V. Parker, Professor Emeritus, Graduate Dean, Auburn University, died November 1987. He was an MAA member for 56 years.

Bruce L. Reinhart, Professor Emeritus, University of Maryland, died 19 July 1988 at the age of 57. He was an MAA member for 33 years.

Hugo B. Ribeiro, Professor, Pennsylvania State University, died 26 February 1988 at the age of 77. He was an MAA member for 38 years.

Walter M. Robbins, retired consultant, died 12 October 1987 at the age of 63. He was an MAA member for 41 years.

Gisela Rosch, Instructor, Valencia Community College, died 7 March 1988 at the age of 64. She was an MAA member for 22 years.

Information Needed to Strengthen Undergraduate Mathematics Programs

Information on particularly successful programs is sought to guide the CUPM Subcommittee on the Major in Mathematical Sciences. Please supply as much of the following information as you can give us.

ABOUT YOUR DEPARTMENT Roughly how many graduates in the mathematical sciences do you have per year and what percentage of your school's graduates do these represent? What can you tell us about where your graduates go after graduating? To what extent is your department involved in the training of future teachers? What programs do you have to tap the pools of nontraditional or minority students?

SUGGESTIONS TO THE SUBCOMMITTEE What sorts of initiatives should the committee consider? What would make our major programs attractive to sizable numbers of students while assuring success for those who go on to graduate study?

Please send responses to the committee chair: Bettye Anne Case, Department of Mathematics, Florida State University, Tallahassee, Florida 32306-3027.

People in the News

George Berzsenyi left Lamar University, Beaumont, Texas to become Chair of the Mathematics Department at Rose-Hulman Institute of Technology in Terre Haute, Indiana.

James Gleick received the first Joint Policy Board for Mathematics (JPBM) Communications Award on July 14, 1988 in Minneapolis, Minnesota during the Annual Meeting of SIAM. Gleick is a science writer for THE NEW YORK TIMES and is the author of CHAOS, published in 1987 by Viking Penguin, Inc.

Neil R. Grabois, former provost of Williams College, Williamstown, Massachusetts became president of Colgate University in Hamilton, New York on July 1, 1988.

NSF/AWM Travel Grants Available for Women

These travel Grants will enable women to attend research conferences in their field, providing a valuable opportunity to advance women's research activities and to increase awareness that women are actively involved in research. More women at meetings will increase the pool from which speakers at subsequent meetings are drawn, and will give better representation of women speakers at research conferences now and in the future.

TRAVEL GRANTS The grants will support travel and subsistence to a meeting or conference in the applicants field of specialization; the maximum is $1000 for domestic travel, and $2000 for foreign travel.

ELIGIBILITY Applicants must be women holding a doctorate in a field of research supported by the Division of Mathematical Science of the NSF (or have equivalent experience). A woman may not be awarded more than one grant in any two-year period, and should not have other available sources of funding (except possible partial institutional support).

TARGET DATES There will be four award periods per year, with applications due: November 1, 1988, February 1, 1989, May 1, 1989, and August 1, 1989. Applicants should send a discussion of how the propsed travel would benefit their research program, and a curriculum vitae to: Association for Women in Mathematics, P.O. Box 178, Wellesley College, Wellesley, Massachusetts 02181.

Authors Sought for NCTM Yearbook on Discrete Mathematics

Potential authors are invited to submit manuscripts for the 1991 Yearbook of the National Council of Teachers of Mathematics entitled DISCRETE MATHEMATICS ACROSS THE CURRICULUM, and devoted to the content and methods of discrete mathematics that ought to be included in school mathematics programs (K–12).

Discrete mathematics is emerging as an important part of the standard curriculum in college, and preparatory work in this area is becoming essential for college-bound students. Recent proposals for curriculum reform of school mathematics call for the inclusion of the study of discrete mathematics topics for all students. This Yearbook is a forum for discussion on what discrete mathematics topics are appropriate for grades K–12, and how and where they should be taught.

The Yearbook editor is Margaret J. Kenney, Boston College, Chestnut Hill, Massachusetts.

Guidelines for authors, including more complete descriptions of the topics to be addressed and instructions for preparing manuscripts, may be obtained from: Christian R. Hirsch, General Yearbook Editor, Department of Mathematics, Western Michigan University, Kalamazoo, Michigan 49008.

The deadline for submission of manuscripts is March 1, 1989.

Budapest Semester in Mathematics

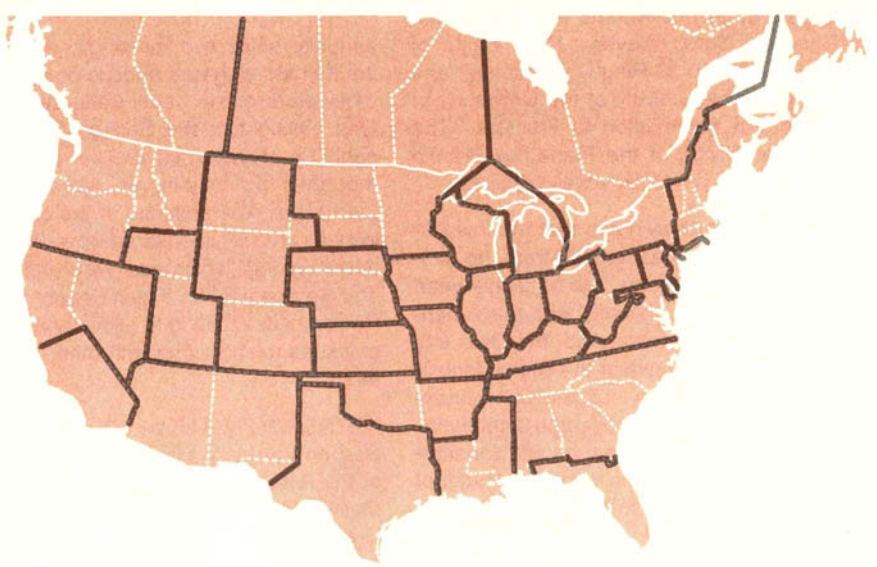
The study abroad program *Budapest Semesters in Mathematics* will soon complete its fourth successful year. Through it undergraduates from over forty institutions from all over the United States and Canada have benefited from the excellence of Hungarian mathematics education.

- All courses are taught in English.
- Classes are held in small groups.
- Emphasis is on creative problem solving.
- Credits are transferable to American colleges and universities.
- The school is near the center of historic Budapest.
- Living costs are modest.

Semesters start in the first week of September and February. The deadline for applications for the Fall semester is April 30; October 15 for the Spring semester. Early applications are encouraged and will be processed promptly. Tuition is $2150 (U.S.) per semester.

For further information and application forms, ask your mathematics advisor, the chairperson of the Department of Mathematics at your college, or write to the American Program Director: Professor Paul D. Humke, Department of Mathematics, Saint Olaf College, Northfield, Minnesota 55057; (507) 663-3113.

FOCUS on MAA SECTIONS



What's Happening in the Sections?

David W. Ballew
Chairman, Committee on Sections

Many claim that the MAA's 29 sections represent the lifeblood and substance of our organization. Indeed, to many of our members, the Sections *are* the MAA. For example, this past year more than twice as many members attended Section meetings than attended the Winter and Summer meetings combined—over 4500 members attended Section meetings. A total of over 800 papers were presented. More than 100 invited addresses, 550 contributed papers, and 175 student papers were given. Attendees enrolled in 24 short courses and minicourses.

Statistics can only suggest the scope and impact of MAA Section activities. Most important is the exchange of ideas between Section members and the cementing of old professional friendships and the making of new ones. The Section-by-Section summaries are a record of accomplishments in mathematical, educational, and curricular matters, and a source of ideas for all Sections. Look for advocacy on educational issues, promotion of public appreciation and understanding of mathematics, measures to strengthen participation of women and minorities, ways to build bridges between school and collegiate mathematics, especially interesting topics in mathematics itself, and measures that will improve colllege mathematics teaching. The following capsules show the diversity and importance of the contributions of many, many dedicated MAA Section workers.

ALLEGHENY One very popular and important portion of the Spring Meeting was a panel discussion on Teacher Certification in Pennsylvania and West Virginia; this program stimulated considerable discussion and plans for further action. In the summer of 1988 the Section sponsored a four-day Short Course, presented by Fred Roberts of Rutgers University, on the "Applications of Graphs and Relations."

EASTERN PENNSYLVANIA & DELAWARE The Section sponsors two meetings each year—the Fall Meeting, broad in nature, and the Spring Meeting, devoted to a special topic. This Spring Meeting's theme was Operations Research with four invited addresses. The Section sponsored two summer workshops at Messiah College: "Applied Mathematics via Classroom Experiments" by Herbert Bailey and "Mathematics History Workshop" by Fred Rickey.

FLORIDA The Section has made a concentrated effort to attract undergraduates and undergraduate papers by giving lodging support to speakers, by giving limited expense support to any undergraduate attending a meeting, and by awarding an MAA book to each of the top 27 Florida students placing on the AHSME. The Section notes with pride that over 13,000 students from 196 Florida schools participated in the AHSME examination. The Section hosted gatherings of the Florida Two-Year College Mathematical Association and the Florida Association of Mathematics Educators in conjunction with the Section's meetings. Florida should be noted for its unique regional meetings held throughout the year. This year there were four such meetings which drew a total attendance of over 235 with 35 presented papers.

ILLINOIS The Section is making a concerted effort to influence public and political opinion. Some examples include participation in the Cooperative Illinois Mathematics Collegiate Placement Program (the section created a multilevel postsecondary mathematics placement system and now maintains a central data bank for purposes of monitoring the placement process), support and encouragement of the Illinois Mathematics and Science Academy, a special residential three–year high school for advanced students, and the active support and organization of a high school lectureship program. The Section has received a superb report from the Ad Hoc Committee on High School Geometry for giving a history of the problems, data describing the present state, and recommendations for improvement and expansion. The Spring meeting included sessions on Classroom Notes, and panel discussions on discrete mathematics and the Holmes/Carnegie Reports. Linda Sons writes in greater detail of this Section's activities in her article in the Center Section of this issue of FOCUS.

INDIANA The Indiana Section holds two meetings per year. One very special event is the Annual Indiana College Mathematics Competition, now in its twenty-second year, which is held at the Spring Meeting. See Judi Morrell's article in the Center Section of this issue of FOCUS for further details on this event.

INTERMOUNTAIN The Section had an excellent, fast-paced Spring meeting with almost as many student papers as contributed papers. The strong student participation was encouraged by creating a network where each school has at least one faculty member willing to encourage student participation and by treating each student giving a paper as a guest at the Section's banquet. Lively papers concerning applications of mathematics were

Section-held competitions: pages 9–10
Illinois Section progress: pages 10–11
Ohio Section's smooth structure: p.11
On reaching out to two-year colleges: pages 11–12

presented by James Keener on "The Motion of Chemical Scroll Waves," Mark Salita of Morton Thiokol on "O-Ring Deformation," and James Walker (a student at the University of Utah) on "An Introduction to Fracture." The minicourse "Tilings of the Plane" by Branko Grünbaum was particularly well received.

IOWA The Section notes that the involvement of students has grown from no student papers a few years ago to 9 this year. The Section meets annually with the American Statistics Association and feels that this close cooperation between the two organizations has also been very successful in attracting participation from the research community. Another project that may create additional attendance is the publication in the newsletter of abstracts of the papers to be presented at the meetings. The Section conducted a survey of mathematics clubs active in the Section's institutions and has encouraged students to meet informally with each other and with faculty.

KANSAS The Annual Meeting is always a joint meeting with the Kansas Association of Teachers of Mathematics, a regional NCTM group. This allows for good interaction between the college and public school mathematics communities. The sessions interlock and there is always excellent participation by high school teachers in the Section's programs.

KENTUCKY The Section annually meets with the KYMATYC with a sharing of programs, newsletters, and speakers. The Section has found this kind of cooperative endeavor to be very beneficial to all concerned. This year's meeting was highlighted by a short course on "Statistical Process Control" by Barbara Ashley and Annalisa France in addition to the invited addresses by David Roselle and Gerald Alexanderson. The Section is making a concerted effort to involve both students and high school teachers in the Section's activities.

LOUISIANA–MISSISSIPPI The number of MAA members in the Section is at an all time high; the Section notes with pride that four of its members serve on the MAA Board of Governors. Two panel discussions at the Spring Meeting, "Calculus for a New Century" and "Hand-held Graphic and Symbolic Calculators" were particularly well received and well attended; there a great deal of discussion was generated. Another very interesting panel was "An Earlier Day of the MAA" with R. D. Anderson, Ivan Niven, Paul Rees, and Roy Sheffield as participants. The Section has long supported student papers and participation at its meetings; in addition to the MAA membership provided by National MAA, the Section awards MAA books and a $100 U.S. Savings Bond for superior student papers.

MARYLAND-D.C.-VIRGINIA The Section annually holds two meetings, and this year the Fall Meeting had a focus on calculus and other parts of the undergraduate curriculum. One highlight of the Spring Meeting was a panel on mathematics teacher preparation, a "hot topic" not only in this Section but across the nation. Also included at the Spring Meeting was an NSF sponsored workshop on "Proposal Writing" which was very well attended. The Section held an "Open Forum" at the conclusion of its meeting to allow for a discussion of issues raised along with other topical matters.

METROPOLITAN NEW YORK One of the Section's primary activities is the sponsorship of the Annual Greater Metropolitan New York Mathematics Fair where two hundred or more high school students present research or expository papers to panels of judges and interested observers. Although the organizational details of this project seem overwhelming, the Section has made this one of the premier high school mathematics events in the country. The Annual Meeting this year was held jointly with the SYSMATCY and attracted a wide variety of interesting papers and presentations.

MICHIGAN The Section hosted a joint meeting with MichMATYC; the program featured invited addresses of interest to both groups along with a parallel track of contributed papers of special interest to the two-year faculty. This Section believes in making the public aware of our activities and the importance of mathematics, so it has formed a Mathematics Awareness Week Committee to meet this objective. This Committee has been working actively with institutions and other groups to promote mathematics and to work with radio, television, and the print media. In March, the Section hosted the thirty-first Michigan High School Math Prize Competition.

MISSOURI The Section continued its history of very successful meetings and activities. Twenty-two Section members from 10 universities participated in the high school lectureship program and made 39 visits. The Section is in the process of planning a minicourse for future meetings. One unique feature of the Missouri Annual Meeting is the 5K Run and Walk for those who enjoy the early morning hours; prizes have included books, floppy disks, and Rubik's cubes.

NEBRASKA The Section heard a wide range of papers from expository to the research of Ph.D. candidates. Special sessions were held on curriculum and departmental projects. The Section is working on a history of the Section and is publishing it in its newsletter. For years the Program Chair of the Nebraska Section has hosted a party on Friday evenings; many feel that this has been one of the primary forces that has made the Section meetings so successful.

NEW JERSEY In April of 1988, the Section cooperated with the New Jersey Department of Higher Education and the MATYCNJ to host a special conference on "Mathematics in the First College Year: Current Issues." Later in April, the Annual Meeting was held jointly with MATYCNJ and the discussion continued there. The New Jersey Section should be particularly commended for its success in involving women and faculty from the two-year colleges in its meetings and officer/committee structure; New Jersey has the highest percentage of women attending its meetings of all of the Sections.

NORTH CENTRAL The Section's newsletter, edited by Sandra Keith, is an especially commendable effort containing a great deal of useful and insightful information. Unique features include a list of local colloquium speakers (and their topics) who are willing to travel to other institutions in the Section. Secondly, the newsletter has published a list of textbooks being used at each Section member's institution, along with contact persons if someone wished to discuss or consider these books. The reaction to both of these has been "enthusiastic!"

NORTHEASTERN The Section continues to update the Software Exchange of locally written/generated public domain computer programs of all types. This has been a very popular feature of the annual programs. There was a workshop for mathematics faculty held in Boston with the goal of "The Renewal of Our Teaching" and with an emphasis on content—"to present new ideas that can be used directly and successfully in teaching." A very successful feature of the Fall Meeting was the inclusion of five computer oriented workshops covering topics from ADA and Modula to TeX and calculus.

NORTHERN CALIFORNIA This Section, for several years, has used a format of having only four or five major invited addresses constitute its entire Annual Meeting. This has been successful in drawing good participation from the larger research universities as well as from the smaller teaching institutions. The past year, the Section worked with members from Hawaii to consider the creation of a new section for that locality; we expect that many would love to have the excuse to visit Hawaii to attend an MAA meeting.

OHIO The Section has a record 34 student papers at its Spring Meeting. The directors of the graduate programs at the state universities were provided tables to pass out literature and to talk to prospective graduate students; these same faculty participated in a Swap Session on graduate education. The Summer Short Courses have been very successful with

45 participants last year. Further for several years the Section has offered a very popular series of "microcourses" at the Fall Meeting. This year the Section, with the Ohio Council of Teachers of Mathematics, jointly sponsored a short course for secondary mathematics teachers on "Critical Thinking and Problem Solving Through Geometry and Discrete Mathematics." The Section provided a prize to the student judged to have the most outstanding project at the State Science Day, a project of the Ohio State Academy of Science. For further details on this Section's activities see Andrew Sterrett's and David Ballew's article in the Center Section of this issue of FOCUS.

OKLAHOMA-ARKANSAS This was the Section's 50th Anniversary and, to celebrate, James Choike wrote a History of the Section which was sold at the Annual Meeting for $10 per copy. Proceeds from the sale were used to further vest the N. A. Court Lectureship, an annual distinguished lecture given at the Section Meeting—this year Lyle Mason presented "Going in Circles." The Section's meeting was very successful as is witnessed by the fact that 44 contributed papers were presented.

PACIFIC NORTHWEST The Section is becoming actively involved in studying the current policies and practices of accrediting secondary mathematics teachers in the states and provinces within the Section. The Section meeting had a heavy emphasis on calculus and had papers presented by both the invited speakers and the contributed speakers on this issue. In order to encourage more contact between the many different worlds of mathematics, both SIAM and the AMS were invited to participate in the June Meeting. The Section's newsletter publishes announcements of open colloquia so that faculty from the smaller institutions can attend and hear these speakers.

ROCKY MOUNTAIN The Section hosted its Third Annual Short Course, "Mathematical Modeling" at Fort Lewis College in Durango, Colorado. The Annual Meeting featured a variety of invited speakers, contributed papers, and a well attended student paper session. The Association of Women in Mathematics sponsored a special session on the mathematics of juggling by Phyllis Chinn.

SEAWAY Among the highlights of the Fall Meeting was a talk by Ivan Niven and a special session for high school teachers which attracted a large attendance. At the Spring Meeting, the Gehman Lecturer was W. T. Tutte; furthermore there were several special presentations on the teaching of mathematics, and a workshop, "Adult Learners Ask the Darndest Questions," by Betty Hurley Lawrence. In addition, there was enormous interest in the subject of writing within mathematics classes. The Section is in the process of writing a history to celebrate its 50th Anniversary.

SOUTHEASTERN A new feature of the Section's meeting was the "T. A. Rush." After scheduled activities were completed, representatives from graduate schools in the Section were available to interview students, provide information about assistantships, and answer questions about their programs. Seventeen institutions participated and 42 students attended; as a side effect student presentations rose from 3 last year to 8 this year. All involved felt that the "Rush" was successful and should be continued next year. At the Annual Business Meeting, the Section voted to create a new office of "State Director," one per state in the Section, to coordinate MAA activities within their state.

SOUTHERN CALIFORNIA This year the Fall Meeting was held jointly with the AMS and the Spring Meeting was held jointly with SIAM. The highly successful Sectional minicourse continues; Guillermo Owen presented this year's minicourse at the November meeting. The Spring Meeting featured a Short course by William Lucas. Meeting highlights included a panel discussion on "Calculus Renewal," and special sessions on Mathematics Notes, Classroom Capsules, and Mathematics as a Humanistic Discipline.

SOUTHWESTERN The Section is making a concerted effort to increase minority participation at its meetings and in the Section activities; the Spring Meeting featured a panel discussion on this issue and the comments gave rise to several action items. The Annual Meeting was held jointly with the Arizona Mathematics Consortium. Other meeting highlights included a film session, a breakfast meeting for Department Chairs, several invited addresses and 16 contributed papers. The Section has initiated a newsletter.

TEXAS The Section attempts to deal with issues and matters of concern to all segments of its membership— issues related to mathematics in any way and at any level. Recently, attention has been directed to such diverse topics as the school mathematics curriculum and remedial mathematics for college students as well as technical mathematics. From time to time the Section speaks out for its constituency on issues of concern. For example, this year a resolution concerning the elementary school mathematics curriculum was passed at the Annual Meeting and distributed state wide. The Section notes that it is renowned for its gregarious members who like to get together to discuss issues, resolve problems, or just socialize.

WISCONSIN The Section has fostered an excellent relationship with the Wisconsin Department of Public Instruction by working with them on curriculum guidelines and the amount and kind of mathematics that should be taken at the high school level. The Section has been very involved in diagnostic mathematics testing of junior level high school students. Last, but certainly not least, the Annual Meeting was a celebration of mathematicians doing mathematics. Speakers treated a wide variety of topics, from the theory of PROLOG, to modeling the Antarctic ice sheet, to probabilistic methods in graph theory. Two television news crews attended and gave nontrivial reports on their respective stations.

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The Indiana Section: Where Colleges Compete

Judi Morrell

On April 16, 1988 the 23rd Annual Indiana College Mathematics Competition was held with 19 teams from 13 schools participating. For the past ten years the Indiana Section of the MAA has sponsored this mathematics team competition in conjunction with the Spring Section Meeting. The history of the contest is even older. In 1965, Wabash College in Crawfordsville, Indiana, initiated the Wabash Friendly Mathematics Contest. The Mathematics Department at Wabash invited teams from small colleges in the state to participate and were responsible for arranging for the construction and grading of the test itself. About ten years ago the Section took over the sponsorship of the test and two years ago the competition was opened to teams from any college or university in the Indiana Section. Multiple teams from a single institution are welcome, although only the highest scoring team from each school "counts." Each team pays a $5 registration fee to cover costs. Several schools bring a "rookie" team along with a junior-senior team.

The Section also invites undergraduate student papers for the Spring Meeting and the test is held in the afternoon after the students have presented their papers. A team consists of no more than three students and works together on the problems. There is considerable discussion among the team members regarding strategy. Should each person take one problem, or should they work together on each one? Most teams follow a combined strategy: collaboration on some problems and independent work on others. There are usually 6–10 problems, and the general rule of thumb is that the problems should require cleverness, insight, and problem-solving ability rather than knowledge specific to an elective upper division mathematics course. The institution hosting the meeting is responsible for the construction and grading of the exam. Results and solutions are mailed out within a week of the meeting. (It is a deliberate policy that solutions are not given out as

the students leave— a lot of discussion and learning takes place during the ride home!)

The appeal of the contest has enabled us to attract a fair number of students to our Spring Section Meetings, and in the words of the invitation letter to the second such contest, it has also "stimulated friendship and mathematical interest among members of the various departments and their undergraduate students."

Judi Morrell is an Associate Professor of Mathematics at Butler University in Indianapolis, Indiana.

Illinois–On the Move!

Linda Sons

A significant new chapter of history began for the Illinois Section of the MAA (ISMAA) in April of 1985 as the Section adopted a Board of Directors system of administration. The Section was in need of a structure which could respond to, and participate in, the massive and exciting changes the mathematical community is experiencing. Some visionary members of the Section who were concerned about the weak participation of the membership introduced a Bylaws change which was implemented in 1985-86.

Some 17 members make up the Board of Directors of the ISMAA which includes the Governor, the Past-Chair, the Chair, the Chair-Elect, the Secretary-Treasurer, and 12 Directors at Large. The original Board in the fall of 1985 immediately assumed a spirit of cohesion in making the system work and in carrying out the mission of the Section; there was excitement about possibilities for the Section. The Board would provide continuity for the Section (heretofore largely carried along by the Secretary-Treasurer) and it members would inspire, support, and encourage each other. A meeting scheme of three times a year was set—September, February, and April. The designated Directors along with a local representative for the meeting location formed the Program Committee for the Annual Meeting in April. The remaining 6 Standing Committees (Contests and Awards, Two-Year Colleges, Membership (now Membership/Public Relations), Nominating, Secondary School Lectures, and Distinguished Service Award were chaired by Directors-at-Large. These Directors were then responsible for reporting their committees' activities to the Board at each Board meeting; communication among leaders was enhanced.

The Chair's appointive power of committee members was used to select previously uninvolved or new members of the Section for committee service. A full complement of members brought new life to some standing committees. In addition to the standing committees, the Section has an ad hoc Committee on Teacher Preparation which had done some substantial fact-finding in the State. Further, two new ad hoc committees were proposed and a charge for each drawn up and adopted—one on geometry in high school and college and one on computing in the undergraduate curriculum. More members could be involved in working on important curricular issues in the State.

An attitude of alliance (rather than competition) with other organizations of the mathematical community in the State was assumed. A liaison was appointed to keep the Board aware, so far as possible, of activities of the Illinois Council of Teachers of Mathematics (ICTM) and of the Illinois Mathematics Association of Community Colleges (IMACC), as well as at the State Board of Education level, relative to mathematics. Leaders in these groups were personally invited to the ISMAA annual meeting. Through contact between the ICTM and ISMAA chairs, individuals from ICTM became members of the ad hoc geometry committee. At least one joint session at the ICTM meeting was held, and the ICTM Board and the ISMAA Board shared a luncheon. A member of the State Board of Education was invited to speak at the annual meeting about statewide school reform actions as they related to the study of mathematics.

The three designated Directors were set by the Bylaws to be primarily responsible for the program at the Annual Meeting. The three each serve three years, staggered so that one is new each year and the retiring member serves as program chair for that year. The designation are Director of Private Colleges, Director of Community Colleges, and Director of Public Universities—such roles allow for certain segments of the membership to be assured attention.

However, in 1985–86 special attention was given by the entire Board to the program for the Annual Meeting. Suggestions were made as to how to provide programming to appeal to a *broad* cross section of the membership. In the future "new people" were to be asked to preside at meeting sessions. A short course was to continue, and the membership was to be polled regarding the short course offering. A new session was scheduled for the presentation of papers by undergraduate students, and a new session for Department Heads was scheduled (the Chair sent an individual letter to each inviting their participation). MAA books would be displayed, and in the future publishers would by offered the opportunity to display books. An informal gathering was planned for the remainder of the evening, after the banquet, during which members could discuss items of mutual interest and get to know one another. An evaluation form for the meeting, which sought member suggestions, was devised.

Communication with the wider membership was felt to be one of the keys to broader member involvement. Through a newsletter more than the leaders would be aware of the work of the committees and could participate in the dialogue that work entailed. A wider group than those who attended the Annual Business Meeting would receive reports of committees, such as the reports of the Committee on Teacher Preparation. Members would become aware that the ISMAA was doing something and would gain advance awareness of the Annual Meeting program too. So a commitment was made to have a newsletter with at least two issues per year sent to the membership in addition to the Annual Meeting announcement. New members were to receive attention by having their names announced in the newsletter (and by being awarded free registration at the Annual Meeting that year). A newsletter editor was sought, and responsibility for the newsletter was assigned to the Membership Committee.

It was also felt that the Section's work included seeking greater public awareness for the contributions of mathematics to our society. So in April of 1986 the Membership Committee became the Membership/Public Relations Committee with the additional charge of the development of a program for public awareness.

The Section was on shaky ground financially, so plans were made to appeal to the national organization for funds to implement the newsletter. An ad hoc Finance Committee was asked to set a budget for the year ahead. The Board agreed that the budget should be "program driven" and began discussing future programs for ISMAA; Mathematics Awareness Week, institutional and industrial support, student chapters, summer short courses, and the short supply of women and minority group individuals among mathematicians became agenda items. Later an ad hoc committee on long-range planning was charged to suggest directions for the Section's work along with a projection of how the work would be financed.

At the time of the meeting in April of 1988 it was clear that the ISMAA was on the move. The geometry committee's report was to be distributed widely—the committee had consisted almost entirely of people not heavily involved previously in MAA efforts. The report was being sought by high school mathematics department heads to use in discussion with their superiors. The ISMAA had supported IMACC in their adoption of a position on college preparatory mathematics. A session at the ICTM meeting had been devoted to the work of the geometry committee. The fifth issue of the newsletter, "Greater

Than Zero" had appeared. Student papers continued to be part of the annual meeting, and a room was set aside for book publishers who happily donated coffee and donuts, too. A session on classroom notes was introduced at the meeting, and a statement concerning public funding of higher education as it related to mathematics was adopted and sent to legislative leaders in the State. A number of new faces were seen, and others had written the editor regarding articles in the newsletter. Many new ideas and interests were being discussed—in fact, so many that a need was expressed to prioritize the list! An attitude of expectancy and even enthusiasm prevailed. Evidence was strong that the ISMAA was becoming a major influence for the improvement of education in the mathematical sciences at the collegiate level in the State. Full speed ahead!

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Ohio Has a Better Idea!

Andrew Sterrett and David Ballew

CONTTAC, CONCUR, COB, CONSACT, CONSTUM, and CONCON are not products from a pharmacist's shelf; they are the committees that have been instrumental in the success of the Ohio MAA Section. Many academics feel that committees are little more than a necessary evil, usually accomplishing little of merit. The story in the Ohio Section is different, and through the committee structure, the Section has involved over 50 people each year in productive activities which strengthen the Section's activities. The committee structure is more than a list of cute names, it is a coordinated effort and an integral part of the leadership of the Section.

In 1964, Charles Capel of Miami University appointed the first 3 of these committees (ad-hoc at the time): CONCUR (Committee on Curriculum), CONTTAC (Committee on Teacher Training and Certification), and COB (Committee on Bylaws).

CONCUR's first work gave rise to a resolution that, beginning in September 1966, no college credit be given in four-year degree programs for courses in pre-calculus and trigonometry, and that, after September 1968, these courses should no longer be given in four-year colleges even on a non-credit basis. Although the recommendation could only be advisory, many institutions did conform, at least in spirit, and ofter to the letter, until a deterioration in mathematics preparation of many college students forced the abandonment of this noble effort. The Committee didn't give up its efforts and has continued its activities with recent concerns with how discrete mathematics is embedded in the curriculum and with the teaching of calculus.

CONTTAC has maintained its communication with the Ohio State Board of Education and has frequently testified on college curriculum requirements for mathematics teacher certification. This past summer the Section, through CONTTAC, has worked with the Ohio Council of Teachers of Mathematics and the Ohio State Board of Regents to offer a Summer Short course for high school teachers—"Problem Solving through Geometry and Discrete Mathematics" by Janet Roll and James Smith.

COB has the seemingly dreary chore of keeping the Bylaws up-to-date and reflecting the actual operation of the Section. One of their most significant actions has been the establishment of three additional standing committees: CONSACT (Committee on Section Activities), CONSTUM (Committee on Student Members), and CONCON (Committee on Contests).

CONSACT's primary activity has been the organization and operation of a number of very successful Short Courses for college faculty members. In recent years topics have included the "History of Calculus" and a "New Unified Approach to Linear Algebra." "The Use of Computer Algebra Systems in Teaching Calculus" was given in the summer of 1988.

CONSTUM coordinates a student paper session for the Spring Meeting; in 1987 over 100 students attended with 31 papers, and 1988 saw 55 students attend with 34 student papers. The Committee arranges for sleeping spaces in the dorms for students and plans a social activity for them. In 1987, representatives from Ohio graduate schools began to meet with interested students to discuss possible admission and study.

CONCON's very important activities can be summed in a few short words that do not truly reflect the enormous work; they administer the AHSME and AJSME. Ohio has ranked among the top of the states participating in these critical activities.

Each summer, the Section leadership conducts a Summer Planning Meeting over two days where the officers and the committee leaders can discuss and coordinate their efforts; committees can and do meet at the same time whenever necessary. This 32-hour meeting is crammed with formal and informal sessions ranging from brainstorming to the writing of resolutions and recommendations. Those who have attended have commented that it is exhausting but important to the total efforts of the Section.

What are the advantages of such a list of formal standing committees? First and perhaps most important is the close involvement of 50 or more section members each year in the leadership of the Section. All too often, new members feel that it is difficult to cross the fence to the inner circle of any section's leadership and get involved. Ohio has solved this problem by actively recruiting new members and putting them in responsible positions.

A second advantage is that each of the committees has specific duties and responsibilities. The Section has been fortunate that these committees have addressed important issues, have been innovative, and have recommended specific actions that address problems of interest of the Section's members.

Finally, the Section's leadership is democratically distributed among many who feel that they are really involved in both the Section's present operation and its future direction. New members are given the chance to provide leadership and new ideas. The Section has benefited and is stronger for it.

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Two–year colleges account for almost one–third of all undergraduate mathematics enrollments.
Only 22% of full–time two–year college mathematics teachers are MAA members.

The Elusive Two–Year College Teacher

Ann E. Watkins

In the years 1969 to 1971, after decades of effort to encourage the participation of two-year college teachers, the MAA got serious. The Association established a Committee on Two-Year Colleges, placed a two-year college teacher on the program committee for each national meeting, took over the publication of THE TWO-YEAR COLLEGE MATHEMATICS JOURNAL (now THE COLLEGE MATHEMATICS JOURNAL), designated the Second Vice-President as the two-year college representative, directed that suitable members from two-year colleges be appointed to committees, and surveyed the sections to find out what they had done to increase the participation of two-year college teachers. Today, as a result of this intense effort, two-year college teachers are well-represented at the national level. Still, in some sections, virtually no two-year college teachers participate.

Henry Alder's 1971 survey of section efforts produced suggestions which have not lost their timeliness:

- Guarantee two-year college representation on the Executive Committee by establishing a vice president for two-year colleges or by rotating the leadership of the section between, for example, a member from a large university, a public college, a private college, industry, and a two-year college.
- Establish a Committee on Two-Year Colleges.
- Hold a meeting at a two-year college.
- Be certain that every program has something to interest two-year college teachers. Have a two-year college teacher on the program committee.
- Encourage four-year colleges and two-year colleges to collaborate on such issues as curriculum and transferability of courses. Encourage four-year college teachers to visit community colleges.
- Include two-year college teachers on lists of visiting lecturers.

(A detailed description of this survey can be found in Joseph Hashisaki's "The MAA and the Mathematics Teacher in the Two-Year College" in THE TWO–YEAR COLLEGE MATHEMATICS JOURNAL, 2, Fall 1971, 63–73.)

Implementing suggestions such as these is clearly the right thing for sections to do to ensure that two-year college teachers are included. (Of course, sections can also profitably substitute "industry" or "research university" for "two-year college.") But the relationship between participation of two-year college teachers and specific efforts on the part of the section to attract them is murky. For example, the Illinois Section gets only moderate attendance of two-year college teachers at meetings in spite of many innovative efforts:

- An active Two-Year College Committee chaired by Carole Bauer worked with the State of Illinois to develop a state curriculum guide and a placement test.
- MAA members from two-year colleges who haven't previously attended meetings are invited to preside at a talk.
- One of the invited speakers is usually from a two-year college.
- An attempt this past year to encourage participation through contributed papers failed when no two-year college teachers responded to a call for papers.
- Neale Fadden, from a community college, was chair of the section last year.
- The Board of Directors always includes at least one two-year college representative.
- A publishers' book display is held in conjunction with the meeting.

In contrast, the Northern California Section does not generally distinguish between two-year and four-year college members, although it recently established a system by which the chair rotates through various types of institutions, including two-year colleges. It has relatively high level talks and only one per hour, no contributed paper sessions, no speakers from two-year colleges, and few meetings at two-year colleges. Yet, many two-year college teachers attend.

The Maryland-D.C.-Virginia Section does all of the "right" things and does get participation from two-year college teachers. In fact, about one-third of the people attending meetings are from two-year colleges. The Chair, Elizabeth Teles, and the Vice-Chair for Membership and Newsletter Chair, Mary Kay Abbey, are from two-year colleges. The section met last fall at Northern Virginia Community College and the list of speakers included community college teachers. Parallel sessions guarantee a talk of interest each hour for teachers at all levels. The next spring meeting of the section will be a joint meeting with AMATYC.

So what does account for the participation of two-year college teachers in MAA sections? Why, after two decades of effort have some sections been unsuccessful in attracting two-year college faculty? The answer may be that participation depends more on whether or not two-year college teachers feel that they are a welcome part of the college and university community than on whether the MAA section does specific things to attract them. For example, in Wisconsin, the thirteen academic two-year colleges in the state are part of the University of Wisconsin system. They are treated with respect by that system and professional activity is expected for promotion and tenure. Two-year college teachers are quite active in the Wisconsin Section; in fact, last year's Chair, Harold Ness, and the current governor, Gary Britton, are from two-year colleges. Two-year college teachers contribute papers and volunteer their campuses for meetings. Lawrence Trivieri and Warren Page said that the New York sections have a similar situation.

Four-year colleges in other sections, which shall remain nameless, are said to "ignore us and make us feel like we don't belong." Even if there is no formal affiliation as in Wisconsin and New York, two-year college teachers feel like they belong when a cordial relationship exists between two-year colleges and four-year colleges. This relationship has little to do with the MAA section. Where the four-year colleges have non-threatening seminars or courses that include two-year college teachers, where two-year college teachers are invited to join curriculum and articulation committees, where former students now teaching at two-year colleges are invited back to campus occasionally, where two-year college teaching is respected, that's where two-year college teachers participate. According to Wade Ellis, the warm working relationship that universities have built with surrounding community colleges largely accounts for two-year college participation in the Northern California Section.

Ernie Ross reports that there are no "class distinctions" in Florida either. The annual meetings of the Florida Section attract 180-200 people, about one-third of whom are from two-year colleges. Even more two-year college teachers attend one of the five regional meetings. Articulation issues are always an important part of these meetings. Two-year colleges and four-year colleges have a common course numbering system, which makes it easy for people from different colleges to talk about curriculum.

The two-year college teachers I talked to all came up with the same bottom line: "Two-year college teachers must feel comfortable attending MAA meetings." Feeling welcome as a legitimate partner in higher education is one aspect of being comfortable. The other aspect is not being snowed by the talks. Sections interested in attracting two-year college teachers should begin by finding speakers who understand mathematical levels and thus can give appropriate expository talks and minicourses. Many two-year college teachers attend MAA meetings to keep their mathematical knowledge fresh. Although 13% of full-time, two-year college teachers have doctorates and all but 5% have a least a master's degree (UNDERGRADUATE PROGRAMS IN THE MATHEMATICAL AND COMPUTER SCIENCES: The 1985-1986 Survey, Donald J. Albers, Richard D. Anderson, and Donald O. Loftsgaarden, MAA Notes Number 7, 1987), they teach only lower division and remedial classes and often begin to feel stagnant mathematically. Consequently, a large percentage of the participants in the minicourses at the national meeting are from two-year colleges.

In short, sections that wish to increase the participation of their two-year college teachers should acknowledge one request—two-year college teachers do not want to be the Rodney Dangerfields of the mathematical community.

Ann E. Watkins is an Associate Professor at Los Angeles Pierce College in Woodland Hills, California. She is co-Editor-Elect of the COLLEGE MATHEMATICS JOURNAL and she has just completed a term as Second Vice-President of the MAA.

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The deadline for submission in the November-December 1988 issue is September 16, 1988.

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1 A full-time position in Mathematics at the Assistant Professor level. Ph.D. required (Algebra, Differential Equations, Complex Variables, Geometry). Teaching load: 12 hrs/sem. Strong interest in teaching undergraduates and scholarly activity expected.

2 A full-time position at the Assistant Professor level. Ph.D. required. Teaching load 6 hrs/sem. Additional Responsibility: Director of the Mathematics Center. Some scholarly activity expected and experience in diagnosing and correcting learning deficiencies in mathematics.

3 A full-time position in Mathematics and Computer Science at the Assistant Professor level. Ph.D. (Mathematics or Computer Science) required. Teaching load: 3 hrs in Mathematics and 6 hrs in Computer Science per semester. Strong interest in teaching undergraduates and scholarly activity expected.

Send letter of application, resume and three letters of reference (at least one should address teaching) to Dr. Francisco J. Navarro.

DEPARTMENT OF MATHEMATICS

University of Alberta

Applications are invited for tenure-track positions, subject to budgetary approval, in Approximation Theory (File AP-1), Numerical Optimization or Partial Differential Equations (File NP-1), in Number Theory (File NT-1), or closely related areas and Algebraic or Differential Topology (File AT-1) at the Assistant Professor level, beginning July 1, 1989. Requirements are a Ph.D. and proven ability or demonstrated potential for research and teaching. Current salary range is from $33,144 (Canadian) per annum depending upon qualifications. Send vitae and arrange for three letters of reference to be sent to: Professor L. H. Erbe, Chairman, Department of Mathematics, University of Alberta, Edmonton, Canada T6G 2G1. In accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. Closing date for applications is October 31, 1988. Please quote file numbers when responding to this advertisement. The University of Alberta is committed to the principal of equity in employment.

FACULTY APPOINTMENT

Department of Mathematical Sciences
The Johns Hopkins University

Applications are invited for a senior appointment in the area

- Numerical Analysis and Optimization

for Fall 1989. Junior applicants will also receive consideration. Selection will be based on demonstration of excellence in research, teaching, and innovative application. Applicants are asked to furnish vita together with a letter describing professional interests and aspirations, and to arrange for three letters of recommendation to be sent, by October 15, 1988, to:

Professor Jong-Shi Pang
Department of Mathematical Sciences
The Johns Hopkins University
Baltimore, Maryland 21218

The Johns Hopkins University is an Equal Opportunity Employer/Affirmative Action Employer. Employment is offered without discrimination on the basis of race, color, religion, sex, or national origin.

CANISIUS COLLEGE

Department of Mathematics

A tenure-track position as Assistant Professor in mathematics is available beginning in late August 1989. Applicants must have a Ph.D. in mathematics and a strong commitment to quality teaching. The teaching load is twelve hours per semester. Salary and fringe benefits are competitive, commensurate with credentials and experience.

Applicants should send resume, transcripts, and three letters of recommendation to Dr. Richard H. Escobales, Chairman, Department of Mathematics, Canisius College, Buffalo, New York 14208. AA/EOE.

TRINITY UNIVERSITY

San Antonio, Texas
Assistant/Associate
Professor of Mathematics

Trinity University invites applications and nominations for a tenure-track position in mathematics, appointment beginning August 1989. The appointment will be made at the rank of Assistant Professor or Associate Professor, depending on qualifications. Responsibilities include teaching nine credit hours per semester, continuing scholarly activity, assisting in curriculum development as appropriate to the needs of the department and the university, advising, and committee service.

Minimum qualifications are the Ph.D. in Mathematics or Applied Mathematics with excellence in and strong commitment to teaching. Preference given to candidates with teaching and research interests in one or more of the following areas: applied mathematics, numerical analysis, classical analysis, differential equations.

Founded in 1869, Trinity University occupies a modern campus overlooking the San Antonio skyline. Purposely small and selective, with about 2700 students, Trinity stresses a high quality, undergraduate liberal arts and sciences program. San Antonio is a city of approximately 850,000 people situated in a metropolitan area of 1.2 million.

Closing date for application is January 27, 1989. Send vita, transcripts, and three letters of reference to:

Dr. Donald F. Bailey, Chairman
Department of Mathematics
Trinity University
715 Stadium Drive
San Antonio, Texas 78284

Trinity University is an equal opportunity affirmative action employer.

GROVE CITY COLLEGE

Position in Mathematics

Grove City College, an independent, Christian college of liberal arts and sciences, affiliated with the Presbyterian Church (U.S.A.), seeks a Ph.D. in mathematics for the fall of 1989. ABD's are invited to apply. Rank and salary are open. The college maintains a strong evangelical Christian stance. This is a teaching position; scholarly activity of genuine interest to the teacher (not publication for publication's sake) is encouraged. Calculus and upper level teaching assignments . Good locale, excellent facilities, top-rated students, and Christian environment. Send vitae to Dr. Jerry H. Combee, Vice-President for Academic Affairs, Grove City College, Grove City, PA 16127. Grove City College is an equal opportunity employer.

PITZER COLLEGE

1050 North Mills Avenue
Claremont, CA 91711-6110

Tenure–track, preferably Assistant Professor position in Mathematics, beginning 9/89 (or possibly earlier). Pitzer, one of the Claremont Colleges, is a liberal–arts college with a social science emphasis. Responsibilities: teaching at level of calculus and pre–calculus and curriculum development. Opportunity to teach one course for Claremont Graduate School and to participate in mathematical community in Claremont. Required: Ph.D., excellence in teaching, experience with courses for non–majors, research potential and performance, breadth of mathematical vision. Preference to applications received by 12/01/88. Send curriculum vitae and three letters of reference to: Alfred H. Bloom, Dean of Faculty. AA/EOE.

DEPARTMENT HEAD

Mathematics and Statistics
Louisiana Tech University

Louisiana Tech University invites applications for Head, Department of Mathematics and Statistics. The Departments of Chemistry, Mathematics and Statistics, and Physics make up the School of Science within the College of Arts and Sciences. The Department Head has responsibility for all facets of departmental activity, which include curriculum development, budgeting, recruiting, scheduling, and faculty evaluation. As the Department's chief administrative officer, he/she will report to the Dean of the College through the Director of the School. The Department is comprised of approximately twenty-five full-time faculty members. Salary is commensurate with qualifications. The position will be available on/after December 1, 1988.

Applicants must hold a Ph.D. in Mathematics or Statistics, have an established record of research and scholarly activity, and be able to provide strong academic leadership.

Please submit application, resume, and three letters of reference by November, 1988 to:

Dean
College of Arts and Sciences
Louisiana Tech University
Ruston, LA 71271

An Affirmative Action/Equal Opportunity Employer

FACULTY POSITION
Mathematics

Mesa State College announces the availability of three tenure-track positions in mathematics beginning late August, 1989. Specialization in statistics is wanted for one of them. Required are a Ph.D. and strong commitment to teaching as well as interest in professional achievement beyond teaching. Rank commensurate with qualifications. Send resume with three references to William Putnam, Dean, School of Natural Sciences and Mathematics, Mesa State College, Grand Junction, Colorado, 81502. To assure consideration, applications should be received by October 17, 1988. Mesa State College is an AA/EOE employer.

MATHEMATICS INSTRUCTOR

Lee College is accepting applications for instructors in mathematics for the spring or fall semester 1989. (These are full-time, nine-month positions.) The positions require a Master's degree with 18 graduate hours in mathematics. The successful candidate will possess the ability to teach a wide range of courses from remedial through differential equations. Qualified candidates may apply by submitting a letter of application, resume, college transcripts, and three professional references to: Personnel Office, Lee College, 511 South Whiting Street, Baytown, Texas 77520-4703. EOE/AA MF.

INDIANA EAST UNIVERSITY
Math Education/Computer Education

Applications are invited for a full-time (10 months) tenure-track position in math education/computer education available in January, 1989. Applicants should have good communication skills, a strong mathematics preparation, and an interest in undergraduate teaching. Position requires teaching math content courses to elementary majors, secondary math methods, and computer education courses. Qualifications: Doctorate and public school experience or equivalent. Rank and salary commensurate with experience. Women and minorities are encouraged to apply. Review of applications to begin immediately. Send letter of application, vita, and three current letters of reference to: Dr. Carol S. Browne, Education Search Committee, Indiana University East, 2325 Chester Blvd., Richmond, IN 47374.

Equal Opportunity/Affirmative Action Employer

TENNESSEE TECHNOLOGICAL UNIVERSITY
Department of Mathematics
Cookeville, Tennessee 38505

Applications are invited for a tenure-track position in Statistics at the rank of Assistant Professor, available 1 January 1989. Ph.D. in Statistics, or equivalent, experience in both Applied and Mathematical Statistics, evidence of excellent teaching ability at all levels, and strong interest in research are required. Duties include teaching undergraduate and graduate courses, and directing graduate students, consulting and research activities, and helping develop Statistics courses for science and engineering students. Position is open until filled. Send transcript and curriculum vitae, and have three letters of recommendation sent, as soon an possible, to: Chairman, Search Committee, Department of Mathematics, Box 5054, TTU, Cookeville, TN 38505.

DEPARTMENT OF MATHEMATICAL SCIENCES
University of Montana
Missoula, Montana 59812

The Department of Mathematical Sciences at the University of Montana has an opening for a tenure-track Assistant/Associate Professorship beginning Fall 1989. Area needed is mathematics education. A doctorate with a strong background in mathematics is required. Teaching and research experience (or potential) are necessary. The department offers BA, MA, and Ph.D. degrees in mathematics. Inquiries or applications (including resume, graduate transcript and 3 letters of recommendation) should be sent to: Professor William Derrick, Chair, Department of Mathematical Sciences, University of Montana, Missoula, MT 59812. Phone: (406) 243-5311. Applications will be reviewed beginning October 1, 1988. AA/EOE.

DEAN
College of Natural Sciences and Mathematics
Indiana University of Pennsylvania

The College of Natural Sciences and Mathematics has approximately 1500 undergraduate students and 170 faculty members and is organized into the departments of Biology, Chemistry, Computer Science, Geoscience, Mathematics, Physics, and Psychology. The Dean reports to the Vice President for Academic Affairs and Provost and administers the College including the allocation of budgets and personnel. Candidates should have an earned doctorate in a field related to one of the disciplines offered by the College; proven leadership ability; administrative experience working with faculty administrators, staff, graduate and undergraduate students. Starting date July 1, 1989. Nominations, applications with resume and letter stating interest in the position and personal qualifications, along with a list of three references with addresses and telephone numbers should be sent to Dr. Melvin R. Woodard, Chairman, Search Committee—Dean, Natural Sciences and Mathematics, 354 Sutton Hall, IUP, Indiana, PA 15705. Initial screening begins October 15, 1988 and applications will be accepted until the position is filled.

IUP is an Affirmative Action/Equal Opportunity employer.

Colby College
Mathematics Department
Waterville, Maine 04901

Carter Professor of Mathematics and Chair

Colby invites nominations and applications for the Carter Professor of Mathematics and Chair of the Mathematics Department, effective September 1, 1989. Ph.D. in mathematical sciences required. Desirable qualifications include a distinguished record as teacher and scholar; demonstrated departmental and collegial leadership, including the ability to nurture faculty development and research programs; commitment to liberal arts and undergraduate math education.

Colby is a highly selective college of 1700 students and 165 faculty. Its Mathematics Department, within which are taught computer science and statistics courses, has 9 FTEs. Colby encourages applications from women and minorities.

Send applications (letter of application and resume) and nominations to: H.T. Hayslett, Jr., Chair, Mathematics Department, by December 1, 1988.

FOCUS

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EXECUTIVE DIRECTOR

The Mathematical Association of America

The Mathematical Association of America seeks an Executive Director to succeed Alfred B. Willcox on his retirement in September 1990 after twenty-two years of service. (An interim plan will be considered for someone prepared to begin earlier.) The Association, with 26,000 members, is dedicated to the advancement of mathematics, particularly at the collegiate level. Its activities include national and regional meetings, publication of journals and books, visiting lecturer programs, and mathematical competitions for high school and college students. In addition, the Association (in cooperation with other mathematical organizations) is active in publicizing and explaining to the public and the government the importance of mathematics in meeting the needs of the country.

The Executive Director is the Chief Executive Officer of the Association, working under the immediate direction of the Executive and Finance Committees of the Board of Governors, and assisted by associate directors. The Executive Director attends meetings of these committees and of the Board.

The Executive Director has ultimate responsibility for all programmatic and administrative activities of the Association, including supervision of the headquarters staff of twenty-five; serves as the staff officer in charge of development; and, along with the elected officers, represents the Association in professional, governmental, and public affairs as an advocate in behalf of collegiate mathematics, as a fund raiser, and as a liaison with other organizations.

Candidates who hold a Ph.D. in the mathematical sciences and have substantial experience as professional mathematicians and educators are encouraged to apply, particularly if they also have administrative and managerial experience equivalent to that of department chair or higher, experience in fund raising and dealing with foundations, and a history of activity in the Association. Helpful attributes would be some familiarity with publishing and with the use of computers in publishing as well as data processing.

The Executive Director is based at the headquarters of the Association, a historic townhouse complex in downtown Washington. The appointment is for an indefinitely renewable five-year term. Candidates should have in mind a (nonbinding) commitment of at least two terms. The salary will be competitive, and fringe benefits are liberal.

Send applications (with vitae and names of three references) and nominations to:

Professor Deborah Tepper Haimo, Chair
Executive Director Search Committee
Department of Mathematics and Computer Science
University of Missouri—St. Louis
St. Louis, MO 63121

The Committee will begin to review applications on December 15, 1988.

The Mathematical Association of America is an Affirmative Action, Equal-Opportunity Employer.

MAA SEEKS NEW EXECUTIVE DIRECTOR

Calendar

National MAA Meetings

January 11–14, 1989 72nd Annual Meeting, Phoenix, Arizona (Board of Governors, January 10, 1989)
January 24–27, 1990 73rd Annual Meeting, Louisville, Kentucky (Board of Governors, January 23, 1990)

Sectional MAA Meetings

Eastern Pennsylvania and Delaware Pennsylvania State at its Ogontz Campus, Abington, Pennsylvania, November 19, 1989
Florida University of Florida, Gainesville, Florida, March, 1989
Illinois Western Illinois University, Macomb, Illinois, April 28–29, 1989
Intermountain Brigham Young Univ., Provo, Utah, April 1989
Iowa Coe College, Cedar Rapids, April 7–8, 1989.
Kansas Hutchinson Community College, Hutchinson, Kansas, April 21–22, 1989.
Kentucky Pennyrile Forest State Park, Dawson Springs, Kentucky, April 7–8, 1989
Louisiana–Mississippi Mississippi State University, Mississippi State, MS, February 24–25, 1989 (To be held in Biloxi, MS)
Maryland–DC–Virginia American University, Washington, D.C., November 11–12, 1988
Michigan Hope College, Holland, Michigan, May 12–13, 1989
Missouri University of Missouri–Columbia, Columbia, Missouri, April 7–8, 1989
Nebraska Doane College, Crete, Nebraska, April 14–15, 1989
New Jersey St. Peter's College, Jersey City, New Jersey, Spring 1989
North Central Concordia College, Moorhead, MN, October, 1988; Mankato State University, Mankato, MN, April, 1989
Northeastern Rhode Island College, Providence, Rhode Island, November 18–19, 1988
Ohio Wittenberg University, Springfield, Ohio, October 21–22, 1988; Ohio State University, Columbus, Ohio, Spring 1989
Oklahoma–Arkansas Central State University, Edmond, Oklahoma, March 31– April 1, 1989
Pacific Northwest Gonzaga University, Spokane, Washington, June 15–17, 1989
Rocky Mountain Fort Lewis College, Durango, Colorado, 1989
Seaway Syracuse University, Syracuse, New York, November 11–12, 1988
Southeastern University of Tennessee, Knoxville, Tennessee, April 7–8, 1989
Southern California Claremont McKenna College, Claremont, California, November 12–13, 1988 (joint meeting with AMS)
Southwestern New Mexico Western University, Silver City, New Mexico, Spring, 1989
Wisconsin University of Wisconsin–Parkside, Kenosha, Wisconsin, April 21–22, 1989

Other Meetings

September 29-30, 1988 The Center for Applied Linguistics (CAL), Washington, D.C. presents a conference on "Improving Articulation between Language Arts Classes and Science Classes." This conference represents one of several approaches by which the CAL hopes to build a network through which language educators can become integrally involved in the national task of improving mathematics and science instruction for underrepresented minorities. For further information, contact: Dr. George Spanos, CAL/Carnegie Project Director, Center for Applied Linguistics, 1118 22nd Street, N.W., Washington, D.C. 20037; (202) 429-9292.
September 30–October 1, 1988 Annual Mathematics and Statistics Conference, Miami University, Oxford, Ohio 45046. Theme: "Mathematical Recreations." Featured speakers: Richard Guy, Persi Diaconis, and Doris Schattschneider. Contributed paper sessions aimed at high school teachers, college students, and professors. For further information, contact Joe Kennedy at Miami University. The Ohio Delta Chapter of Pi Mu Epsilon Annual Student Conference, Miami University, Oxford, Ohio. Undergraduate and graduate student papers are invited. Send abstracts by September 22, 1988 to Professor Milton Cox at Miami University.
October 14–15, 1988 Annual Department Chairs Colloquium, Washington Marriott Hotel, Washington, D.C. Sessions on "Computers in Mathematical Sciences Research and Training" will include presentations and discussions on the interplay between mathematical sciences research and computational methods. For further information, contact: Board on Mathematical Sciences, National Research Council, 2101 Constitution Avenue, N.W., Room NAS 312, Washington, D.C. 20418; (202) 334–2421.
October 19–21 Conference on Iterative Methods for Large Linear Systems, the University of Texas at Austin, Austin, Texas 78713–8510. For further information, contact: Center for Numerical Analysis, RLM Building 13.150 at the University of Texas; (512) 471–1242; Arpanet: kincaid @sally.utexas.edu.
October 27–28 Developmental Education Conference, Columbus, Ohio. To cover mathematics, writing, study skills, tutoring, and learning centers. For further information, contact: Jane Sieberth, Franklin University, Columbus, Ohio 43215; (614) 224–6237.
October 27–30 AMATYC Annual Convention, Palliser Hotel, Calgary, Alberta, Canada. For further information, contact either Convention Co–Chair: Steven Terry, Ricks College, Rexburg, Indiana, 83440; (208) 356–1406; or Shao Mah, Red Deer College, Red Deer, Alberta, Canada T4N 5H5; (403) 342–3300.
November 4-5, 1988 Third Annual Pi Mu Epsilon Regional Conference, St. Norbert College, DePere, Wisconsin 54115-2099. The invited speaker, Phil Straffin of Beloit College, will present: "Comparing Voting Methods: The Axiomatic Approach" and "The Geometry of Voting: Spatial Models of Voting Power and Voting Outcomes." For further information, contact Rick Poss at St. Norbert College; (414) 337-3198.

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