

MD.-VA.-D.C. SECTION, MAA

SPRING MEETING ANNOUNCEMENT

Saturday, April 16, 1983

Thomas Nelson Community College
Hampton, Virginia 23670

NOMINATIONS COMMITTEE

Professor David Schedler, Chairman
Department of Mathematical Sciences
Virginia Commonwealth University
1015 West Main Street
Richmond, Virginia 23284
(804) 257-1301

Professor Arthur A. Karwath
Mathematics Department
U. S. N. A.
Annapolis, Maryland 21402
(301) 267-3603

Professor Reuben C. Drake
Mathematics Department
University of District of Columbia
4200 Connecticut Ave., N. W.
Washington, D. C. 20008
(202) 364-6000

Please submit nominations for treasurer and vice chairman/membership who is the newsletter editor to any member of the nominations committee.

Newsletter

Please submit any information to Dr. Caren L. Diefenderfer for January 1983 newsletter on or before January 1, 1983. Please submit in final form.

Dr. Caren L. Diefenderfer
Department of Mathematics
Hollins College
Hollins College, Virginia 24020

SPRING MEETING PRESENTATION

If you wish to give a talk at the Spring 1983 meeting, please submit abstract to Dr. Robert E. Lewand on or before February 26, 1983.

Dr. Robert E. Lewand
Mathematics Department
Dulaney Valley Road
Towson, Maryland 21204
(301) 337-6239

Areas of Interest around
Hampton, Virginia

As you make plans to attend the spring meeting, keep in mind that the following museums and centers are nearby Thomas Nelson Community College.

- 1) NASA Visitors Center (865-2855). The Section is trying to arrange tours of the center.
- 2) Mariners Museum (595-0368)
- 3) Hampton Coliseum (838-4203) Call in March to find out what the entertainment will be on April 16.
- 4) Ft. Monroe - Casemate Museum (727-3391)

In addition, Colonial Williamsburg, Williamsburg Pottery and Busch Gardens are within a 40 minute drive from Thomas Nelson. For reservations and information at Colonial Williamsburg call (800)-582-8976 and for information at Busch Gardens call (804)-220-2986. Finally, Jamestown and Virginia Beach are within an hour drive from our meeting site. We hope you will be able to enjoy some of these areas during the weekend of our April meeting.

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Please submit nominations for treasurer and vice chairman/membership (who is the newsletter editor) to any member of the nominations committee. We will elect these two officers at our Business Meeting on April 16.

1983 Short Courses at Salisbury State

The Section will be sponsoring two short courses at Salisbury State College, Salisbury, Maryland, in June of 1983. Make plans now to attend one of these courses and enjoy a week on the eastern shore.

- I. MICROCOMPUTER GRAPHICS June 13-17
Dr. G. J. Porter
University of Pennsylvania
Professor of Mathematics and Associate Dean for Computing
Faculty of Arts and Sciences

Dr. Porter has spoken and written widely on the applications of computing to the mathematics curriculum. He has presented a mini-course on microcomputer graphics at the MAA/AMS January 1983 Denver meeting. This workshop is for teachers who wish to incorporate computer graphics in their classroom presentations. The following schedule gives the topics that will be introduced.

Monday An Overview of Machine Capability: What do we need? What can we get?

The following schedule gives the topics that will be introduced.

Monday:	An Overview of Machine Capability: What do we Need? What can we get?
Tuesday	Homogeneous Coordinates and Their Use in Computer Graphics
Wednesday	Two Dimensional Representations of 3-Dimensional
Thursday	Curve Fitting: An Introduction to Splines and B-Splines
Friday	Computer Graphics in the Classroom

II. LINEAR ALGEBRA AND THE MICROCOMPUTER

Dr. Gareth Williams
Stetson University
Deland, Florida

Dr. Williams is the author of Computational Linear Algebra, which will soon appear in its third edition. He has also written several books on finite mathematics. One of Dr. Williams' chief interests is the educational use of the microcomputer.

Monday	The Language BASIC Matrices, Linear Equations and Applications
Tuesday	Markov Chain Models Models Involving Graph Theory Linear Programming
Wednesday	The Vector Space R^n and General Inner Product Spaces Geometry and Relativity
Thursday	Linear Mappings and Coordinate Transformations Differential Equations
Friday	Eigenvalues and Eigenvectors Applications in the Classroom

The total cost is \$185 per workshop, including meals and room(double occupancy). There is a deposit of \$85 per workshop refundable until 4 May 1983. For further information contact:

B. A. Fusaro
Department of Mathematical Sciences
Salisbury State College
Salisbury, Maryland 21801

An Article of Interest by Albert Shanker at United Federation of Teachers in New York

Report Documents Acute Shortage

Teachers Wanted in Math, Science

We live in an age when mountains of printed materials are produced on almost every conceivable subject, so it's refreshing to have a report on an important and complex issue which is short, clear and fairly comprehensive. The subject is the shortage of math and science teachers. Anyone who wants to understand the problem should read, "The Effects on Technology of a Vanishing Species: Mathematics and Science Teachers," a 30-page report of the proceedings of a symposium sponsored by the Department of Teacher Education, State University of New York at Albany.

The report points out that many people are not aware of the problem because for some years there have been stories of a teacher surplus. Because of these news reports, and the view that job prospects are poor, fewer college students are preparing to become teachers. But the complexity of the problem can be seen more clearly if we look at the State of Missouri between 1973 and 1978. There was a 32% surplus of English teachers, a 196% surplus of physical education teachers and a 132% surplus of social studies teachers—in terms of how many teachers were trained as against how many jobs were available in these subjects. At the same time, however, there was a 12% shortage in math and a 16% shortage in science.

A recent national survey divided the country into nine geographic areas and found that the area which included New York State had an extremely critical shortage of teachers (4.86 on a scale of 1 to 5) in teaching fields which include math and science.

Another survey found that 32% of the states faced a critical shortage of math teachers in 1980, and another 24% of the states had shortages, but not at the critical level.

Some additional, disturbing facts:

- There has been a 77% decline in the number of secondary math teachers prepared by schools of education in the last 10 years. One half of those prepared went into industry instead of teaching.

- In the Pacific Coast states, 84% of new teachers hired in math and science are thought to be unqualified. Nationwide 50% are believed to be unqualified.

- More than 60% of math supervisors across the country said finding certified math teachers was difficult and would get more difficult.

- In some large cities there was only one applicant in math for every 10 jobs open.

- The National Science Foundation reports that 16% of our elementary school teachers are not prepared to teach their students basic science and math.

Here in New York State, 43 school districts out of more than 700 said they had no problem getting math teachers. But 146 districts couldn't get the number of teachers they needed, while another 130 districts hired the number they needed, even though these teachers were below the quality they wanted.

Why the problem? The number of teachers graduating in these fields has declined sharply in New York. From 1975 to 1979, there was a 69% drop in new math teachers produced, a 43% drop in biology teachers, a 54% drop in chemistry teachers, a 50% drop in physics teachers and a 49% decline in new earth science teachers. What's worse is that the same percentage decreases are expected over the 1980-1985 period.

The report cites a number of reasons for the problem in addition to the fact that many have not gone into teaching because they think there is a surplus of teachers:

- Industry competes for students with training in math and science and offers much more attractive compensation.

- Many women who chose teaching as a career in the past because other opportunities were not open are now going into business, government and industry.

- "The attitude held by many concerning the job of teaching. Violence in the classroom, national concern with classroom discipline, teacher burnout, classroom stress, lack of community support, lack of student respect and confrontation with school administrators and Boards of Education are phrases commonly heard today. These problems help to discourage young people from entering the profession and add to the desire of the veteran teacher to leave the classroom. To many the rewards of teaching don't seem to be what they used to be and they are becoming aware of more attractive options."

That's the problem. The report gives a long list of needed responses. We'd better act now, for while we have enough scientists and engineers today—barely—we won't have them in the future unless we find the teachers to teach them.

The report is available for \$3.50 prepaid from The Institute for School Development, State University of New York at Albany, 135 Western Avenue, Husted 211, Albany, New York 12222.

Mr. Shanker's comments appear in this section every Sunday. Reader Correspondence is invited. Address your letters to Mr. Shanker at United Federation of Teachers, 206 Park Avenue South, New York, N.Y. 10010. ©1982 by Albert Shanker.