



NEWSLETTER

ROCKY MOUNTAIN SECTION

Edited by:

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Mines and Technology

FIRST ANNOUNCEMENT OF ANNUAL SPRING MEETING

The Annual Spring Meeting of the Rocky Mountain Section will be held at Mesa College in Grand Junction on April 25 and 26, 1986. The Program Co-Chairmen are Ed Hawkins and Carl Kerns, so if you have ideas for papers, workshops, panels or anything else, please contact them. The Call For Papers will come in January, but it is not too early to start thinking about what you would like to present.

STUDENT PAPERS

We will continue our tradition of having student papers presented at the Annual Meeting. Everyone that has been involved with these student papers will testify that it has been a very valuable experience for the students and the advisors. Because it has been difficult to get a student to stand before a group of unknown faculty members, it is important that you identify prospective students now, start encouraging them, and explain that this activity is important for their professional lives, whether that professional life is academic or industrial. Student talks can be on research projects, problems that they have solved, reports that they have written or even summer employment; usually the student papers are as good or better than some of the professional papers. The MAA thinks this program is so important that they allow us to grant up to three memberships in the MAA or, if the student is already a member, an MAA book of their choice. The students' papers are always enjoyable. Make your institution look good; sponsor a student!

SUMMER MEETING OF THE INTERNATIONAL CONGRESS OF MATHEMATICIANS

Because the International Congress of Mathematicians will be meeting at Berkeley in early August, there will be no Summer Meeting of the MAA or AMS, although there will be Board Meetings and some Committee meetings. All members are encouraged to attend this Congress; it is a rare opportunity to host it in the United States.

BRING A COLLEAGUE

If you plan to attend the Annual Meeting, bring a colleague or friend with you. Better yet, suggest that he or she present a paper. Most of us have a new teaching or research idea that we are eager to share with anybody who will listen. The Section will benefit from new faces on the program and at the meeting, and your colleague's professional reputation surely will not be affected by such a presentation.

Another untapped resource lies in the distinguished visitors to mathematics departments throughout our Section. If your campus is hosting a visiting professor who is willing to speak at our meeting, encourage them and let the Program Chair know.

FUTURE MEETINGS

1986 Meeting ----- Mesa College
1987 Meeting ----- University of Southern
Colorado
1988 Meeting ----- Joint Hosting by Metro
State and Univ of Colo
at Denver
1989 Meeting ----- Ft. Lewis??

SECTION OFFICERS

The Section Officers for the 1985-86 year are:

Chair ----- Stephen Bronn
University of Southern Colorado
Chair-Elect ----- Freida Holley
Metropolitan State
Program Co-Chairs ----- Ed Hawkins and Carl Kerns
Mesa College
Vice-Chair ----- Marie Ritten
National College
Governor ----- Gary Grefsrud
Ft. Lewis College
Secretary/Treasurer ----- David Ballew
South Dakota School of
Mines and Technology

Contact any of these persons with any problems, concerns or complaints.

NOMINATING COMMITTEE

This year we will elect a Chair-Elect, Vice-Chair (two year term) and a Program Chair. The Nominating Committee is Ed Hawkins (Chair) of Mesa College, Richard Gibbs of Ft. Lewis College and Janet Nichols of the University of Southern Colorado. They would appreciate hearing from those interested in suggesting someone or interested in the office for themselves.

POINTS TO PONDER

"Transcendental numbers occupy a position in the field of real or complex numbers much like that of insects in the kingdom of animals. Everybody knows they are, by a large margin, the most abundant class, but few know more than one or two of them by name."
-- D. R. Morrison

"Editors are, in my opinion, a low form of life, inferior to the viruses and only slightly above academic deans."
-- D. Causey

GOVERNOR'S REPORT

I will have a complete report in a later Newsletter after the Governor's meeting in January. Those of you who will be attending the Annual Meeting of the MAA in New Orleans in January will vote on a number of proposed amendments to the By-Laws. These proposed amendments were discussed by the Governors at the Summer Meeting in Laramie and are recommended for approval. All of the proposed amendments are somewhat routine changes except for the proposed change to Article IV, Section 2 (Procedures for General Elections). At present, a Nominating Committee, appointed by the President, submits a list of at least five candidates for President-Elect and at least three candidates for each other office to the membership of the MAA on a primary ballot. The Committee then selects one candidate from among the three candidates receiving the most votes for President-Elect and two candidates, one being the person receiving the most votes, for all other offices to be voted upon by the membership on a final ballot. In reality, the Committee selects the President-Elect. In the proposed amendment, there will be only one vote by the membership. Each voting member may vote for as many candidates as she or he wishes (for each office). For each office, the Nominating Committee shall declare elected the person having received the most votes and been determined by the Committee to be willing and able to serve. While this method of voting (approval voting) was discussed at length by the Governors and has both advantages and disadvantages, it at least provides for a more democratic method of electing the President-Elect than the method used at present.

NEWS ITEMS FROM THE CAMPUSES

WESTERN STATE COLLEGE -- Glenn Calkins is attending Oklahoma State University on a sabbatical and Gale Nash is the New Department Head.

UNIVERSITY OF SOUTHERN COLORADO -- The Mathematics Major has been revitalized in a successful attempt to return Mathematics to the Math major. Every now and then we win one.

UNIVERSITY OF WYOMING -- New faculty members are: Sum Chow, Jin-Yuan Liu, Lynne Ipin and Shagi-Di Shih. Visiting faculty are: Magne Espedal, David Siegel and Hanoch Neishlos. (The Editor assumes that the Section members at Wyoming will bring as many of these persons as possible to the April Meeting!) Congratulations to the following on their promotions: Melfried Olson (to Full) and Verne Verineau (to Emeritus). Gail Young is an Adjunct Professor. The following are on sabbatical: Joseph Martin to the University of Wisconsin, Robert Mena (Spring '86), and John Rowland to IBM. Ben Roth is the Acting Department Head through August '86.

ADAMS STATE -- J. Steven Fant has been named as a new Instructor. The name of the Department has been changed to the Department of Mathematics and Computer Science. We have acquired a new computing system consisting of AT&T 3b2/300 super-micros driving a 10 MBPS Ethernet over optical fiber and coaxial cable and using AT&T 6300 PCs at intelligent nodes. The system supports UNIX, MS/DOS and a wide variety of languages and productivity software. Ron Loser is the new Department Chair.

COLORADO STATE UNIVERSITY -- Jurgen Scheurle and Kurt Georg have been named as new Associate Professors. Darel Hardy was promoted to Full Professor.

CASPER COLLEGE -- Debra Swedberg from the University of Wyoming is the newest member of the Department. Clifford Pomery and Treva Payne will be on sabbaticals for the Spring of 1986.

SOUTH DAKOTA SCHOOL OF MINES AND TECHNOLOGY -- Donna Johnson and Laura Geary have been appointed as Instructors. Professor Will Hahn of Wittenberg University (Ohio) is a Visiting Professor (yes, he will be at Mesa). Ed Corwin (ETA Systems) and Julie Dahl (University of Montana) are on Sabbaticals. The School will be hosting the 1986 Small College Computing Symposium -- Dale Rognlie, Chairman. Karen Whitehead was promoted to Associate Professor and is the (part-time) Assistant Vice-President for Academic Computing. Dean Benson visited this past summer and sends his love to all of you.

METROPOLITAN STATE COLLEGE -- New faculty are: Patricia Montague, Associate Professor; Thomas Kelley and James Loats both Assistant Professors. George Donovan will be on Sabbatical during the Spring of '86 at the University of Denver and Armando Gingras is the new Department Chairman. A new BS degree in Computer Science is very near final approval and is slated for implementation in September, 1986.

UNIVERSITY OF COLORADO/BOULDER -- The Department has added Associate Professor Anton Good and has the following as Visiting faculty: Gunter Dufner, Andrzej Hulanicki, G. McNulty, N. McNulty, Duggirala Rao, Riccardo Ricci and Roger Temam. Wolfgang Thron and Aboul Zirakzadeh were awarded Emeritus status in June of 1985. R. Kent Goodrich, John Hodges, Richard Holley and Alfred Lundell will be on Sabbatical for one semester (doing research locally). Lawrence W. Baggett is the Department Chair.

THE COLORADO COLLEGE -- With the help of a Quill Grant, we are currently redesigning the lower division curriculum to include more discrete mathematics (combinatorics, graph theory, etc.) In addition, we are expanding our course offerings in Computer Science. Jim Henderson (Topology - Texas A&M) and Kathy Merrill (Analysis University of Washington) have been hired as new Assistant Professors. (Steven Janke and Fred Tinsley were tenured and promoted to Associate Professor; Dave Roeder gained Full Professor. Robin Wilson from the Open University will be visiting during April and May of 1986.

DID I HEAR THAT RIGHT?

"...All people over 30 should be removed from responsible positions and allowed to do only harmless things like doing research (particularly in the Social Sciences), teaching at a university, designing furniture, pumping gas, and mouth painting. One can never tell when these people will run amuck -- Ken Pivnick, Quebec, Canada.

LONG RANGE PLANNING

The MAA is in the midst of a Long Range Planning Study and preliminary efforts are well under way. The Section will be asked to consider a Long Range Plan this Spring. At the Laramie Meeting, Marcia Sward, Associate Director of the MAA, presented a summary of approximately 200 responses to 400 questionnaires mailed to selected members of the Association. Areas deemed important were:

Recruitment and Guidance
of Students

Preparation and Supply of
Precollege Teachers

Public Understanding of
Mathematics

MAA Organizational Issues

Mathematics Curricula

Collegiate Faculty Issues

Exposition of Mathematics

Financial Resources for Mathematics
Education

Membership in the MAA

Intersociety Cooperation

If you have thoughts on these issues, contact your Governor, Gary Grefsrud; he will be happy to report your concerns to the Long Range Committee.

WHAT BIOLOGISTS DO

"Mosquitoes were chilled for 100 seconds ... and decapitated, the wound being sealed with paraffin wax. About one fourth of all donors and recipients (of Hemolymph) failed to survive treatment. It was felt that mosquitoes (*Ae. aegypti*) are not sufficiently robust to withstand such treatment."

Reproduced by permission, *J. Exp. Biol.*, 1958, 35/3, 685
Author -- J. D. Gillet

THINGS TO DO WITH A DEAD COMPUTER

Reproduced by permission from the Computer Hater's Handbook

1. Use it as a milking stool.
2. Raise bees in it.
3. Keep goldfish in it.
4. Use it as an ant farm.
5. Let your Chihuahua live in it.
6. Use it as a bird house.
7. Use it for a highway cone.
8. Fill it with kitty litter and let the cat use it.
9. Burn kerosene in it for portable heat.
11. Wear it as a brooch.
10. Use it as a mailbox.
13. Take it for a walk on a leash.
12. Fill it with birdseed and hang it in a tree.
15. Use it as a footstool.
14. Wear it as a diving helmet.
17. Leave it on a park bench.
16. Sell it to aborigines as an idol.

COMMUNICATION OF ABSTRACT MATHEMATICS TO THE STUDENT BY THOUGHT, TEXT AND TEACHER

by Bob Scott, Ashland Community College

In looking at the thought patterns of the students in our classes, we have to realize that they do not think as we do. Research at Purdue suggests that 90% of the population thinks by association with pictures, 9% thinks through verbalization, and 1% thinks by use of the abstract. If we consider that we, as teachers of mathematics have likely made the change from pictures to verbalization or abstract, and present our subject in this fashion, we should not be surprised that most of our students do not follow what we are saying. It is important that we appeal to the students' natural inclination to "picture" the information in our attempts to teach mathematics. It is necessary that we produce diagrams or pictures whenever possible. It is also important that we verbalize basic properties of mathematics whenever possible. Statements like "the square root of a product is the product of the square roots", "the difference of two squares is the product of the sum and difference of their square roots" are just two of the possible opportunities we have to verbalize what we are trying to teach. If we can "picture" the concept of absolute value, we will have a better chance of our students being able to do equations that involve absolute value. Continually ask yourself "How do I think?" In addition, realize that you possess much greater information about patterns of thought than the student.

Wouldn't it be wonderful if the students could also read the text on their own? We each have probably had a situation where we had to read the text in order to follow what was being done. We have survived the course through being able to read the text. You might consider applying some of the readability tests to the next text you consider for adoption.

Do you prepare and present your lectures organized in the same way as the text presents the material, or do you find it unnecessary and just shoot from the hip? Perhaps you give them the shotgun approach where the information is just scattered about the board. We all have experienced the instructor who lectures from private notes from another text while we are trying to determine where this material being covered is actually located in the text we had to buy.

In trying to teach, examine your own experiences in the learning of mathematics. Remember, though, that you may be different than your students in the way you think and perceive things. Relate the subject to that which came before. Perhaps you might emphasize the historical development of the concepts and bring in some of the personalities and names associated with the material. Examine your own experiences in the teaching of mathematics. Why do you teach? How do you teach? Do you style your teaching style after some teacher you admired? Do you prepare so thoroughly that it is slick or so poorly that you are so disorganized that the student has difficulty following what you are doing? Do you do as the Government and do all of the wrong ways first?

AMAZING!

There are approximately π seconds in a nanocentury.
The space shuttle gets 4 inches to the gallon.
Electricity travels about a foot in copper wire in a nanosecond.

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Students

A Dilation of Pupils
A Plentitude of Freshmen
A Platitude of Sophomores
A Fortitude of Graduate Students
An Avunculus of Alumni
A Clutch of Pre-meds
A Herd of Pre-Vets
An Acne of Adolescents

Professors

A Tenure of Associate Professors
An Entrenchment of Full Professors

An Ex Cathedra of Professors Emeriti
A Drift of Lecturers
A Brood of Researchers
A Wrangle of Philosophers

Academic Areas

A Doctrine of Doctors
An Escheat of Lawyers
A Liter of Chemists
A Family of Biologists
A Nucleus of Physicists
A Recession of Economists
An Era of Historians

An Essay of English Teachers
A Case of Sociologists
A Column of Accountants
A Iamb of Poets

Administrators

An Execution of Officers
A Bored of Trustees
A Penury of Budgeters
A Dilemma of Deans
A Frown of Advisers