# Mathematics Opportunities

## MAA Contributed Papers in Burlington

The Mathematical Association of America (MAA) and the AMS will hold the annual Mathfest from Sunday, August 6, 1995, through Tuesday, August 8, 1995, in Burlington, Vermont. The complete announcement will appear in the April 1995 issue of *Focus* and the May 1995 issue of the *Notices*. This preliminary announcement is designed to alert participants about the MAA's contributed papers sessions and their deadlines.

Please note that the days scheduled for these sessions, as well as other details, remain tentative. The organizers listed below solicit contributed papers pertinent to their sessions; proposals should be directed to the organizer whose name is followed by an asterisk (*). Sessions generally must limit presentations to ten minutes, but selected participants may extend their contributions up to twenty minutes.

*Implications of the NCTM Standards for College Level Teaching*, Sunday and Monday afternoons.

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New secondary mathematics curriculum projects funded by the National Science Foundation engage students in learning situations aligned with the NCTM Curriculum and Evaluation Standards for School Mathematics. Characteristics of these projects include changes in mathematics content, use of technology, new pedagogical approaches, mathematics in context, inclusion of all students, and emphasis on student understanding of mathematics. As a result of these projects, students will arrive at post-secondary institutions with new expectations and experiences. This session will address project approaches, teacher development issues, evaluation, and student learning.

*Symbolic Computation in the Undergraduate Mathematics Classroom*, Sunday and Monday afternoons.

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Coorganizer: Richard O'Lander, St. John's University

The creative use of computer algebra systems is resulting in a revolution in the way we teach mathematics. These systems have been effectively used in teaching calculus, linear algebra, differential equations, combinatorics, probability, and statistics. This session invites papers on experiences with the use of a symbolic computation system in teaching mathematics. Subject areas not mentioned above are especially welcome.

*Innovative Teaching in First-year College Mathematics Courses*, Sunday and Tuesday afternoons.

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Coorganizer: Howard L. Penn, U.S. Naval Academy

This session will present talks describing innovative techniques in the teaching of mathematics courses typically taught in the first year of college. Innovative techniques include (but are not limited to) the use of technology, writing projects, and cooperative learning.

*Achieving K–12 and Higher Education Collaboration in Systemic Reform Programs*, Sunday and Monday afternoons

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With much national emphasis on systemic reform of mathematics education at both the K–12 and higher education levels, this special session targets examples of effective collaborative efforts involving personnel and/or institutions at the two levels. The collaboration, formal or informal, can be in either or both directions. Hopefully, the examples will point the way for others to get involved.

*Interactive Mathematics Video Games*, Sunday and Monday afternoons.

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Coorganizer: Ralph DeVane, Western Carolina University

We live in the "video age", so why not make it work for us within our mathematics classes? Make a math lesson out of some video game. Utilize some "math game" software. Write your own math game software (computer or calculator). This is only one aspect of using technology, but if you have done any of the above, share your experience with others at Mathfest. Please include a clear statement of your equipment needs.

*Popularizing Mathematics*, Sunday and Tuesday afternoons.

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Coorganizer: Bernard R. Hodgson, Université Laval

Papers on successful activities to popularize mathematics are solicited. Of special interest are activities aimed at popularizing mathematics both outside the classroom, among families, seniors, policymakers, etc., and in the university classroom for students enrolled in mathematics "service" courses, including prospective elementary school teachers. Submissions should include some documentation of the activities, some information on who developed and ran them, the segment of the population to whom they were aimed, how often the programs have run, and some indication of their degree of success.

*Submission Procedures for Contributed Paper Proposals*

After you have selected a session to which you wish to contribute a paper, forward the following directly to the organizer (indicated above with an (*)):

· the name(s) and address(es) of the author(s), and
· a one-page summary of your paper.

The summary should enable the organizer(s) to evaluate the appropriateness of your paper for the selected session. Consequently, you should include as much detailed information as possible within the one-page limitation. Your summary must reach the designated organizer by **Monday, April 24, 1995**. The organizer will acknowledge receipt of all paper summaries. If the organizer accepts your paper, you will receive a standardized abstract form. Use this form to prepare a brief abstract. Please return the completed form to the organizer by Monday, May 8, 1995. Abstracts received after the deadline will not be published in the booklet of abstracts which will be available in the meetings registration area during the conference in Burlington.

**DO NOT FORWARD COMPLETED ABSTRACTS TO THE MAA OR TO THE AMS. THEY ARE TO BE SENT TO THE SESSION ORGANIZER.**

Each session room contains an overhead projector and screen; blackboards will not be available. You may request one additional overhead projector, a 35mm slide projector, or a 1/2-inch or 3/4-inch VHS VCR with one color monitor. Persons needing additional equipment should contact, as soon as possible but prior to May 5, 1995: Donovan H. Van Osdol, Department of Mathematics, University of New Hampshire, Durham, NH 03824; e-mail: dvanosdo@math.maa.org.

# Opportunities in Support of Multidisciplinary Research

The National Science Foundation (NSF) announces opportunities in support of multidisciplinary, group-oriented research for fiscal year 1995 in connection with the U.S. High Performance Computing and Communications (HPCC) Program, including the new Information Infrastructure Technology and Applications component and the National Information Infrastructure. This activity builds on the Grand Challenge Application Groups and the National Challenge Groups competitions to include several distinct but interrelated components:

*Grand Challenges*: to prepare the groundwork for the HPCC goal of sustained teraflop computing on important application problems utilizing parallel, distributed, and heterogeneous computing systems and high-performance networks.

*National Challenges*: to demonstrate the solution of problems beneficial to a broad spectrum of society which contain an extensive information processing component and which could benefit greatly by building an underlying information infrastructure.

*Enabling Technologies*: to accelerate progress in developing those technologies that will enable the community to take full advantage of high-performance computing and communications systems in solving problems represented by the Grand Challenges and National Challenges. "Computer Science Challenges" focus on the development of computing technology ranging from computer architecture through systems software to algorithms. "Mathematical Sciences Challenges" focus on advances in the mathematical

sciences ranging from algorithms through the development of tools to the essential use of computation in extending mathematical frontiers. "Problem Solving Environments" focus on the development of computational environments that take advantage of unique characteristics of specific problems in order to shorten the problem-solving cycle.

A total of fifteen to twenty proposals are expected to receive funding. The emphasis will be on support for cross-disciplinary groups requiring and/or contributing HPCC capabilities.

The proposal deadline is **June 9, 1995**. The full program announcement is available through STIS, the NSF's online information service. Use ftp or gopher to the address `stis.nsf.gov` and find the document labeled nsf955b. Or use Mosaic to connect to the URL `http://stis.nsf.gov/`. One may also request publication number NSF 95-5 from: Forms and Publications Unit, National Science Foundation, 4201 Wilson Boulevard, Arlington, VA 22230; telephone 703-306-1130; e-mail `pubs@nsf.gov`.