MAA Strategic Plan
January 25, 1994

Introduction

For nearly a decade mathematics and mathematics education have been in the national spotlight, the subject of intense interest by professionals, policy makers, and the public. As the primary professional organization for collegiate mathematics in the United States, the Mathematical Association of America (MAA) has been in the center of these national discussions about renewal of the mathematical sciences and improvement in collegiate mathematics education and teacher education. This Strategic Plan is intended to help focus the work of the MAA for the next five years in effective support of these national needs.

Above all else, the MAA is an association rooted in the essence and power of mathematics and devoted to education and exposition in the mathematical sciences. Everything that the Association undertakes is intended to emphasize the fundamental nature of mathematics, its intrinsic beauty, its strategic importance in a wide variety of applications, and the importance of mathematics education for all.

The MAA aims to be *the* recognized organization concerned with excellence in college mathematics, the pre-eminent publisher of mathematical exposition, and an effective advocate for teaching excellence. The Association seeks widespread adoption of MAA curriculum recommendations and departmental guidelines; increased diversity among its members and leadership; and enhanced professionalism and pride among undergraduate mathematics faculty. Although this Strategic Plan is written by and for the MAA, much of its agenda is intended to be carried out within a broad coalition of other organizations that share our vision and priorities.

The present Strategic Plan builds on and extends the long-range planning report "The Fourth Quarter-Century" adopted by the MAA Board of Governors in January 1987. Much has occurred since 1987 to affect the environment within which the MAA operates including several major reports (e.g., *Everybody Counts, Curriculum and Evaluation Standards for School Mathematics, Professional Standards for Teaching Mathematics, A Call for Change, Renewing U.S. Mathematics: A Plan for the 1990s,* and *Moving Beyond Myths: Revitalizing Undergraduate Mathematics*), diverse political initiatives in support of national goals for education, and a crescendo of calls for systemic change in the way mathematics and science education is carried out. These reports and initiatives reflect the growing sense of urgency for significant improvement in the way students learn mathematics at all levels. This urgency has an impact on everything that the MAA does, since without effective college mathematics, there can be no permanent improvement in mathematics education at any level.

Mission and Goals

The original 1915 charter of the MAA declared that the purpose of the Association is to "assist in promoting the interests of mathematics in America, especially in the collegiate field." Three-quarters of a century later, that charter still shapes the mission of this organization:

Mission: To advance the mathematical sciences, especially at the collegiate level.

The traditions and mission of the MAA lead to four major program goals towards which most activities of the Association are aimed: education, professional development, students, and public policy. These goals express the mission of the Association in particular terms:

A. **Education.** Stimulate active learning, promote effective teaching, and encourage appropriate assessment in the mathematical sciences.

B. **Professional Development.** Foster scholarship, professional development, and a spirit of association among mathematical scientists.

C. **Students.** Enhance the interests, talents, and achievements of all individuals in the mathematical sciences, especially of members of underrepresented groups.

D. **Public Policy.** Influence institutional and public policy through effective advocacy for the importance, uses, and needs of the mathematical sciences.

In addition to program goals that directly support the Association's mission, other goals are necessary for effective and efficient operation of the MAA. These operational goals enable the MAA to remain strong, to work effectively towards its mission, and to carry out its program goals:

I. **Sections.** Strengthen local opportunities of MAA members for leadership and influence.

II. **Publications.** Advance quality exposition of mathematics for students, faculty, professionals, and the public.

III. **Governance.** Enhance effectiveness of MAA governance.

IV. **Membership.** Expand MAA membership to include those who have a professional stake in college-level mathematics.

V. **Finance.** Enhance financial support for current and new MAA programs.

Context

The Mathematical Association of America is the largest professional society of college and university mathematics teachers in the world. Today MAA's membership of over 30,000 includes two- and four-year college and university faculty, high school teachers, government and corporate workers, graduate school faculty, research mathematicians, and graduate and undergraduate students. The 29 Sections of the MAA provide a regional base and inspire strong loyalty on the part of their members, a loyalty that extends to the national organization.

Through its extensive program of publications and meetings, the Association makes

available to a wide audience information on developments in mathematics and mathematics education. The Association is actively concerned with teacher education and encouragement of students--especially those from underrepresented groups--to continue their study of mathematics. Through its many committees, the Association provides models for collegiate curricula, guidance to teachers and institutions, and standards for collegiate programs in the mathematical sciences and for the mathematical education of teachers.

Strengths

In planning for the future, the Association needs to look not only at how its goals relate to the context in which it operates, but also at its present strengths and weaknesses. The MAA's charter emphasis on collegiate mathematics--the centerpiece of education for all future scientific personnel--is an asset of enormous value: it provides both a broad clientele and a compelling justification for our work. The Association's focus on college-level mathematics is virtually unique in the world.

Another fundamental MAA strength derives not from its charter but from tradition spanning its entire history: emphasis on quality exposition. Indeed, the primary reason that the Association came into being was to preserve and nurture the *American Mathematical Monthly*. Now the MAA sponsors three journals, newsletters, several book series, a student magazine, and hundreds of expository lectures in national and sectional meetings each year.

Additional strengths include an experienced and efficient staff at the Headquarters in Washington, DC; an active and dedicated membership; 29 Sections providing opportunities for grass roots involvement and regional leadership; more than 350 Student Chapters; a series of competitions at the school and college levels that involve over 500,000 students annually and culminates in the International Mathematical Olympiads; the Strengthening Underrepresented Minority Mathematics Achievement Program (SUMMA); and international membership and world-wide distribution of journals and books.

Weaknesses

Despite the commitment and strength of its members, many impediments weaken the MAA's ability to carry out its mission. The lack of significant sources of income apart from member dues is a major handicap that inhibits many potential Association initiatives. One consequence, a perpetual problem, is insufficient resources for discretionary projects.

Lack of regular rigorous reviews of current programs is another problem of long standing: it is difficult for an organization that relies on volunteers to make tough choices to end programs that may have out-lived their usefulness. However, as new initiatives are considered as part of the strategic planning process, current programs must be reviewed in light of these new opportunities and challenges.

While volunteer efforts have historically been the major source of leadership for the Association, the pace of unfunded volunteer activities is often too slow for the demands of an active policy-oriented Washington-based professional society. The very grass roots strength of

the Association often prevents the development of a clear national view among our many members.

Other weaknesses, similarly, are the mirror side of strengths. Governance is one. Twenty-nine of the 50 Governors are elected by the Sections and the primary MAA experience of many of these Governors is at the Section level. With only two Board meetings per year, this can make it difficult for them at times to be well informed about the national affairs of the MAA. Tradition itself is another. The perpetuation of programs based mainly on tradition rather than actual determination of current priority can act further to reduce the resources available for new initiatives. Finally, one might mention the independence of MAA members, Sections, and leaders: while vigorous independence produces enormous variety and excellent programs, it makes it difficult for the national organization to mobilize and focus the Association's energies on important, timely themes.

A Five-Year Plan

The major portion of this Strategic Plan consists of a series of objectives and proposed initiatives arranged under each of the program and operational goals. The proposed initiatives offer special opportunity to advance the mission of the Association at this particular time. They represent choices to be made of new priorities that will influence the nature and effectiveness of the Association's work well into the early years of the next century.

Determining priorities among the various initiatives is a responsibility of the Strategic Planning Committee, the Executive and Finance Committees, the Board of Governors, and the MAA staff. Specific responsibility for developing, refining, and implementing particular initiatives rests primarily with the Councils and committees of the Association.

PROGRAM GOALS

A. Education

Goal: **Stimulate active learning, promote effective teaching, and encourage appropriate assessment in the mathematical sciences.**

Responsibility: COUNCIL ON EDUCATION.

Objectives:

1. Develop and disseminate national guidelines for college and university programs in the mathematical sciences dealing with curriculum, teaching, and evaluation.
2. Foster widespread implementation of recent recommendations for teaching, learning, and assessment of undergraduate mathematics.
3. Stimulate and help strengthen college and university departments in the mathematical sciences.
4. Support implementation of standards for effective mathematics preparation of prospective

teachers at all levels.

5. Encourage additional studies and research on effective teaching, learning, and assessment.
6. Encourage effective and equitable means of assessing student performance and abilities.
7. Stimulate and encourage programs which foster mathematics research experiences for undergraduate students.
8. Foster quantitative literacy for all college graduates.

Education in mathematics involves learning to reason mathematically, acquiring knowledge of mathematical theories and methods, and developing skill in applying mathematics. In the complex world of the twenty-first century, an increasing percentage of the work force will be required to reason mathematically, to know mathematics, and to apply mathematics. In undergraduate programs, mathematics is a distribution requirement in a liberal arts education, an essential tool for success in future careers, as well as an important discipline in its own right. Attention should be given to the mathematics courses serving students who enter college without having adequately mastered high school mathematics.

The significance of mathematics in the modern world is generating an exciting revitalization of mathematics education. The dramatic changes in school mathematics envisioned in the NCTM *Standards* require totally new preparation for the next generation of teachers of school mathematics. At the undergraduate level, changes in calculus and in other courses are bringing about new approaches to teaching mathematical reasoning, content, and applications. The focus is on making students active learners so they can in the future become active, productive users of mathematics in their own lives. These changes require re-thinking the preparation of future teachers of mathematics at all levels.

The expanding role of mathematics and its applications makes continuing mathematics education essential for all mathematicians, whether they are inside or outside academia. Those teaching mathematics and those pursuing non-academic careers need to share their educational experiences with each other to properly frame the educational agenda for students, inside and outside the classroom. Building quality programs and departments in the mathematical sciences is the task of the broad mathematical community. Over the next several years, through a variety of efforts, the MAA should encourage departments to meet the "Guidelines for Programs and Departments in the Undergraduate Mathematical Sciences," developed by the MAA and endorsed by other professional mathematically-based organizations. The MAA must play a leadership and advocacy role in these changes in mathematics education, especially in undergraduate mathematics.

Follow-up efforts, beyond existing reports, are needed to encourage change in teaching, in the preparation of teachers for the NCTM *Standards*, and in the use of technology. Changes are also needed in the way we teach, reducing reliance on lecturing and giving students a more active role in the learning process. As changes occur, continued attention needs to be devoted to assessing student learning in courses and programs and using the results in program evaluation.

Initiatives:

- **Document What Works.** *Produce a report for the mathematics community describing highly successful undergraduate mathematics programs.* Include programs that enhance recruitment and retention of mathematics majors; programs that prepare a substantial number of students effectively for school teaching; programs that are successful in preparing students for graduate school; programs that are particularly effective in attracting, and addressing the needs of, groups traditionally underrepresented in mathematics; and programs that have distinguished themselves in providing research experiences for undergraduates. A part of this effort should be to assist people to document their own growth and effectiveness. A primary measure of successful programs should be assessment of what students learn and how well they are able to use that learning. Examples developed in this initiative can be used to strengthen MAA programs in support of department chairs.
- **Teacher Evaluation.** *Work with AAHE and MSEB to document more sophisticated ways of evaluating teaching.* The Report of the JPBM Committee on Professional Recognition and Rewards speaks to the need to reward the full range of professorial contributions. Evaluation is a necessary part of the reward system, but there is widespread dissatisfaction with the current use of student evaluations. Both education about existing methods of evaluation and development of new methods are needed. A bibliography of the literature surrounding teacher evaluation should be compiled and included in *FOCUS*.
- **College Teacher Preparation.** *Identify and foster graduate programs in the mathematical sciences, in depth as well as in breadth, that are especially effective at preparing students to teach.* As part of this initiative, develop special MAA programs aimed at graduate students planning careers in college teaching, e.g., MAA graduate student chapters; an MAA graduate student newsletter; a graduate fellow program for future college faculty, especially women and minorities; programs for advanced graduate students which include explicit consideration of teaching and learning with mathematicians as role models; and guidance for departments seeking to assure mathematical breadth of students in doctoral programs.
- **Elementary and Secondary Teacher Preparation.** *Inform mathematical sciences departments more clearly of the urgency for change in teacher preparation.* Encourage their efforts in designing teacher preparation programs that are grounded in the philosophy of the NCTM's *Professional Standards for Teaching Mathematics* and MAA's "A Call for Change." Provide national visibility for exemplary, effective programs.
- **Technology in Classroom.** *Provide leadership to the mathematical community in the use of new technology-based mathematics classroom materials.* Issues include the cost of technology-based mathematics classrooms, the changes in content, the effects of technology on the definition of correct mathematical conduct, and the comparison to traditional methods. Studies may include pilot testing at selected colleges and universities.
- **Applied Mathematical Needs of Undergraduate Students.** *Propose changes in the content and teaching of courses in the mathematical sciences to reflect better the ways mathematics is used in different disciplines and industrial settings.* Develop strategies to engage the non-academic mathematicians in shaping new curricula for future needs in

mathematics-dependent fields. Collect data on MAA members employed in government, corporate, or small companies about work requirements and mathematical prerequisites.

- **Curricular Reform in Upper Division Courses.** *Prepare a set of recommendations for content, pedagogy, and assessment of upper division mathematics courses.* These should reflect the broadening career choices for majors, the growth of the discipline of mathematics and its diverse applications, and changes in the practice of mathematics resulting from the impact of technology. This initiative is a natural extension of the MAA's current efforts supporting calculus reform. Topics to be studied include the organization of the mathematics major, capstone courses, and assessment of the major.
- **Educational Research.** *Encourage research and studies to determine how to be effective in teaching, learning, and assessment.* Although many in the mathematics community are embracing the ideas of change in mathematics education, there is much to be learned about the effects of various approaches to change and how to effectively implement change.
- **Statistics.** *Conduct a study of the state of statistics education at the collegiate level, possibly in cooperation with the American Statistical Association.* Statistics is an increasingly important and popular subject of study in the mathematical sciences. Some of the issues to be addressed are the curricular impact of statistics on the mathematical sciences majors and the personnel issues that need to be resolved for departments to do justice to the teaching of statistics.

B. Professional Development

Goal: **Foster scholarship, professional development, and a spirit of association among mathematical scientists.**

Responsibility: COUNCILS ON MEETINGS, PUBLICATIONS, AND HUMAN RESOURCES.

Objectives:

1. Promote a broad view of scholarship in the mathematical sciences.
2. Encourage mathematics faculty to participate regularly in significant professional development activity.
3. Strengthen the role of MAA meetings in professional development and in fostering a sense of community among mathematical scientists.
4. Provide multiple forums for exposition and dissemination of mathematics.
5. Convey new mathematics to practitioners and new mathematical practice to mathematicians.
6. Encourage professional cooperation among different MAA constituencies (e.g., high school teachers and college and university professors, faculty and administrators).
7. Enhance use of electronic communication for scholarship, professional development, and fostering a sense of community among mathematical scientists.
8. Provide programs in which faculty can learn about new pedagogical approaches.

The rapid pace of change--in technology, in revised perceptions of excellence in teaching,

in expanding frontiers of mathematics, and in increasing pressure for higher levels of student achievement--compel mathematics faculty and mathematical scientists in industry to engage in broad-ranging, career-long professional development. Increasing demands on faculty require continued development in many dimensions of professional life that go far beyond traditional responsibilities. The MAA, as the association devoted primarily to mathematics at the college level, bears responsibility for planning and promoting activities that support this renewed sense of scholarship and professional responsibility and has an important role in informing colleagues about what resources are available to help with teaching.

Initiatives:

- **Rewards.** *Promote a broadening of the reward structure.* Work with AMS, SIAM, AMATYC, and NCTM in an active campaign to alert, advise, and assist mathematics faculty, department chairs, deans, provosts, and other higher education administrators in implementing rewards structures reflecting the total mission of the department (teaching, research, scholarship, service to the local community, and service to the broad mathematical community).
- **Opportunities for Faculty Professional Development.** *Identify, publicize, and work to increase opportunities for faculty to engage in professional development both in corporations and academia.* Examples include expanding MAA summer institutes and minicourses and holding additional sessions at MAA meetings. Topics should include new pedagogical approaches, assessment, teacher evaluation, the reward structure, and electronic services. An annual report to the membership listing professional development opportunities will be created.
- **Campus Consultants.** *Strengthen and broaden MAA's program of campus consultants.* For example, conduct workshops to prepare campus consultants; prepare lists of consultants recommended in specific areas of broad concern (e.g., curriculum, teacher preparation, technology, professional development, electronic services) in consultation with the Committees and Councils on Education; select experienced consultants who can advocate particular new programs (e.g., intervention programs, research experiences for undergraduates, computer laboratories); form teams with balanced expertise for colleges and universities who are conducting reviews of their mathematics programs.
- **Professional Support for New PhD's.** *Establish programs to inform and involve new PhD's in education reform.* For example: workshops and other special events at national or Sectional meetings; mentoring by senior mathematicians, especially winners of the Award for Distinguished Teaching; and pilot postdoctoral program in educational practice.
- **Electronic Services.** *Promote electronic discussion groups; provide access to electronically stored databases, documents, and archives; and provide links to electronic services offered by other organizations or individuals.* Examples: discussion groups on geometry, assessment, multi-culturalism, calculus reform; access to a mathematics calendar, MAA reports and MAA committee reports, mathematical software, bibliographies, MAA journal indexes; and links to services provided by AMS, SIAM, and the Mathematics Archives. Also, launch a special information campaign to help smaller institutions join the Internet.

C. Students

Goal: **Enhance the interests, talents, and achievements of all individuals in the mathematical sciences, especially of members of underrepresented groups.**

Responsibility: COUNCILS ON HUMAN RESOURCES AND COMPETITIONS.

Objectives:

1. Enhance mathematics achievement of women and underrepresented minorities.
2. Increase diversity in the mathematical community.
3. Encourage and support mathematical enrichment activities for all students.
4. Encourage students with exceptional interests and talents in the mathematical sciences.
5. Expand and improve career information for students of all ages.

The larger mathematical community bears responsibility for finding ways to equip all students with the intellectual tools they will need to achieve their personal goals and to advance society in a highly competitive 21st-century global economy. Because mathematics is so often crucial to success in a student's education, mathematicians must make a special effort to pique interest and promote achievement among all students, especially those who historically have been underrepresented in careers that depend on advanced mathematics. The MAA, through SUMMA, is supporting college-based, academic-enrichment, intervention programs in mathematics and its applications for underrepresented middle and high school students. A directory of these programs has been compiled and widely distributed. Another recent effort by the MAA to attract students is the publication of *Math Horizons,* a magazine designed to provide career information and intellectual stimulation to students interested in mathematics.

Initiatives:

- **Recruitment and Enrichment.** *Take steps to recruit actively and to nurture mathematics students at all levels.* For example:
  - Disseminate information on teaching strategies and instructional materials that emphasize the importance of mathematics for all students.
  - Increase the number of MAA Student Chapters, paying particular attention to two-year colleges and minority institutions, and continue the cooperative relationship with Pi Mu Epsilon, the National Honorary Mathematics Society.
  - Create additional opportunities for students to attend and present papers at Sectional and national meetings and encourage them to submit their papers for publication.
  - Foster networking of professional mathematicians to mentor students and teachers at all levels, with focus on the underrepresented. In particular, implement the SUMMA mentoring program to encourage minority students to continue their study of the mathematical sciences.
  - Develop, maintain, and disseminate an on-line database of internships, and enrichment and research programs for undergraduates.
  - Promote the value of the educational experience available to mathematical

sciences students through community service.
- Provide information for undergraduates about graduate school in the mathematical sciences.
- Support the development of enrichment programs for mathematically talented students along the continuum from elementary through collegiate levels.
- Develop a program to expand recruitment activities supporting women interested in mathematics, including the current Women in Mathematics Program (WAM).

- **Contests.** *Develop creative activities, both competitive and cooperative, for students in the mathematical sciences at various levels.* For example, seek ways to make competitions, contests, and other enrichments activities more appealing to women and minorities, and develop expanded forms of contests that involve cooperation, larger problems, and less stringent time limits.
- **Changing the Culture.** *Launch a program to make mathematicians throughout the country aware of the importance of the atmosphere in their departments and to provide them assistance, so that women, and others, will want to continue in mathematics to the extent of their interests and abilities.* Examples: panels, talks, and contributed paper sessions at national and Sectional MAA meetings, articles in FOCUS about departments which are successful in recruiting and retaining women, publication of an MAA Handbook on programs to change the culture, minicourses, and mentorship training.
- **Career Promotion.** *Greatly expand MAA activities that are career-related.* For example:
  - Continue to expand annual career fairs at Section meetings.
  - Involve the corporate community and other employers in explaining to students and faculty the necessity of sound mathematical preparation.
  - Develop and encourage forums where recent mathematical science graduates can share career experiences with undergraduates.
  - Establish an electronic bulletin board on which employers can advertise internships and openings for graduating mathematics majors.

D. Public Policy

Goal: **Influence institutional and public policy through effective advocacy for the importance, uses, and needs of the mathematical sciences.**

Responsibility: ADMINISTRATION AND COUNCILS ON AWARDS AND EDUCATION.

Objectives:

1. Expand public information activities on behalf of the mathematical sciences.
2. Increase mathematicians' awareness of public policy effects on the mathematical sciences and of their own responsibilities in shaping institutional and public policy.
3. Define and advocate an agenda for support of mathematics, especially at the collegiate level.
4. Frame national debate on accountability and assessment in support of effective mathematical learning.
5. Work with mathematical and governmental organizations to bring about systemic change

in education in the mathematical sciences.

Lack of appreciation by the public of the role that mathematics plays in modern society has many serious consequences, including lack of parental support for their children's mathematical education, lack of adequate funding for collegiate mathematics, and lack of adequate support for the mathematical research enterprise. In the absence of effective information about the needs and importance of mathematics education and research, public officials will find it difficult to make decisions that are helpful to mathematics education and research.

The MAA works in partnership with other organizations, through the Joint Policy Board for Mathematics, the Conference Board of the Mathematical Sciences, the Coordinating Board for AMATYC, MAA, and NCTM, and MSEB's Math Connections, to enhance public understanding, influence public policy, and leverage institutional support on issues that matter to mathematics. The three JPBM societies, for example, are currently engaged in developing National Policy Agendas, the common core of which will become a joint National Policy Agenda to guide the work of the JPBM staff and board.

Awards can play an important role in this effort, for they signal to our members and to the public what we value--teaching, writing, student accomplishments--and serve as a platform on which to build the public message of our goals and objectives. The JPBM, for example, sponsors the JPBM Communications Award which honors individuals who have been especially effective in communicating important messages about mathematics to broad audiences. The MAA's new national and Sectional Awards for Distinguished Teaching of Mathematics focus attention on excellent teaching at the collegiate level.

Initiatives:

- **Cooperation for Public Policy.** *Continue to work with JPBM and other mathematical organizations to identify key public policy issues that affect the mathematical sciences.* Examples: impediments to the use of calculators and computers in college-level mathematics; public demand for assessment of undergraduate programs; the use of part-time faculty in two-year colleges; and Congressional interest in certifying national standards. Once identified, these issues can be brought to the attention of MAA members by incorporating discussion and debate into meetings, publications, and electronic media.
- **Campaign for Increased Support.** *Advocate continued funding of mathematics education at levels adequate to meet needs.* For example, provide recommendations for reduced class size to help departments get the resources they need to bring about changes in collegiate mathematics.
- **Corporate Forum for Collegiate Mathematics.** *Create a Corporate Forum for Collegiate Mathematics, possibly in cooperation with the Society for Industrial and Applied Mathematics, in order to link MAA activities more closely with corporations which employ mathematics majors.* The Forum could help MAA initiate and develop activities that would better serve our business and industry members; take steps to encourage industry to recognize the value of mathematics degrees and to hire

mathematics graduates; and help define, strengthen, and promote various bachelor's, master's and doctoral degrees designed to match the needs of industry. An important first step is to define the agenda for the Forum and its place in the MAA organizational structure.

OPERATIONAL GOALS

I. Sections

Goal: **Strengthen local opportunities of MAA members for leadership and influence.**

Responsibility: COMMITTEE ON SECTIONS.

Objectives:

1. Assist Sections in developing strong programs to support MAA members.
2. Improve communication with Sections on MAA projects and enhance the support and participation of Sections in these projects.
3. Encourage Sections to broaden their base of active members.
4. Help Sections become effective state and regional advocates for mathematics education policies that support MAA goals and guidelines.

The 29 Sections of the MAA form the grass roots base of the Association, providing many members with the opportunity for active involvement in the organization and its programs. Although national level Councils, committees, and the Board of Governors develop policy and establish initiatives to advance the mathematical sciences in higher education, the Sections play a critical role in the dissemination, discussion, and implementation of those issues. As the Association moves more actively and decisively to revitalize undergraduate education and to broaden its membership base, the MAA Sections will be called upon to increase their already important activities in these areas. In particular, the Sections must play a central role in developing minority leadership in the mathematical community and in changing departmental cultures to ensure quality education for all students. In addition, Sections must work to ensure that their student members become active participants in the mathematical community.

The importance of the Sections cannot be overstated. Governors elected by the Sections form the major part of the Board of Governors; attendance at Section meetings generally exceeds attendance at the two national meetings; and Sections nominate and award many of the Association's prizes for both students and faculty. Sections also provide the opportunity for newer MAA members to develop leadership skills. The increasingly active role of states in educational leadership--represented by the Governors' initiatives, the NSF "systemic" initiatives, and the MSEB-inspired state coalitions--gives urgency to strong broad-based state-level MAA activities.

Initiatives:

- **Section Action Plan.** *Design a program that will aid Sections in developing Section*

Action Plans. These Plans should include ideas for programs of special interest to the Section, especially as they relate to the MAA Strategic Plan. In particular, these Plans should include specific suggestions to accomplish the MAA objectives for Section activities.

- **Collaboration at the State Level.** *Develop working partnerships between MAA Sections, MSEB state coalitions, and NCTM affiliates to support state K-12 education reform.* Programs should be developed for Section meetings to inform the MAA membership about state education reform and how the membership can get involved.

II. Publications

Goal: **Advance quality exposition of mathematics for students, faculty, professionals, and the public.**

Responsibility: COUNCIL ON PUBLICATIONS.

Objectives:

1. Expand and strengthen publications intended for MAA members.
2. Enlarge the MAA publications program in order to reach much wider audiences.
3. Develop an MAA archives program.
4. Increase net revenue so that publications become a major source of funds for support of MAA programs.

Exposition of mathematics has been a strength of the MAA since 1915 when the Association was founded, in part, to provide a home for the *American Mathematical Monthly*. Today, the importance of this goal is reinforced by the accelerating growth of mathematical knowledge and applications. In this era, books and journals must meet the needs not only of mathematics professionals, but also of students, scientists, and the public. The MAA must strengthen its role as the premier publisher of high quality exposition of mathematics, and at the same time reach a larger audience including students, the public, and members of the scientific, engineering, and financial communities who depend heavily on mathematics. As the economics and even the modes of publication are changing rapidly in the electronic age, the Association must keep abreast of these changes, including possible electronic publication in the future.

Recent efforts of the MAA have included the continued enhancement of *FOCUS,* the publication of the student magazine *Math Horizons,* and the launching of *Classroom Resources Materials,* a new series designed for college students containing experimental texts and supplements to standard texts.

Initiatives:

- **Publications for Members.** *Strengthen the publication offerings designed for MAA members.* For example, complete the redesign process of *FOCUS*; seek out educational software and multimedia products to publish; conduct surveys and publication focus

groups at national and Sectional meetings to sharpen the focus on members' needs.

- **Career Information.** *Publish books of career information for students (and faculty).* Example: *101 Jobs You Can Do With Mathematics.* Current dissemination of career information shows a very strong demand for such materials.
- **Popular Books.** *Strengthen efforts to publish books designed primarily for educated non-members who have an interest in things mathematical.* Some of the MAA's biggest sellers are "popular" books. Examples include *What Is Calculus About?* by W.W. Sawyer, *Mathematical Cranks,* by Underwood Dudley, *Mathematical Circus,* by Martin Gardner, and *The Search for E.T. Bell,* by Constance Reid.
- **Archives.** *Expand MAA activities related to establishing and maintaining archives.* For example, provide information about archives for mathematicians and their heirs, set up a plan for periodical archiving of documents generated by the MAA, create an archive of pictures of mathematicians at the MAA Headquarters, develop a systematic program of gathering archival material from the Sections.
- **Enhanced Sales Effort.** (See description under Finance.)

III. Governance

Goal: **Enhance effectiveness of MAA governance.**

Responsibility: EXECUTIVE COMMITTEE.

Objectives:

1. Restructure functions and meetings of the Board of Governors to increase Board effectiveness in Association leadership.
2. Introduce new MAA leaders to major national policy issues concerning mathematics and mathematics education.
3. Make Councils and committees effective advocates for the Strategic Plan of the Association.
4. Provide MAA members with expanded opportunities for service and leadership, with special attention to increasing the role of individuals from underrepresented groups in the governance of the Association.
5. Implement effective electronic communication within the Washington office and between the Washington office and the various MAA governing groups.

The MAA has several layers of responsibility for governance. The Board of Governors has ultimate responsibility for policy and direction of the Association. It meets twice a year, primarily to hear reports and act on recommendations from MAA committees. There are two key committees of the Board:

- The Executive Committee "shall review continually the policies and activities of the Association,...plan and organize new activities,...formulate in broad outline the programs of meetings and of publications, and in general,...consider all matters of importance or interest to the Association."

- The Finance Committee "shall receive and administer the funds of the Association, control its properties and investments, make its contracts, and exercise such powers as may be delegated to it by the Board."

Over 140 standing and *ad hoc* committees carry out much of the work of the Association and recommend action to the Board through the Executive and Finance Committees. They are, for the most part, grouped through Councils into six areas: Awards, Competitions, Education, Human Resources, Meetings, and Publications. The Councils coordinate committee activity and provide long-range vision.

Association activities take place both centrally (from its Washington Office) and locally within Sections. The Executive Director "shall have charge of the central office of the Association and shall carry out such other duties as may be assigned...by the Board." Sections are essentially self-governing, with broad guidelines set by the Board of Governors.

Recent moves to improve governance include the following:

- The development of Councils, with assignment of Board members to Council areas, should enhance communication between committees and the Board. There has also been increased full Board discussion of important issues facing the Association.
- Steady efforts are being made to bring a broader representation of constituencies to all the levels of governance.
- Communication within and between the various levels is being enhanced by electronic means. A new computer system has been installed in the Washington Headquarters, and plans are being implemented to improve the capability for effective electronic communication between the Washington office and the rest of the world.

The effectiveness of the grouping of committees within Council areas will be reviewed and evaluated within the next five years. At that time a general review of the organizational structure of the Association will be carried out.

Initiatives:

- **Program Review.** *Initiate regular Board review of MAA programs in relation to goals and priorities in the Strategic Plan.* The present forms of some programs may no longer match MAA objectives as well as they once did. Program review can be initiated by Councils and carried out by the Long Range Planning Subcommittee. To provide long-term consistency to program review, responsibility for scheduling and implementation should be assigned to the Secretary and the Treasurer.
- **Increase Board Effectiveness.** Conduct a study of the Boards of other organizations and make recommendations on ways to further improve the effectiveness of the Board and Board meetings.
- **Leadership Training.** *Provide opportunities for MAA leaders to become more knowledgeable about the workings of the Association and about the positions of responsibility that they are assuming.* Examples include a leadership retreat for new MAA officers, Board members, Council chairs, and key committee chairs, and sessions

at the annual meeting for new Governors of the MAA. Have briefings from key people and allow time for discussion about how current issues relate to MAA goals and the Strategic Plan.

- **Electronic Service for MAA leadership.** Set up an electronic service for governors, section officers, and committee chairs, designed to keep them well informed about the national affairs of the MAA.

IV. Membership

Goal: **Expand MAA membership to include those who have a professional stake in college-level mathematics.**

Responsibility: COMMITTEE ON MEMBERSHIP.

Objectives:

1. Increase individual membership in the MAA to reflect the diversity of the mathematical sciences community.
2. Increase and broaden institutional membership in the MAA to reflect the variety of higher education, business, and industry.
3. Enhance efforts to retain members.

In order to support fully the mission of the MAA, it is essential to have maximal participation by all of the individuals involved in advancing the mathematical sciences in higher education--students, faculty, and mathematicians from business, industry, and government.

Initiatives:

- **Momentum for Membership.** *Launch a multi-pronged initiative to shape and strengthen the membership of the Association.* Make special efforts to attract more members who are students, minorities, two-year college faculty, or employees of business, industry, and government. At the same time, work to increase membership of people from groups which have traditionally joined the MAA.
- **Broaden Institutional Memberships.** *Launch a special campaign to increase and broaden institutional memberships to reflect the variety of higher education and of non-academic institutions that employ mathematicians.* Such a campaign can develop more benefits for institutional members and more involvement with the Association among department chairs and deans, and among industrial employers. Moreover, new markets for publication sales can be developed, particularly by targeting mailings geographically tied to national meeting sites.
- **Raise Retention Rates.** *Develop a strong, systematic program for member retention using special inducements for each segment of membership.*

V. Finance

Goal: **Enhance financial support for current and new MAA programs.**

Responsibility: FINANCE COMMITTEE.

Objectives:

1. Work to ensure healthy balance of revenue sources (dues, publications, grants, gifts, endowment).
2. Increase net revenue from publications program, national meetings, and advertising.
3. Create an endowment equal to two years' operating expenses.
4. Seek grant support for initiatives that advance major MAA goals.
5. Provide budget support for start-up funds and other new initiatives.
6. Monitor the financial soundness of the building investment.

MAA's financial base has grown roughly in proportion to its membership, supporting basic member services but chronically insufficient for program activity. While still maintaining a healthy balance, MAA's financial base needs to grow in several directions if we are to have the capability of carrying out the expanded leadership activities in this Strategic Plan. Moreover, as MAA external projects expand, it is increasingly important for the Association to monitor staff growth and the balance between external projects and internal tasks. Another dimension of the MAA's financial capacity is our need to act quickly and take advantage of opportunities. A fund devoted specifically to this purpose would greatly strengthen the MAA's influence in collegiate mathematics education.

MAA has recently launched a planned giving program to encourage estate planning by MAA members and charitable gifts to the MAA through bequests, annuities, trusts, life insurance, and other forms of planned gifts that will benefit the donors and the MAA.

Initiatives:

- **Enhanced Sales Effort.** *Develop new marketing and advertising strategies for publications and meetings.* Examples: focus on students, public, international markets, employers, graduate programs.
- **Endowment.** *Seek to increase MAA's endowment substantially:*
  - identify and cultivate prospective donors;
  - designate special programs or areas (e.g., student activities) for support programs from endowment funds;
  - conduct a feasibility study to set a campaign goal and identify opportunities and potential barriers to reaching that goal; and,
  - based on the outcomes of the feasibility study, conduct a national MAA endowment Campaign.
- Planned **Giving Program.** Expand the planned giving program, providing prospective donors with additional information and options for special gifts.
- **Grant Support for Initiatives.** *Increase the capacity of the MAA to secure grants for major initiatives.* Provide committee chairs with up-to-date information (via Handbook, e-mail) on funding programs, hold proposal writing workshops for MAA committee

chairs.

- **Project Initiation Funds.** *Establish a line item of $25,000 -- $50,000 annually for project initiation funds which can be used to develop proposals for initiatives emerging from this Strategic Plan.* These funds should be made available on a prioritized basis.

Appendix: Strategic Planning Process

The strategic planning process began in the spring of 1991 when MAA President Deborah Tepper Haimo appointed a fifteen member Task Force charged with preparing a planning report for the Board of Governors. The Task Force includes all MAA Council Chairs as well as leaders of AMS, SIAM, and NCTM; it has been assisted throughout by consultants Graham Finney and Patricia Owens of the Conservation Company and by members of the MAA staff. The Task Force began its work with a two day meeting in Orono, Maine during the August 1991 summer meeting of the Association. It then met in Washington in September and in Baltimore in January to reach agreement on general goals and objectives. To gauge members' priorities, the Task Force held open discussions with the Board of Governors and the Section officers and undertook a survey of Association members which was published in *FOCUS*. A draft of the report was prepared during the spring of 1992 and reviewed by members of the Task Force. A revised version was then prepared and discussed by the entire Task Force at a meeting in Washington in late May. Based on this meeting, the document was revised once again, and was submitted to the Board of Governors for a first reading in August 1992. At the January meeting in San Antonio, the Board approved the mission and goals of the Strategic Plan and charged individual MAA Councils and committees to review the relevant initiatives from the plan and to suggest revisions, deletions, and additions. These Council and committee reviews, as well as comments and straw votes from the August 1992 and January 1993 Board meetings, have been incorporated in this version of the Strategic Plan, which was approved by the Board at the January 1994 meeting in Cincinnati.

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