

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



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Vol. 9, No. 2 Editor: Mary Kay Abbey Oct. 1987

NOTES FROM THE CHAIR

We hope that all of you are planning to attend the meeting on November 13 and 14 at Northern Virginia. This school is right in the center of our area and access is easy. Ron Davis and his colleagues have done a good job making arrangements with a local hotel for the banquet and accommodations for those of you who will stay overnight in the area. Bill has planned a great program. It promises to be a wonderful meeting so don't miss it!

Craig Bailey of the U.S. Naval Academy has agreed to be the regional exam coordinator of the high school math contest for Maryland and the District of Columbia. Sally Garber of Hollins College has agreed to continue as exam coordinator for Virginia. This important job has grown threefold in the past few years as more and more students are taking the exam. Thanks to both of you.

A slight correction to my notes of last time. The Tulane Conference on calculus was sponsored by the Sloan Foundation, not the MAA; however, the MAA did publish the report.

Louise Raphael, a member of the NSF Committee for Calculus Reform, will be at this Fall meeting. She will discuss some of the findings of the committee and then lead an open forum at 2:30. This is your chance to voice your opinion and have it heard by someone on the national committee.

Several publishers have agreed to display at this meeting. Please stop by and talk to them. They contribute needed funds to our treasury.

See you in a few weeks at Northern Virginia Community College in Alexandria.

NATIONAL MEETING: Everybody who is anybody is going to Atlanta (January 6-9, 1988) and attending the gala banquet to launch this year-long math community celebration. And anybody who has a lick of sense will buy one of those souped-up souvenir edition calculators, which combine calculation, graphing and symbolic manipulation capabilities with the power to change forever the way you teach your classes. The opportunity to buy an HP 28C at a \$175 discount is literally a once-in-a-lifetime offer.

Those who really want to join in the spirit will start off the year with our Centennial Banquet Package: \$30 for dinner, \$60 for a calculator, and a \$10 contribution to support the "100 Years" project. Once in a century, spend \$100 to help both yourself and your community's year-long celebration.

Elizabeth Teles

MAA Fall Meeting:

Bring the family and come to the Fall meeting at Northern Virginia Community College in Alexandria, VA. The meeting will have a great program and banquet. In addition, the location which is in close proximity to Washington, DC, Alexandria, and Mount Vernon provides visitors with ample opportunity for touring, shopping, theater, and nightlife.

MAA Fall Meeting Accommodations

A block of rooms has been reserved for Friday and Saturday nights, November 13 and 14, at the Ramada Inn, Seminary Road, in Alexandria, VA. The room rate per night is \$58 per room. The hotel is located adjacent to Interstate 395 approximately 4 miles south of the 14th Street bridge which crosses into the monument and museum area of Washington, DC. The hotel is one mile from the campus of Northern Virginia Community College and will be the site of the banquet.

Reservations can be made directly with the hotel by calling Gita, at (703) 751-9451 weekdays between 9 a.m. and 5 p.m. please mention that you are a participant in the Mathematics Meeting at Northern Virginia Community College. Hotel reservation deadline is October 30.

BANQUET

The MAA Fall Meeting Banquet will be held at the Ramada Inn on Friday, November 13. The banquet will begin at 7:30 p.m. and will be preceded by a cash bar beginning at 6:30 p.m. The cost for the banquet is \$14.50 per person and will feature a buffet consisting of chicken and beef, a variety of vegetables and salads, dessert, and beverage.

Reservations for the banquet must be made with the treasurer, David Scheller, at Virginia Commonwealth University, using the enclosed form. Deadline for banquet reservations is November 5.

Directions to Ramada Inn from I-395

From I-395 (Shirley Highway inside the Washington Beltway), exit Seminary Road East. Just past the circle take a right onto Kenmore Avenue (You cannot take a left onto Kenmore here). Kenmore ends at a traffic light on Van Dorn Street. Turn right on Van Dorn, go under Seminary Road, and then exit right onto Kenmore Ave. The Ramada is at 4641 Kenmore Avenue.

Directions to Alexandria Campus from -- the Ramada Inn --

Turn left onto Kenmore, then bear right onto Van Dorn. At the foot of the hill, at the light, turn left onto Braddock Road. Braddock will take you onto the campus. Once on campus, follow the signs for reserved parking.

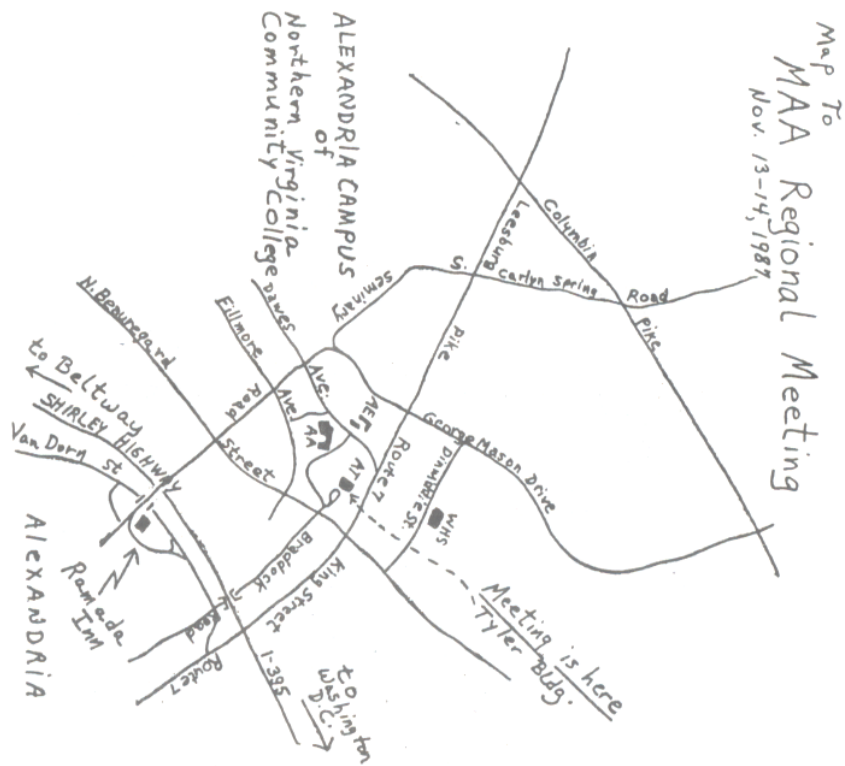
I-395 (Shirley Highway) --

Exit onto Seminary Road West. At the 2nd light after the traffic circle, turn right onto Beauregard St. At the 2nd light on Beauregard, turn left onto Braddock and the campus. Then follow the signs for reserved parking.

MINICOURSE

On Friday, November 13 Howard Penn and Jaes Buchanan of the U.S. Naval Academy will conduct a minicourse on Computer Software for the Teaching of Differential Equations. This minicourse will explore several MS-Dos software packages available for differential equations. Both commercial and freeware programs will be considered. Those people attending the workshop will have available PC compatible computers which will allow hands on experience with the software. This minicourse is essentially the same as the one that they will conduct at the national meeting in January. It will take place from 3 p.m. to 6 p.m. on Friday, November 13 in room 171 of the Bisdorf building. The cost is \$20 per person. The minicourse is limited to a maximum of 24 participants. The preregistration is required using the form in the newsletter.

* Note: Change in time to include one more hour.



BANQUET SPEAKER

Bernard L. Madison was born in Kentucky and received his training at Western Kentucky University (BS 1962) and at the University of Kentucky (MS 1964 and Ph.D. 1966). He has been a University faculty member since 1966. His experience includes thirteen years at Louisiana State University and eight years at the University of Arkansas where he is currently Professor and Chairman of the Department of Mathematics. He also served as Acting Dean of the Fulbright College of Arts and Sciences, University of Arkansas. He is Project Director of National Assessment of Mathematical Sciences, National Research Council. These duties require him to maintain two offices: one at the National Academy of Sciences on Constitution Avenue in Washington, DC and the other on the Fayetteville campus of the University of Arkansas. He has wide research interest; he has directed theses for several graduate students and has served on many, many Ph. D. Committees. He has served and currently serves on several Committees of the Mathematical Association of America.

Links and New Ideas - Bernard L. Madison

There are clear and strong links among what is taught, to whom it is taught, who teaches it, and the support resources available. The teacher, student, and curriculum components are relatively complicated in collegiate mathematics and the resources component is becoming more complex. These linkings make implementation of new ideas more difficult, with the effects of change reaching across universities, into school mathematics, and into the workplace. Understanding and considering these linkings in propositions for change is a major challenge for college and university mathematics.

The project "Mathematical Sciences in the Year 2000: Assessment for Renewal in U.S. Colleges and Universities", now in progress at the National Research Council, is to produce an agenda for immediate reinvigoration and renewal by the year 2000. Many other related activities are being conducted by professional societies in the mathematical sciences. Good ideas are being discussed, but the most difficult task of all lies ahead: moving these ideas into the classroom.

SATURDAY SPEAKER

Paul Zorn was born in India, and had his primary and secondary schooling there. He did his undergraduate work at Washington University in St. Louis, and his graduate work at University of Washington, Seattle. His dissertation area is several complex variables. Since 1981 he has taught at St. Olaf College, Northfield, Minnesota. His special interests, beyond complex analysis, include mathematical expository writing and using computers to strengthen mathematical teaching and learning. He is spending the academic year 1986-87 on sabbatical at Purdue University.

Calculus with Algebraic, Numerical and Graphical Computing - Paul Zorn

Many recent conferences and studies (the Tulane conference; an NSF-sponsored conference on computing and mathematics in Chicago last June; the recent conference on calculus here in Washington, the MSY 2000 study) have pointed out needs for change in how - and what - undergraduate mathematics is taught and learned. Modern computing is among the strongest engines of change; elementary calculus - the keystone of the undergraduate curriculum - is among the clearest candidates for change.

Experiments with numerical computing in elementary calculus have occurred for a long time, but the standard calculus course (embodied in mainstream texts) is little altered. Computer Algebra Systems, now appearing even on handheld machines, cannot be sideliably ignored. CAS's do so many routine calculus manipulations - algebraic, graphical, and numerical - as to seriously undermine standard, technique-oriented courses. For the same reason, CAS's can permit students to go beyond routine mechanics to see ideas more clearly and apply them more effectively.

After briefly summarizing some recent conference findings, I will describe in detail a St. Olaf project to incorporate use of the computer algebra system SMP into freshman calculus. I will discuss how SMP works, how students use it at St. Olaf, and, most importantly, how (and why) we think using a CAS can deepen and broaden students' encounter with the calculus.

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

Fall Meeting
Friday November 13 and Saturday November 14, 1987
Northern Virginia Community College
Alexandria, Virginia

Friday November 13, 1987

3:00 - 6:00
Room 117
Bisdorf Building

Minicourse: Differential Equations Software
Howard Penn and Jim Buchanan, USMA

Advanced registration required. Participation in the Minicourse is open to all interested persons but may be limited if the demand exceeds the capacity (24 stations) of Room 117. Send \$20 to David A. Schedler, Treasurer of the Section to preregister for the Minicourse.

The study centers on MS DOS compatible machines and software designed to enhance differential equations. Some of the software can be copied as a corollary, participants should bring three formatted disks to the Minicourse.

BANQUET AND SPEAKER

6:30 - 7:30 Cash Bar
7:30 P.M. Banquet
Ramada Inn, Seminary Road
Alexandria, Virginia

INVITED ADDRESS
"Links and New Ideas"
Dr. Bernard L. Madison
University of Arkansas and
National Academy of Sciences,
Washington, DC

Place your advance registration for the Banquet with Prof. Schedler before November 5.

Saturday November 14, 1987

ALL TALKS AND MEETINGS WILL BE HELD IN THE TYLER BUILDING ON THE
ALEXANDRIA CAMPUS OF NORTHERN VIRGINIA COMMUNITY COLLEGE

8:00 - 11:00 Registration
12:30 - 1:00 Tyler Building
8:30 - 11:00 Coffee and donuts available
Tyler Building
Lobby:

8:40 "Welcoming Remarks"
128 - 129 Tyler Dr. Jean Netherton, Provost, Alexandria
Campus, Northern Virginia Community
College.

SESSION BEGINNING AT 9:00 AM

11 Tyler "Minimum Dimension for Matrices of Order n"
J. R. Hanson, James Madison University.
12 Tyler "On the Road with Maryland's Lean and Lively Nukes"
Richard Leo Eisenman, Rand Corporation & UNIC and
Linda Mint, University of Maryland University
College.

13 Tyler "A Fast Route to Spectral Decomposition and Matrix
Canonical Forms Starting with the Cauchy Integral"
Jack Clark, Western Maryland College.

SESSION BEGINNING AT 9:30 AM

11 Tyler "How Many Angles"
Clifford J. Maloney, Bethesda, MD.

12 Tyler "New Uniform Asymptotic Series for Legendre Functions
on the Cut"
Alexander S. Elder, U.S. Army Ballistic Research
Laboratory, Aberdeen Proving Ground.

13 Tyler "A History of Topics in First Semester Calculus"
Thomas Sonnabend, Montgomery College.

15 Tyler "The Electronic Journal"
James P. Coughlin, Towson State University.

SESSION BEGINNING AT 10:00 A M

11 Tyler "Pupils, Pedagogos, and Problem Solving: Results from
Recent Research Projects"
Dr. V.M. Camerlengo, The George Washington
University.

12 Tyler "How Asymptotic Expansions of a Function $f(z)$ Can Lead
to More Accurate Approximations Than the Convergent
Series That Defines $f(z)$ "
William D. Reddy, US Army Ballistic Research
Laboratory, Aberdeen Proving Ground.

13 Tyler "Calculus via Music, Humor, Video, Food, and Other
Morsels"
(50 min) Andrew A. Bulleri, Howard Community College.

15 Tyler "An Easy Method for Proving Some Hard Binomial Identities" (50 min)
Lou Shapiro, Howard University.

SESSION BEGINNING AT 10:30 A M

11 Tyler "A Historical Approach to Calculus"
Victor J. Katz, University of the District of Columbia.

12 Tyler "Calculus, Discrete Mathematics and Signal Processing"
John Schmeelk, Virginia Commonwealth University.

13 Tyler Continuation of presentation in progress.

15 Tyler Continuation of presentation in progress.

11 A M MAA BUSINESS MEETING - 128 - 129 Tyler Building

12:00 Noon - 12:45 Lunch

128 - 129 Tyler INVITED ADDRESS 1:00 - 2:30 P M

"Calculus with Algebraic, Numerical, and Graphical Computing"
Paul Zorn, St. Olaf College and Purdue University.

SESSION BEGINNING AT 2:00 P M

11 Tyler "Dominant Stroke Analysis: Relief from the Numbers"
G. Edgar Parker, James Madison University.

12 Tyler "Sofya Kovalevsky, Woman of Mathematics"
Marcelle Bessman, Frostburg State College.

13 Tyler "Inspiring Differential Calculus Through the Use of Discrete Dynamical Systems"
James Sandefur, Georgetown University.

15 Tyler "Getting into Abstract Algebra: Quotient Groups and other Related Topics"
Eddie Boyd, Jr., University of Maryland and Eastern Shore.

OPEN FORUM 2:30 P M Chaired by Louise Raphael

A discussion of the issues raised at this meeting along with other topical matters.

For your information, the Virginia Chapter of NCTM is starting a speakers bureau. If interested, submit this form as directed.

VIRGINIA COUNCIL OF TEACHERS OF MATHEMATICS

VISITING SPEAKERS PROGRAM

NAME _____

HOME ADDRESS _____

TELEPHONE (____) _____

SCHOOL/INSTITUTION _____

ADDRESS _____

TELEPHONE (____) _____

PREFERRED MAILING ADDRESS: HOME _____ SCHOOL _____ (check one)

POSSIBLE TOPICS

TITLE _____

DESCRIPTION _____

APPROPRIATE LEVEL: Primary Elementary Middle School/Junior High
(circle those which apply) Secondary College General Interest

TITLE _____

DESCRIPTION _____

APPROPRIATE LEVEL: Primary Elementary Middle School/Junior High
(circle those which apply) Secondary College General Interest

Return to Mrs. Barbara Buchanan by July 15, 1987

2933 Link Road
Lynchburg, VA 24503

to promote improvement

to facilitate cooperation



Report from MD - DC - VA Section Governor

The MAA Board of Governors met Tuesday, 4 August 1987 in Salt Lake City.

First V.P. Deborah Halasz opened the meeting. (Pres. Leonard Gillman had been hospitalized and arrived a few hours later).

Executive Director Al Wilcox reported that memberships continue to climb. As of 6/87, we had 23,900 members in good standing. (Last year there were 22,800; in 1985 there were 19,100). The Washington offices' campaign seems to be working very well.

The budget outlook was not quite so rosy. FY 1987 could end up with anywhere from a \$40,000 deficit to \$10,000 surplus.

Warren Page will be leaving as editor of the College Math Journal in December 1988. (Section members will recall that Page was our banquet lecturer at the November 1983 meeting). He has done a fine job with the CMJ. The new co-editors will be Ann and Bill Watkins from the west coast.

The 1987 Chauvenet prize, which includes a \$1000 award, will go to Stephen Sale for his 1985 paper, "On the efficiency of algorithms". (It appeared in the AMS Bulletin, vol. 13).

SPECTRUM, a new book series, has been approved by the Board to replace the old "Miscellaneous publications". Peter Renz, who has had a great deal of experience in commercial publishing, will direct the SPECTRUM effort. It is expected to reach a wide audience of readers, bring in new authors and attract financial support. Among prospective authors are Martin Gardner on puzzles, Constance Reid on history, and Manfred Schroeder on fractals.

Stephen Maurer will be leaving as chairman of the Committee on American Mathematics Competitions. The new chairman is Leo Schneider of John Carroll University, Ohio.

The Board stopped short of fully supporting the Carnegie Forum and Holmes Group reports to eliminate education majors. However, in line with Section sentiments, it did strengthen its previous stance. Approval was given to recommendations that required prospective teachers in grades 9-12 to major in a math science program, and in grades K-8 to major in an academic discipline that includes courses recommended in an MAA 1980 publication on the preparation of teachers.

The next annual meeting of the MAA will be 6-9 January 88 in Atlanta, GA.

The next summer meeting of the MAA will be 8-12 August 88 in Providence, RI.

Ben Fusaro

AMSME, AIME, USAMO, and IMO News

Kenneth Young of Winston Churchill High School in Potomac, MD tied with three others for the fourth highest score on the American High School Mathematics Exam. He was also tied for first in Region IV. Also in the top ten in Region IV were Alexander Barry of South Lakes High School in Reston, VA; Jordan Ellenberg of Winston Churchill High School; Sam Vandervelde of Albemarle County High School in Albemarle, VA; Peter Bouman of Herndon High School in Herndon, VA; Neil Seltzer of South Lakes High School; and Michael Zieve of Midlothian High School.

Winston Churchill High School had the highest team score in the country on the AMSME.

Jordan Ellenberg of Winston Churchill High School had the highest score in the country on the AIME.

Sam Vandervelde of Albemarle County High School placed second in the USAMO. Jordan Ellenberg of Winston Churchill High School and Daniel Gottesman of Wall Whitman High School in Bethesda, MD received honorable mentions.

Jordan Ellenberg of Winston Churchill High School won a gold medal in the IMO in Havana, Cuba.

NOMINATING COMMITTEE

The nominating committee will consist of:

Howard Penn, U.S. Naval Academy, Chairman
Homer Austin, Salisbury State College
G. Edgar Parker, James Madison University

The following positions will be filled at the spring meeting.

Chairman Elect
Vice Chairman for Programs
Secretary

If you would like to nominate someone for one of these positions or volunteer yourself, please contact one of the committee members.

OFFICERS

Chairman

Elizabeth Tejes
Montgomery College
Takoma Park, MD 20912
(301) 587-4090/ext.305

Past Chairman

Robert Lewand
Goucher College
Towson, MD 21204
(301) 337-6239

Vice-Chairman Programs

Bill Sanders
James Madison University
Harrisonburg, VA 22807
(703) 568-6535
(703) 568-6184 (Secretary)
BITNET: FMC SANDS JMUVA1

Vice-Chairman Membership

Mary Kay Abbey
Montgomery College
Takoma Park, MD 20912
(301) 587-4090/ext.283

Secretary

Beverly Phillips
Thomas Nelson Community College
P.O. Box 9407
Hampton, VA 23670
(804) 825-2920

Treasurer

David A. Schedler
P.O. Box 2014
Virginia Commonwealth University
Richmond, VA 23284
(804) 257-1301

Governor
and Summer
Course
Coordinator
Ben Fusaro
Department of the Army
U.S. Military Academy
West Point, NY 10996
(914) 938-5285

REGISTRATION FORM

Registration for the Fall Meeting @ \$ 2.00 \$ -----

Banquet Reservation @ \$14.00 \$ -----

Minicourse Registration @ \$20.00 \$ -----

Name

Address

Send reservations to:

David A. Schedler
Department of Mathematical Sciences
P.O. Box 2014
Virginia Commonwealth University
Richmond, VA 23284

Activities in Washington - November 14 - 15

Kennedy Center (202-857-0900)

Washington Opera - Madama Butterfly (11/14)
The Apprenticeship of Dudley Kravitz
for concert, choral, and other activities call
202-254-3670 for information

Arena Stage (202-488-4377)

Joe Turner's Come and Gone
All the King's Men
Banjo Dancing

Folger Theater (202-546-4000)

The Witch of Edmonton

Washington Convention Center (202-364-5046)

Walt Disney's World on Ice

Ford's Theater (800-448-9009)

Words & Music

Capitol Center (301-350-3900)

Bullets Basketball Friday 8:00
Capitol's Hockey Saturday 7:30

Other local theaters

Source (202-462-1073)
Warner (202-626-1050)
Diney (202-452-0200)
Horizons (202-342-5503)
National (800-233-3123)
Woollly Mammoth (202-393-3939)

For others ideas call the MWCC math faculty at 703-845-6341