

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



Final Announcement

Section Meeting

April 16 - 17, 1993

Christopher Newport University  
Newport News, Virginia

**Maryland - D.C. - Virginia Section  
Mathematical Association of America  
Newsletter**

CoEditors: Ray & Ruth Hancock

Vol.14 No. 2 (Final) February 1993

## Notes from the Chair:

An exciting program for the April 16-17 meeting at Christopher Newport University includes guest speaker Peter Hilton, banquet and luncheon prepared by a real French chef at very modest prices, optional tours to nearby NASA and CEBAF labs, presenting our section's 1993 Distinguished Teaching Award, voting on the update of our section By-Laws, and election of new officers.

By having this spring meeting a week earlier than in the recent past, we are hoping to alleviate conflicts with the last week of classes that some have experienced, so that we can have a larger than usual turnout in Newport News. Regarding the NASA and/or CEBAF tours, be sure to check the registration information and respond promptly so that arrangements can be made.

Helen Christensen, RSM, Chair

The Fall Meeting of the Section is tentatively schedule to be held at Montgomery College, Tacoma Park campus  
November 12-13, 1993

— *Mathematical Association of America* —

Maryland / DC / Virginia Section  
Spring Meeting, April 16-17, 1993

Christopher Newport University  
Newport News, Virginia

Friday, April 16

1:30 - 3:30 - Tour

NASA Facility

3:00 - 5:30 - Tour

Continuous Electron Beam Accelerator Facility (CEBAF)

6:30 - 7:00 - Social Gathering

7:00 - Banquet

Campus Center, Room 150

Invited Speaker:

Dr. Peter Hilton

State University of New York at Binghamton

*Cryptanalysis During World War II*

Saturday, April 17

8:00 - 11:30 - Registration

Campus Center

8:30 - Welcoming remarks

Gosnold Hall, Room 101

### 8:50 - 9:20 - Contributed Paper Session I

*All contributed papers are given in Gosnold Hall*

Peter McCoy, U. S. Naval Academy  
*An Introduction to Tomography*

Marcelle Bessman, Frostburg State University, and James E. White, University of North Carolina, Chapel Hill  
*Using Interactive Math Texts as Teaching Tools, Part I*

Laxman M. Hegde, Frostburg State University  
*A Geometry of Testing Hypotheses*

William D. Reddy and Don Moss, Loyola College  
*Evaluating a Gauss-Laguerre Integral using Recursion Relations*

### 9:30 - 10:00 - Contributed Paper Session II

Peter C. Olsen, National Security Agency  
*Modeling the Oil Spill Cleanup after the Exxon Valdez*

Marcelle Bessman, Frostburg State University, and James E. White, University of North Carolina, Chapel Hill  
*Using Interactive Math Texts as Teaching Tools, Part II*

Vojislav Stojkovic and Samir Tannouri, Morgan State University  
*Unification: A Predicate Calculus Matching Algorithm*

William P. Wardlaw, U. S. Naval Academy  
*Factoring Cyclotomic Polynomials with Matrices*

### 10:10 - 10:40 - Contributed Paper Session III

Bruce Torrence, Georgetown University  
*Graphics Calculators in Probability and Statistics*

Ben Fusaro, Salisbury State University  
*Pre-Calculus Reform*

Ahlan El-Hage Tannouri, Morgan State University  
*Al-Khowarizmi's Six Problems*

Andrew D. Oh, St. Mary's College of Maryland  
*Notes on Class p Hypercubes*

### 10:50 - 11:20 - Contributed Paper Session IV

Carla N. Schultes, Salisbury State University  
*Characteristic Classes of Totally Geodesic and Riemannian Foliations*

Celeste M. Jordan, Salisbury State University  
*Using Derive to Increase Student Understanding of Applied Calculus*

Robert Singer, James Madison University  
*Identifying Dyadics by the Structure of Their Cus*

Kristy J. Orringer, James Madison University  
*Fractal Construction*

Melissa Pennell, Virginia Wesleyan College  
*Continued Fractions and Strong Chaos*

### 11:30 - 12:15 - MAA Business Meeting

*Gosnold Hall, Room 101*

### 12:25 - 2:30 - Luncheon

*Campus Center Cafeteria*

Invited Speaker:

Dr. S. Brent Morris

National Security Agency  
*Magic Tricks, Card Shuffling,  
and Dynamic Computer Memories*

### 2:40 - 3:10 - Contributed Paper Session V

Bruce Torrence, Georgetown University  
*Undergraduate Research Projects in Graph Theory*

Roland Minton, Roanoke College  
*Calculus Reform: An Evolutionary Talk*

Mathematical Modeling Contest  
*Problem A*

Mathematical Modeling Contest  
*Problem B*



### 3:20 - 3:50 - Contributed Paper Session VI

Richard E. Auer, Loyola College

*A Factor Analysis of Sexual Attitudes and Personality*

John H. Biggs, Frostburg State University

*"One Picture is Worth..." Use of Graphics Calculators in a "Soft" Calculus Course*

Mathematical Modeling Contest

Mathematical Modeling Contest

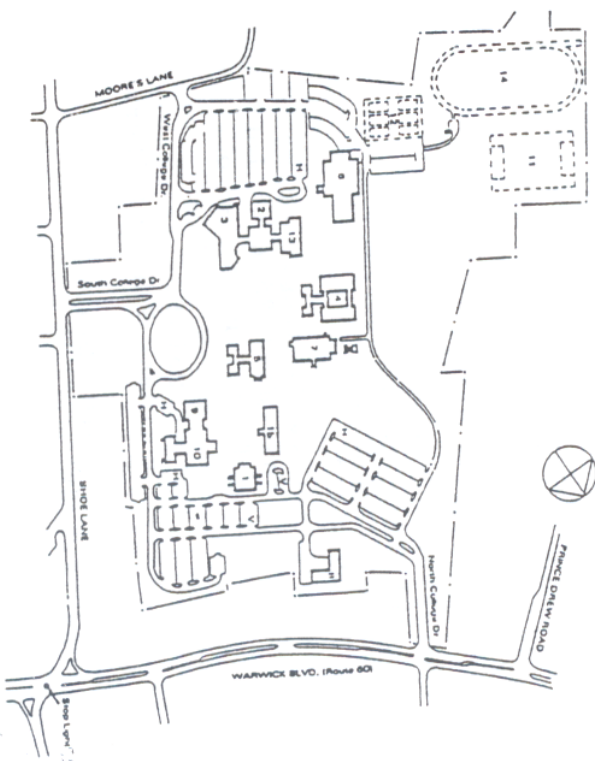
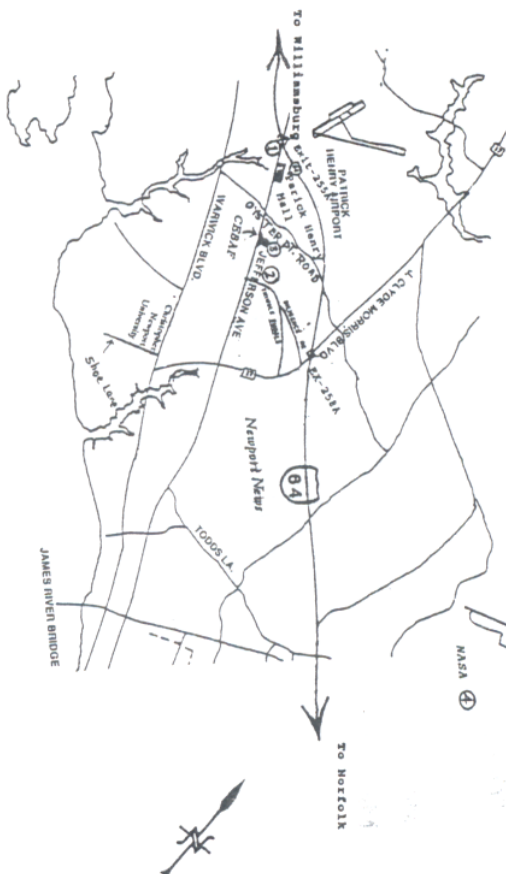
### Invited Speakers

Dr. Peter Hilton is Distinguished Professor of Mathematics at the State University of New York at Binghamton. He is the author of numerous books and research articles, mainly in the areas of algebraic topology, homological algebra, and group theory. He has a long-standing interest in mathematics education: he was chair of the United States Commission on Mathematical Instruction and chair of the National Research Council Committee on Applied Mathematics Training. He has been much concerned to revive the study of geometry at the pre-college and college levels and to develop an integrated mathematics curriculum. During World War II, Dr. Hilton worked on the German ENIGMA cipher machine and other German codes with Alan Turing.

Dr. S. Brent Morris received his doctorate in combinatorics from Duke, and holds a master's degree in computer science from Johns Hopkins. He is a member of the Board of Governors of the MAA, and past chair of the Joint Committee on Employment Opportunities. He is also an ACM Lecturer, and a Visiting Lecturer for both the MAA and for SIAM. He has served as the Executive Secretary of the National Security Agency's Director's Advisory Board, and is a member of the Order of Merlin of the International Brotherhood of Magicians. He claims to be the only person in the world to hold a Ph.D. in card shuffling.

**HOTELS**  
1-Comfort Inn - Newport News  
2-Days Inn - Oyster Point

3-CESAF  
4-NASA



- 1 - Administration Building
- 2 - Book Store
- 3 - Campus Center
- 4 - Goswold Hall
- 5 - McKimurran Hall
- 6 - Raitcliff Gymnasium
- 7 - Science Building
- 8 - Service Building
- 9 - Smith Hall
- 10 - Smith Library
- 11 - Soccer Field
- 12 - Tennis Courts
- 13 - Theatre
- 14 - Track
- 15 - Wingfield Hall

V - Visitor Parking

H - Handicapped Parking

## Directions to CNU

From I-64, take Exit 258A and go straight on J. Clyde Morris Blvd. until you reach Warwick Blvd. Turn right onto Warwick and then immediately left at the first traffic light (Shoe Lane). CNU is on your right (see map). For both the Friday night banquet and Saturday meeting, park in the west side parking lot in front of Ratcliffe Gymnasium.

For those staying in the motels: take Jefferson Ave. east to J. Clyde Morris Blvd. Turn right and follow the directions given above (see map).

## Lodging

A block of rooms has been reserved at each of the following motels for Friday night, April 16. Mention that you are attending the MAA Spring Meeting when you call. To reserve the rate quoted make reservations by April 2, 1993.

### Comfort Inn - Newport News

Patrick Henry Mall,  
12330 Jefferson Ave.

1-800-368-2477

\$40.00 + Tax(8.5%), single or double

Directions: Take Exit 255A on I-64 and  
Comfort Inn is on your left.

### Days Inn - Oyster Point

Oyster Point Business Park (Jefferson  
Ave.)

11829 Fishing Point Drive

1-800-873-2369

\$39.00 + Tax(8.5%), single or double

Directions: Take Exit 255A on I-64, go  
straight on Jefferson Ave.  
for about 2 miles, turn left  
on Thimble Shoals Drive and  
Days Inn is on your left.

## Banquet

**IMPORTANT:** Due to the limited number of seats available for the banquet (100), reservations for it must be received by Monday, March 29.

Date: Friday, April 16, 1993

Time: 7:00 P.M.

Place: Room 150, Campus Center

Menus: All menus include butter and petit pain, tossed salad, coffee and tea, desert, and white Zinfandel wine.

MENU I \$15.50

Deluxe Seafood Kabob over Saffron Rice

MENU II \$12.00

Stuffed Chicken Breast over Saffron Rice

MENU III \$10.00

Vegetarian Plate

## Luncheon

Date: Saturday, April 17, 1993

Time: 11:30 A.M. - 1:30 P.M.

Place: Cafeteria, Campus Center

Menu: Make your own sandwich buffet: Ham, Roast Beef, Turkey, Chicken Salad, Cheddar and Swiss Cheese, Cole Slaw, Pasta Salad, Lettuce, Tomato, Pickles, Brownies and Cookies, Coffee and Tea. \$6.50

## MINUTES OF THE FALL 1992 BUSINESS MEETING

The Fall 1992 Business Meeting was held at Coppin State College on 14 November. The meeting was called to order at 11:40 by Helen Christensen, Section Chair.

Milton Eisner, Section Secretary, moved the adoption of the minutes of the Spring 1992 Business Meeting. The motion was seconded and passed unanimously.

Milt Eisner also discussed the Distinguished Teaching Award program. Helen Christensen urged all departments to submit nominations.

Robert Tardiff, Section Treasurer, presented the Treasurer's Report. In summary:

Balance on Hand, 13 Nov 92	\$ 5638.06
Balance on Hand, 23 Apr 92	\$ 5481.16
Surplus for Period	\$156.90

It was noted that the figure for the balance on hand on 23 April 92 in the last Treasurer's Report was incorrect, and that the correct figure is that shown above.

Elizabeth Teles, Governor, presented the Governor's Report. The Governors had considered the Strategic Plan for the Association and the issue of assessment of mathematics programs. Bob Tardiff pointed out that governments, such as that of Maryland, are already demanding assessment of programs, and that any guidelines from MAA would be appreciated.

Helen Christensen pointed out that not every institution in our region has an MAA representative. The representatives are responsible for publicizing MAA activities, such as Distinguished Teaching Awards and section meetings, in their departments. A survey of those listed as institutional representatives found that some of those listed were deceased.

Helen Christensen brought up the matter of the Section's by-laws, which have not been amended since 1972. Section officers have already sent in recommended changes. A recommendation for revising the by-laws in whole or in part should appear in the spring newsletter. Issues include changing the name of the section ("Chesapeake" and "Mid-Atlantic" were suggested), removing gender-based pronouns and titles,

## Tours of CEBAF and NASA

### CEBAF

Date: Friday, April 16, 1993

Time: 3:00 - 5:30 P.M.

Meeting Place: Lobby of Building #12,

CEBAF Center

Directions: From I-64 (East or West) take Exit 255A, Jefferson Ave. Remain on Jefferson Ave. for about one mile. CEBAF is on your left.

Remark: The maximum number of people in the tour is 42. CEBAF requires all women participants to wear pants and flat shoes.

### NASA

Date: Friday, April 16, 1993

Time: 1:00-3:00 P.M.

Meeting Place: (tentative) NASA Front Gate

Directions: From I-64, take Exit 263B, continue on Hampton Road Center Parkway for about 2 miles, turn left onto Armistead Ave., go about 2 miles. NASA is on your left.

Remark: The maximum number of people on the tour is 50. The tour will NOT have any restrictions regarding citizenship. Additional information will be sent to those sign up for the tour.

IMPORTANT: Because numbers of people allowed on the tours are limited, registrations for them must be received by March 29.





## The MD-DC-VA Section of the MAA

Will Sponsor

A Workshop at

Salisbury State University

on the Eastern Shore of Maryland



### Energy Systems Modeling

1-5 June 1993

Dr. H. T. Odum, Research Professor at the University of Florida. Dr. Odum will use his systems language, a synthesis of energetics and mathematics, to study energy flows, economics, the environment, and public policy.

**Tue** Systems and principles of energy flows, basic energy diagrams, maximum power principle.

**Wed** Hierarchy. Autocatalytic systems, basic patterns of systems. Energy transformity and energy.

**Thur** Energy and money. Spectrum of energy distribution and pulsing.

**Fri** Economics and public policy. Ecological economics.

**Sat** Complexity, information, and order. Spatial distribution and diversity.

The workshop begins on Tuesday morning at 9:00 and ends on Saturday morning at 11:30. The afternoons will be used for lab work and a bus trip to study the environment of the Eastern Shore.

Registration for the workshop is \$100, refundable until May 7th. It is very likely that NSF funds will be available to offset the costs of room & board for undergraduate college teachers.

Workshop Director: Dr. B. A. Fusaro

Dept of Math and Computer Sciences  
SSU, Salisbury, Maryland 21801  
(410) 543-6470 or 543-6471



an article on institutional representatives and their responsibilities, and changing the method of voting from in person at the meeting to mail ballot or a system of absentee ballots.

The meeting discussed how best to present the student solutions to the Modeling Contest at the spring meeting.

Helen Christensen announced that the Spring 1993 meeting of the Section will be held on 16-17 April at Christopher Newport University. At this meeting a new Vice Chair for Membership and a new Treasurer will be elected. The nominating committee consists of Mary Kay Abbey, Beverly Phillips, and John Nolan.

It was moved that the Section Secretary be directed to write a letter of thanks to Coppin State College. The motion was seconded and approved unanimously. Helen Christensen thanked all the speakers and the exhibitors for their contributions to the meeting.

Kevin Colligan suggested that members solicit student papers for presentation at the spring meeting. The meeting was adjourned at 12:34.  
Respectfully submitted,

*Milton P. Eisner*

Milton P. Eisner, Section Secretary

## Campus News Items

### Roanoke College:

Promotions, Tenure, Emeritus Status:  
Jeffrey L. Spielman has been promoted

to Full Professor.

Nasser Barghouty has been granted

Tenure.

OOPS:

In the Fall Newsletter Ms Jan Minton was referred to as John Minton. The Editors apologize.

## Governor's Report

The Mathematical Association of America (MAA) and the American Mathematical Society (AMS) held its annual winter joint meeting from January 12 to January 17, 1993, in San Antonio, Texas. On Tuesday, January 12, I attended the meeting of the Board of Governors. Among the primary issues discussed were Guidelines for Mathematics Departments and the Five Year Strategic Plan of the MAA. At the spring meeting in Virginia I will bring copies of both the Guidelines and the Strategic Plan. Come to the business meeting for a discussion of both documents. The Guidelines received final approval from the Board of Governors. The MAA is now planning ways to disseminate this document to the mathematics community. I think all of you will find it a very helpful document to use when conducting self-studies for accreditation or long- or short-range planning for the mathematics department. Later in the afternoon, the Board of Governors of MAA and the AMS Council met jointly to discuss moving the 1995 annual meeting from Denver, Colorado, to another city in protest to Colorado's recent vote on civic rights of homosexual members of the state. After about an hour and a half of discussion, both associations independently voted to move the meeting. Only in the last few years have the MAA and the AMS begun to take positions on issues of such matters.

Another exciting up-coming event is the closed circuit interactive videoconference entitled "Math Connection" that will be held simultaneously at 150 public television stations around the country on October 2 under the direction of the Mathematical Sciences Education Board. Twenty-one people will participate at each site to discuss barriers to changing attitudes, reform of mathematics, and successful local reform efforts by local schools and universities. These individuals will represent MAA, NCTM, and MSEB, as well as high school and elementary school principals, colleges of teacher education, state boards of education, school boards, school administrators, and others involved with these exciting changes.

Sessions at the meeting were exciting. Some of the newer issues addressed in the talks were: impact on assessment of non-traditional teaching strategies, research in undergraduate mathematics education, role of mathematics departments in preservice education of K-12 teachers, precalculus reform, and linear algebra. Also there is still very active interest and excitement about calculus reform.

It was not all work. There were a lot of opportunities for play and fun with both old and new friends. I loved the good food, good conversation, riverwalk, and jazz and other music, all of which provided relaxation time. I hope all of you can attend a national meeting sometime. They are quite exciting and very informative.

See y'all at Christopher Newport in April.

Elizabeth J. Teles, Governor



# Calculus Reform Workshop

## July 18-23, 1993

Penn State University, University Park

The National Science Foundation is sponsoring a Calculus Reform Workshop at the University Park Campus of the Pennsylvania State University, July 18-23, 1993. Its purpose is to provide information on the Calculus Reform Movement -- its history, and philosophy of pedagogy -- and to recruit involvement in this movement. The workshop will be led by David Smith and Lawrence More, the developers of *Project CALC: Calculus as a Laboratory Course* at Duke University. In 1991, *Project CALC* received the EDUCOM Higher Education Software Award for the Best Curriculum Innovation in Mathematics.

The workshop is open to all who teach Calculus. There is no registration fee. Room, meals, and all materials will be paid for by the NSF. Transportation is not included. Space is limited. For those applications received by March 31, notification of acceptance to the workshop or placement on a waiting list will be sent in early April. Those interested are encouraged to apply up until May 31 as there may still be openings available. Applicants are required to include a letter from an appropriate administrator confirming that they will be teaching Calculus during the 1993-94 academic year.

Sign-in will be from 5:00 to 7:00 P.M. on Sunday, June 18. The workshop ends with lunch on Friday, July 23.

### For More Information Contact:

David M. Bressoud  
329 McAllister Bldg.  
University Park, PA 16802-6403  
(814)865-4061 fax: (814)865-3735  
e-mail: DVB@MATH.PSU.EDU

### SECTION OFFICERS, 1992-93

<b>Chair</b>	Sr. Helen Christenson, RSM Loyola College in Md. 4501 N. Charles St. Baltimore, MD 21210-2699 (410)617-2286	<b>Home:</b> 106 Woodlawn Rd. Baltimore, MD 21210 (410)467-0026 HCC@LOYOLA.BITNET or HCC@LOYOLA.EDU
<b>Chair-Elect</b>	Prof. Ben Fusaro Salisbury State University Salisbury, MD 21801 (410)543-6470	<b>Home:</b> E3FAFUSAR@SAE.TOWSON.EDU
<b>Vice-Chair, Programs</b>	J. Kevin Colligan National Security Agency Ft. Geo. G. Meade, MD (Attn. R21) 20755-6000 JKCOLL@AFTERLIFE.NCSC.MIL	<b>Home:</b> 403 Lexington Dr. Silver Spring, MD (301)681-4249
<b>Vice-Chairs, Membership</b>	Ray & Ruth Hancock Emory & Henry College(Retired) Emory, VA 24327 (703)944-3010	<b>Home:</b> Box Y Emory, VA 24327-0965 fax: (703)944-4438
<b>Secretary</b>	Prof. Milton Eisner Mount Vernon College 2100 Foxhall Rd. NW Washington, DC 20007-1199 (202)625-4635	<b>Home:</b> 1565 Hane St. McLean, VA 22101 (703)356-9723
<b>Treasurer</b>	Prof. Robert Tardiff Salisbury State University Salisbury, MD 21801 (410)543-6475	<b>Home:</b> (301)742-4157 E3FARM@SAE.TOWSON.EDU
<b>Governor</b>	Prof. Elizabeth Teles Rm.1210, Div.of Undergrad.Ed. National Science Foundation 1800 G Street NW Washington, DC 20550 (202)357-1189	<b>Home:</b> 11501 Chantilly lane Mitchellville,MD 20721 eteles@NSF.Gov
<b>Student Chapters Coordinator</b>	Prof. William Sanders Dept. of Math. James Madison Univ. Harrisonburg, VA 22807 (703)568-6535	

Notes

## REGISTRATION FORM

Registration for Spring Meeting \_\_\_\_\_ @ \$ 5.00 \_\_\_\_\_

### FRIDAY BANQUET

Menu I (Seafood Kabob) \_\_\_\_\_ @ \$15.50 \_\_\_\_\_

Menu II (Chicken Breast) \_\_\_\_\_ @ \$12.00 \_\_\_\_\_

Menu III (Vegetarian Plate) \_\_\_\_\_ @ \$10.00 \_\_\_\_\_

SATURDAY LUNCHEON (Sandwich Buffet) \_\_\_\_\_ @ \$ 6.50 \_\_\_\_\_

TOTAL \$ \_\_\_\_\_

Names of participants in CEBAF TOUR: \_\_\_\_\_

Names of participants in NASA TOUR: \_\_\_\_\_

Name(s) \_\_\_\_\_

Address \_\_\_\_\_

School/Company affiliation: \_\_\_\_\_

Make checks payable to MAA and send to:

Dr. Robert Tardiff  
Mathematical Sciences Department  
Salisbury State University  
Salisbury, Maryland 21801