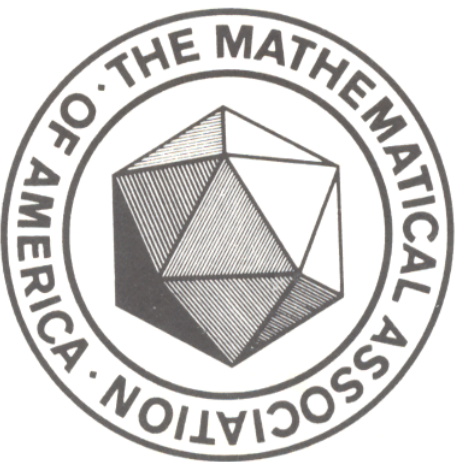


MARYLAND—DISTRICT OF COLUMBIA—  
VIRGINIA SECTION OF THE MAA  
NEWSLETTER



# MARYLAND—DISTRICT OF COLUMBIA— VIRGINIA SECTION OF THE MAA NEWSLETTER

Vol. 8, No. 4 Editor: John Milceticich Apr. 1987

## SPRING MEETING

The Spring Meeting of the Maryland-District of Columbia-Virginia Section of the Mathematical Association of America will take place on Saturday, June 13 at Salisbury State College. A map showing directions to the meeting appears elsewhere in the newsletter.

Dr. Larry S. Husch, Professor of Mathematics and Director of the Mathematics Micro-Computing Laboratory, University of Tennessee, Knoxville, will be our speaker at the spring meeting. He has wide and varied experience in computing, in mathematics and in combining the two into a central scholarly activity. An abstract of his talk and the complete program for the meeting appear in the newsletter.

A buffet luncheon is planned for Saturday at a cost of \$9. We need a minimum of 50 reservations by May 29 in order to hold the luncheon. Please complete the enclosed preregistration form and return it to the Treasurer before May 29.

Rooms on campus will be available at \$10.50 per person, double occupancy. There will be no charge for children if they bring sleeping bags and stay in the same room. For reservations call 301-543-6468. *5/20/87 THW 9:05Am.*

Following is a list of nearby motels.

Temple Hill Motel	301-742-3284
Three blocks from campus	
One person, one bed	\$24
Two persons, one bed	\$34
Two persons, two beds	\$40
Extra per child	\$ 5
Thrift Travel Inn	301-742-5135
Two miles from campus	
One or two people	\$31.80
Two persons, two twin beds	\$33.92
Three persons, one double, one twin	\$36.04
Two doubles	\$38.16
Additional person	\$ 4.00

Sheraton  
One mile from campus  
One person \$58  
Two persons \$73  
No charge for children if two adults are in the room.

Best Western  
Two miles from campus  
One person \$44  
Two persons, one bed \$48  
Two person, two beds \$50  
Extra per child \$ 4

Days Inn  
Rates not available at this time. 301-749-6200

## CALL FOR NOMINEES

At the spring meeting the section will elect two officers, the Treasurer and the Vice-Chairman for Membership. Anyone interested in being a candidate for one of these positions or desiring to nominate someone for one of the positions may contact any member of the Nominating Committee. The members of the Nominating Committee are Howard Penn (U. S. Naval Academy), Chairman, Mary Kay Abbey (Montgomery College), and Donald Peoples (Mary Washington College).

## FROM THE CHAIRMAN

In the last issue of the Newsletter, Governor Ben Fusaro reported on the activities of the Board of Governors and posed the question: "Do you think that the MAA is trying to do too much?" I believe that the answer to this question lies between the lines of the 156 page agenda for the Business Meeting in San Antonio. I could not agree more with Ben when he suggests that we concentrate our efforts on two or three critical items (for example, professional development, curriculum and instruction). What do you think?

Our upcoming meeting on June 13 promises to be extremely appealing from both a professional and social point of view.

Vice-Chairman for Programs Bill Sanders promises that our keynote speaker, Larry Husch, is going to deliver an enjoyable and thought-provoking paper. Homer Austin, Local Arrangements Coordinator at Salisbury State College, has arranged for convenient and inexpensive lodging both on and off-campus. Why not bring family and friends to the Eastern Shore of Maryland for a late spring getaway? Crabs will be running that time of year and, if we are really lucky, our meeting date might coincide with one of those Church Possum and Oyster Suppers so celebrated by the locals. Ocean City, Maryland and Rehoboth Beach, Delaware are an easy drive from Salisbury, adding to the attractiveness of the

meeting site and date. With the meeting sandwiched in between our section's two summer workshops on Artificial Intelligence and Operations Research, we hope to attract a record number of attendees and participants.

Less exciting, but important nevertheless, will be the elections for Vice-Chairman for Membership and Treasurer of the section. It's very easy to take for granted the activities of the section; that's because we usually manage to attract some highly professional colleagues to assume and fulfill responsibilities which make for a smooth operation. On this subject, it strikes me as being appropriate at this time, the end of my term as Chairman, to thank all of those individuals who made my job an easy one: Governors John Smith and Ben Fusaro, Vice-Chairs for Programs Liz Teles and Bill Sanders, Newsletter Editor John Miccetich, Secretary Bev Phillips, Treasurer Ray Hancock, Regional Exam Coordinator Sally Garber, Summer Workshop Coordinator Ben Fusaro, and Past Chairman and able advisor Howard Penn. To all of these people and to all the individuals at Montgomery College, Mary Washington College, Loyola College and Salisbury State College, hosts of our meetings during the last two years, a heartfelt THANK YOU! I look forward to handing over the proverbial gavel to Chairman-Elect Liz Teles in June.

- Bob Levand

#### SUMMER WORKSHOPS

The MD-DC-VA section of the MAA will sponsor two workshops at Salisbury State College on the Eastern Shore of Maryland in June 1987. The workshops are intended for college mathematics teachers. The total cost is \$220 per workshop including meals and room (double occupancy). There is a deposit of \$100 per workshop, refundable until 15 May 1987.

AI, Mathematics and the Microcomputer  
8-12 June 1987

Dr. Stefan Shrier, Director of Research & Development at Grumman-CTEC, Inc, Georgia Institute of Technology will conduct the workshop which will provide a survey of Artificial Intelligence technologies and will tie them into college level mathematics. He has BS and MS degrees in Engineering Mathematics from Columbia University and a PhD in Applied Mathematics from Brown University.

Mon A perspective of AI...where's the math?  
Tue AI languages, their uses and the computer  
Wed Classical AI: trees, search and heuristic  
Thur Logic and the resolution principle  
Fri AI in the classroom

OR, Mathematics & the Microcomputer  
15-19 June 1987

Dr. J. J. Bartholdi will conduct this workshop which will focus on two important operations research problems - routing and scheduling. He is Associate Professor of Industrial & Systems Engineering, Georgia Institute of Technology. He has a BA and MS in Mathematics and a PhD in Systems Engineering, all from the University of Florida.

Mon A perspective of OR. Information,  
problem formulation, accuracy vs efficiency  
Tue Applications of space-filling curves: pen  
plotter, milling machine, robotic retrieval  
Wed Applications of hybrid heuristics &  
partitioning: multi-vehicle routing,  
packing problems  
Thur Assignment and scheduling problems  
Fri OR in the classroom

Those wishing additional information may contact the workshop director: Dr. B. A. Fusaro, Department of Math Sciences, Salisbury State College, Salisbury, MD 21801.

A summer workshop, conducted by Allen J. Schwenk of Western Michigan University, will be sponsored by the North Central Section of the MAA from 15-19 June 1987. It will be held at the University of Minnesota, Duluth and is entitled "Graph Theory and Linear Algebra". Inquiries may be addressed to Joseph A. Gallian, Department of Mathematics and Statistics, University of Minnesota-Duluth, Duluth, Minnesota 55812.

Fred S. Roberts of Rutgers University will conduct a workshop on "Applications of Discrete Mathematics" from June 15-19 at the University of Maine, Orono, Maine. The workshop is sponsored by the Northeastern Section of the MAA and The Conferences and Institutes Division, University of Maine. For further information, contact Clayton W. Dodge, Mathematics Department, University of Maine, Orono, Maine 04469, phone: 207-581-3908. Deadline for registration is June 1.

The Michigan Section of the MAA will hold a short course entitled "Integrating Mathematics: Geometry, Numbers, Algebra and Combinatorics" from August 3-7 at Hope College, Holland, Michigan. The principal lecturers are Peter Hilton of SUNY at Binghamton and Jean Pederson of Santa Clara University. Application forms, meal and room costs and further details may be obtained from Prof. John Van Iwaarden, MAA Short Course, Math Department, Hope College, Holland, Michigan 49423, phone: 616-392-5111, ext. 3192 or 3001.

The Ohio Section is offering a short course from July 15-17 at John Carroll University. The subject is "A New Unified Approach to Applied Linear Algebra" and Alan C. Tucker of SUNY at



Stony Brook is the principal lecturer. Further information may be obtained from Dwight Olson, Department of Mathematics and Computer Science, John Carroll University, University Heights, Ohio 44118.

The Allegheny Mountain Section is sponsoring a short course from June 25-28 at Allegheny College. Steven Brams of New York University will lecture on "Game Theory, Politics and Public Choice". For further information contact Richard McDermot, Department of Mathematics, Allegheny College, Meadville, PA 16335, phone: 814-724-5362.

Frank Giordano of the U. S. Military Academy and Maurice Weir of the Naval Postgraduate School will present a Mathematical Modeling Workshop at Messiah College from June 8-12. The workshop is sponsored by the Eastern Pennsylvania Section. Additional details are available from Marvin Brubaker, Mathematical Sciences Department, Messiah College, Grantham, PA 17027, phone: 717-766-2511, ext. 379.

Fort Lewis College will host a short course sponsored by the Rocky Mountain Section from July 13-17. William Lucas of the Claremont Graduate School will lecture on "Modern Topics in Discrete Mathematics".

#### SYMPOSIUM ON INTERNATIONAL COMPARISONS OF MATHEMATICS EDUCATION

The Mathematical Sciences Education Board (MSEB) of the National Research Council sponsored a Symposium on International Comparisons of Mathematical Education: Policy Implications for the United States on January 15-16, 1987. A summary of the symposium by Shirley A. Hill, Chairman of the Mathematical Sciences Education Board, is reproduced in the newsletter. In addition, the symposium participants forwarded a number of recommendations to the MSEB. These appear following the summary. The recommendations are under consideration as to appropriateness to the MSEB agenda. Any comments may be directed to Marcia Sward or Linda Rosen (Mathematical Sciences Education Board, National Research Council, 2101 Constitution Avenue, Washington, DC 20418; phone 202-334-3294).

There is a symposium transcript available via fourth class mail at \$10 per copy from the MSEB at the above address. Checks should be made payable to National Research Council. Copies of the Secondary International Mathematics Study Report may be obtained from Stipes Publishing Company, 10-12 Chester Street, Champaign, IL 61820, phone 217-356-8391. The prices for the individual reports are as follows:

United States Summary Report (130 pp.)	\$ 7.80
United States Detailed Report (440 pp.)	\$21.00
The Underachieving Curriculum (120 pp.)	\$ 8.00
Technical Report I (270 pp.)	\$ 9.00

A postage and handling charge of \$2.00 must be included. Orders for 10 or more copies receive a 15% discount.

The MSEB was established to provide such national leadership. We believe the time is ripe for it. To succeed, we must consult very broadly, listening not only to the experts and the policy makers but also to the practitioners and the consumers. This Symposium was convened in that spirit.

The plan for our work on a national basis includes:

- o Increasing public understanding of the issues;
- o Raising national expectations;
- o Reaching consensus on what the goals of school mathematics should be today, and the general directions they should take in the future;
- o Helping the states and localities move through a succession of planned stages of change until learning levels in school mathematics have been brought much more into line with the reality of national needs and national potential.

Without a focused and widely debated effort of this type, the states and localities will find it virtually impossible to deal with what they face in mathematics education, because future-oriented answers to each of the perennial questions -- "What should the curriculum be? How should it be presented? Where will qualified teachers come from? How will we evaluate whether the process works?" -- involves deep issues and the need for changing something akin to a national industry. And the roles of the primary actors in renewing mathematics education will remain as unclear as they are today.

The framework for such a national plan will be presented as part of MSEB's first major assessment of mathematics education, a Report to the Nation in early 1988.

Throughout our efforts, short-term benefits and improvements will come from:

- o Conducting national and regional symposia, and state and local conferences -- designed to gather and disseminate information and to help build consensus on the fundamental issues in mathematics education;
- o Working directly with state and local educational units, professional societies, colleges and universities, parent groups, etc., to assist them in interpreting and adapting NRC recommendations to fit their perceived needs;
- o Publishing interim reports and guidelines to recommend ways of strengthening the infrastructure of mathematics education.

We are counting on your help and support. We promise you ours.

SELECTED RECOMMENDATIONS TO THE MSEB  
from  
SYMPOSIUM ON INTERNATIONAL COMPARISONS  
OF  
MATHEMATICS EDUCATION

- o MSEB should take the leadership in developing an extensive public awareness campaign that, with the cooperation of other agencies and organizations, will mobilize the nation to bring about significant improvement in mathematics education. The campaign should develop understanding of why mathematics is important to the student and to the nation. The following steps should be included in the campaign:
    - wide dissemination of The Underachieving Curriculum and other pertinent information
    - wide distribution of the Speaker's Guide
    - distribution of videotapes of authoritative speakers, specifically prepared for local use
    - ask TV shows like 20/20 or 60 minutes to do a segment on the crisis in mathematics education
  - o MSEB should lead in the development of long-term national goals and guidelines in:
    - mathematics curricula
    - instructional materials, including textbooks
    - assessment and evaluation including appropriate tests
- These should be criteria against which states and localities can assess their performance.
- o MSEB should design and lead a national effort in the reformation of mathematics teaching and learning, placing initial emphasis on the early (including pre-school), primary and middle school years. Elementary and secondary school teachers must be involved in this reformation.
  - o MSEB should serve as a focal point for long-term continuous funding, and for continuous flow of new research funds. MSEB should work to correct present imbalances in allocation of resources so that mathematics attains a level of support commensurate with its importance to the nation and to individuals.
  - o MSEB should support efforts to establish centers across the country to enhance mathematics education of high ability students.

- o MSEB should support local alliances between parents, industry, public and private institutions to achieve a national consensus on issues.
- o MSEB should continue to make data available to researchers.
- o MSEB should establish a method for monitoring the implementation of its recommendations.
- o MSEB should work with the knowledge that Congress responds to an action-orientation, with programs that yield results.
- o MSEB should prioritize recommendations (e.g. immediate, interim, long-term).
- o MSEB should establish policy mechanisms for implementing change at each level of education (national, state, and local). MSEB should support the creation of district math specialists in areas where they do not already exist. Such specialists would be charged with providing support for teachers and facilitating teacher education and professional growth.
- o MSEB should arrange a conference for all state curriculum people to disseminate the information of the symposium. The state people, in turn, should be encouraged to hold similar meetings within their states to inform school boards and superintendents.
- o MSEB must learn about various roles played by state mathematics supervisors to maximize the effect the Board can have on each state. It may be necessary for MSEB to outline the appropriate responsibilities state supervisors should have.

SELECTED RECOMMENDATIONS TO THE MSEB  
TEACHER EDUCATION COMMITTEE  
from  
SYMPOSIUM ON INTERNATIONAL COMPARISONS  
OF  
MATHEMATICS EDUCATION

- o MSEB, together with professional associations, should accelerate the effort to reform teacher education and teacher preparation in accordance with agreed-upon national guidelines that are related to the new goals and objectives for mathematics education.
- o MSEB should emphasize the essential role of the teacher in the classroom, including recognition of outstanding teachers.
- o MSEB should help establish a collegial structure for teachers to function in.
- o MSEB should promote the idea of mathematics specialists in elementary schools and the idea of master teachers at every level.
- o MSEB should support:
  - implementation of findings on standards (including CUPM, level I, NAA and NCTM) for education of elementary teachers
  - programs to recruit, develop and retain quality mathematics teachers
  - programs to inform teachers of the many possibilities for applications of mathematics and the interdisciplinary aspects of mathematics
  - programs to lighten class load, and increase inservice release time
  - quality teacher education rather than quantity programs (as measured in the international comparisons)
- o MSEB should help transfer pedagogical techniques used abroad into the U.S. educational system, first for teacher education then for children.

SELECTED RECOMMENDATIONS TO THE MSEB STANDARDS COMMITTEE  
from  
SYMPOSIUM ON INTERNATIONAL COMPARISONS  
OF  
MATHEMATICS EDUCATION

- o MSEB should utilize the fact that most current educational research is consistent with common sense.
- o MSEB should develop national standards and goals that include a range of reasonable expectations.
- o MSEB should establish clear consistent indicators of student achievement.
- o MSEB should attempt to shift the public belief in innate ability to belief in hard-work and determination in mathematics learning.
- o MSEB should include all levels of professionals in the evolving process of setting standards.
- o MSEB should initiate research on:
  - how to test problem-solving skills
  - the predictive validity of tests, like those used on international comparisons
  - the use of two scores on standardized tests; one against national standards and one against local curricular goals
- o MSEB should develop appropriate assessment instruments consonant with newly raised standards for mathematics education.
- o The role of education in Japan is to reduce the variability among students. MSEB should define the role of education in the U.S. and determine how assessment should fit that role.
- o MSEB should encourage the use of the international comparison questions on state assessment tests.
- o MSEB should support efforts to upgrade minimum competency tests at the state level.



SELECTED RECOMMENDATIONS TO THE MSEB CURRICULUM COMMITTEE  
from  
SYMPOSIUM ON INTERNATIONAL COMPARISONS  
OF  
MATHEMATICS EDUCATION

- o As the first step, MSEB should establish goals of mathematics education and use these goals as a framework for all subsequent work.
- o Mathematics educators need supported research on:
  - technologically supported curricula
  - what should be learned at home and what should be learned at school
  - foreign textbooks to learn what we can
- o Mathematics educators need to develop:
  - pilot evaluations of mathematics programs
  - out-of-school and after-school projects to promote mathematics learning
  - effective use of classroom time
  - content goals for where students will be in year 1995
- o MSEB should set up curricular outlines for textbook publishers to follow; use investment tax credit to provide leverage on textbook publishers to follow MSEB outlines.
- o MSEB should recognize that AP courses are the culprit in the current focus on differentiated curricula.

SELECTED RECOMMENDATIONS TO THE MSEB  
EXTERNAL RELATIONS COMMITTEE  
from  
SYMPOSIUM ON INTERNATIONAL COMPARISONS  
OF  
MATHEMATICS EDUCATION

- o MSEB should establish a public awareness campaign to:
  - publicize the results of the symposium
  - inform of the negative effects of TV
  - encourage parents to adopt the idea of "I want my child to learn mathematics."
  - raise consciousness regarding the problems in mathematics education and the need for sustained effort to solve the problems.
- o MSEB should pressure corporations and government to make a sustained commitment to mathematics education including mathematical research.
- o MSEB should establish a central data bank to gather together and distribute source materials.
- o MSEB should set up a national campaign for mentoring and monitoring better mathematics achievement.
- o Speaker's Guides should be developed in an iterative way to publicize many relevant issues.

# INVITED SPEAKER

Our speaker, Dr. Lawrence S. Husch, is a teacher, researcher, and expositor. His training includes study at St. Francis College (Brooklyn, N. Y. --- B. S. 1965) and graduate study at Florida State University (M. S. 1964 and Ph. D. 1967). He has held teaching positions at the University of Georgia, VPI&SU, and the University of Tennessee where he is currently Professor of Mathematics and Director of the Mathematics Microcomputing Laboratory.

Dr. Husch was a Visiting Research Scientist at the University of Zagreb in Yugoslavia, 1976-77. He returned to Yugoslavia in 1986 as a Fulbright Distinguished Scientist at the University of Zagreb, Zagreb, and Inter-University Centre, Dubrovnik, Yugoslavia. He returned to Europe again in March, 1987, for a conference in Warsaw, Poland.

His publication record is impressive including over fifty research papers evenly distributed over the past two decades. He is a frequent speaker at conferences, both here in the United States and abroad.

He has been the recipient of a dozen research grants, mostly from NSF. His affinity for research is reflected in the fact that he has been thesis director for several Ph. D. candidates at the University of Tennessee.

## A B S T R A C T : "How NOT to Run a Mathematics Microcomputing Lab".

The Mathematics Department at the University of Tennessee, Knoxville, established a Microcomputer Laboratory in the Fall of 1983. The speaker will discuss its planning and implementation. He will discuss both joys and frustrations and both accomplishments and failures. Topics include the attempts to incorporate the microcomputer into existing courses, the introduction of new courses, and the development of software.

# The Maryland - District of Columbia - Virginia Section of The Mathematical Association of America

Spring Meeting  
Saturday, June 13, 1987  
Salisbury State College  
Salisbury, Maryland

## ALL TALKS AND MEETINGS WILL BE HELD IN DEVILBISS HALL

8:30 - 11:00 Registration  
9:00 - 9:30 "Welcoming Remarks"  
149 Devilbiss Dr. Nelson Butler, V.P. for Academic Affairs  
and  
Dr. John Holenda, Dean, School of Sciences

## SESSION BEGINNING AT 9:30 A M

110 Devilbiss "The Sequential Database Model"  
Michael Frame, Department of Mathematics, Statistics  
and Computer Science, The American University.  
240 Devilbiss "Learning to Learn Mathematics: A One-Credit Course"  
Elizabeth Shearn and Sally Wilding, University  
of Maryland.

251 Devilbiss "Statistics Without Random Variables"  
E. Lee May, Jr., Department of Mathematical Sciences,  
Salisbury State College.

## SESSION BEGINNING AT 10:00 A M

110 Devilbiss "Hamming Codes: An Approach to Discovery"  
Joseph Blum, Department of Mathematics, Statistics  
and Computer Science, The American University.

240 Devilbiss "Dimension of Plane Regions: Integer and Fractional"  
E. Sharon Jones, Department of Mathematics,  
Towson State University.

251 Devilbiss "Teaching About Combinations Without Permutations"  
Philip E. Luft, Department of Mathematical Sciences,  
Salisbury State College.



SESSION BEGINNING AT 10:30 A M

110 Devilbiss "How to Use the Computer to Enhance the Teaching of Calculus"

Howard Penn, Mathematics Department,  
United States Naval Academy.

246 Devilbiss

"Edge-distinguishing Map Coloring"  
Daniel Ullman, Department of Mathematics,  
the George Washington University.

INVITED ADDRESS -- 11:00 A M

147 Devilbiss

"How NOT to Run a Mathematics Microcomputer Lab"  
Lawrence S. Husch, Professor of Mathematics and  
Director of the Mathematics Microcomputer  
Laboratory, University of Tennessee, Knoxville.

LUNCH BREAK -- 12:00 to 1:00 P M

MAA BUSINESS MEETING -- 1:00 TO 2:00 P M

149 Devilbiss

Robert Lewand, Chairman of the Section.

SESSION FOR LONGER PAPERS BEGINNING 2:00 P M

110 Devilbiss

"Diagonalization over Commutative Rings"  
William P. Wardlaw and R. Bruce Richter,  
Mathematics Department, United States  
Naval Academy.

144 Devilbiss

"Favoring the Favorite: The UnAmerican Qualities of  
Tennis Scoring and Analysis of a Big Shot Strategy"  
G. Edgar Parker, Department of Mathematics and  
Computer Science, James Madison University.

246 Devilbiss

"A Survey Course on Dynamical Systems"  
Paul B. Massell, Mathematics Department,  
United States Naval Academy.

