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ROCKY MOUNTAIN SECTION OF THE MATHEMATICAL ASSOCIATION OF AMERICA
Officers for 1994-1995

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Pueblo, Colorado 81001-4990

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Chairperson-Elect: Edwin Hawkins, Mesa State College

Grand Junction, Colorado, 81501

Vice-Chairperson: Patricia Hauss, Arapahoe Community College,

5900 S. Sante Fe Dr., Littleton, CO 80221

Past Chair: Tom Kelley, Metropolitan State College of Denver

Box 38 Metropolitan State College, P O Box 173362, Denver, Colorado 80217-3362

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Secretary/Treasurer: Bill Ramaley, Fort Lewis College

Durango, CO 81301

(303) 247-7268

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Department of Mathematics

University of Southern Colorado, Pueblo, Colorado, 81001-4901

SPRING MEETING of ROCKY MOUNTAIN SECTION

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University of Southern Colorado, Pueblo, Colorado

April 21-22, 1995

This year's Section nominating committee consists of:

Gail Gliner, Metropolitan State College, PO 173362, Denver, CO 80217

Cliff Britton, Mesa State College, Grand Junction, CO 81502

[(303) 241-5321]

Janet Burgoyne, South Dakota School of Mines and Technology, Rapid City, SD, 57701

For this meeting the committee needs to nominate a Chair-Elect and Vice-Chair. Please feel free to convey recommendations to the committee.

Rocky Mountain Section Report-1994 Meeting

The annual meeting of the Rocky Mountain Section was held April 15-16, 1994, on the campus of the South Dakota School of Mines and Technology in Rapid City. The program co-chairs were Don Teets and Janet Burgoyne. There were approximately 70 registrants.

The keynote address on Saturday was "What Have Elliptic Curves Got to Do With it?", given by Fernando Gouvea, of Colby College. He also gave the banquet address: "A Marvelous Proof."

The program consisted of the following:

A welcoming by President Gowen, South Dakota School of Mines and Technology

Panel – **"The New NCTM and MAA Assessment Standards and their Implications for Mathematics Higher Education"**
Chaired by Tino Mendez, Metropolitan State College of Denver

Workshop – **The TI-85**
Tom Kelley, Metropolitan State College of Denver

Contributed talks –

- The Greatest Deviation Correlation Coefficient, R_g .*
Steve Rummel, Black Hills State University
- Geometric Transformation in Image Restoration*
John Weiss, South Dakota School of Mines and Technology
- A Cubic Spline Based Lack-of-Fit Test for Regression Models*
Rianto Djojosugito, South Dakota School of Mines and Technology
- An Apology to G. H. Hardy*
Peter Morris, University of Wyoming
- Clustering Algorithms for Pattern Classification*
Karen Whitehead, South Dakota School of Mines and Technology
- Control of Coupled Map Lattices*
John Starrett, Metropolitan State College of Denver
- A Comparison of Newton's and Muller's Methods in the Complex Plane*
Amy Vander Vorste, South Dakota School of Mines and Technology
- Applications: Ready or Not, Here They Come*
Bill Ramaley, Fort Lewis College
- Permutation Puzzles and Applied Algebra*
Leslie Shader, University of Wyoming
- Pitfalls In Graphing With a Graphing Calculator*
David Metz, Western Wyoming Community College
- Ancient Chinese Secrets*
Beau Grande, University of Wyoming
- The Solution Manifold of the Functional Differential Equation $f'(x) = f(x+c) - f(x-c)$*
Timothy Moreland, University of Denver
- Discrete vs. Continuous Chaotic Systems*
Ed Corwin, South Dakota School of Mines and Technology
- Mathematica in the Curriculum*
George Donovan, Metropolitan State College of Denver
- How To Assess Student's Understanding of Mathematical Notions*
Igor Szczyrba, University of Northern Colorado
- Sophie Germain and Fermat's Last Theorem*
Ruth Rebecca Struik, University of Colorado, Boulder

How Should I Count the Ways?

Janet H. Barrett, University of Southern Colorado

Instructional Delights and Dilemmas: Our New Math for Prospective Elementary Teachers

Jim Loats, Metropolitan State College of Denver

Help for the Beleaguered Traveling Salesman

George Heine, University of Colorado at Denver

Colorado State Wide Systemic Initiative and Its Implications for Mathematics Departments

Larry Johnson, Metropolitan State College of Denver

Studying Math Students Studying in Groups

Deborah Rummel, Black Hills State University

William C. Ramaley, Sec'y/Treas

Rocky Mountain Section MAA

Minutes of Annual Business Meeting, Rocky Mountain Section, MAA, April 16, 1994

Tom Kelley, Chair of the section, convened the meeting at 8:10

The minutes of the 1993 meeting at Colorado School of Mines were accepted as circulated.

Treasurer Bill Ramaley presented a summary of the finances of the section. At the time of the meeting, the section had \$3486.22 in savings and \$313.23 in a checking account. The report was approved.

It was announced that the 1995 meeting would be held at the University of Southern Colorado and the 1996 meeting at Mesa State College.

The Nominating Committee put forth Darel Hardy, Colorado State University and Edwin Hawkins, Mesa State College, for the position of Chairperson-Elect. Ed Hawkins was elected.

The Section gave A. Duane Porter, University of Wyoming, our section's award for Distinguished Teacher. His nomination for the national award was forwarded to the national office.

Following our actions at the 1993 meeting, we added the 1994 top scorer on the Putnam exam to our list of free MAA student memberships given to students presenting papers at this section meeting. Certificates will be sent by Bill Bosch, of the University of Northern Colorado, to recognize students scoring 135 or better on the American High School Mathematics Examination. There were nine such in Colorado and those in Wyoming or SW South Dakota will be determined by him.

Governor Tino Mendez urged all members to have their departments buy subscriptions to the *Horizons* magazine sponsored by the MAA.

After some discussion, it was suggested that Dave Carlson and Tino Mendez work to have all awardees of mathematical honors, both students and faculty, recognized by the Governor of Colorado. At the present time, only the AHSME students attend a reception in Denver.

Chair Tom Kelley is organizing a network of faculty representatives. At the meeting the following agreed to serve: Karen Whitehead (SDSMT), Rebecca Struik (U of Colo., Boulder) , Bill Bosch (UNC), Duane Porter (UW), and Al Skilman (Casper CC) .

Tino Mendez introduced the following motion, rewritten in a form incorporating several friendly amendment.

The Rocky Mountain Section of the MAA shall expand the Executive Committee to include

one member of the NCTM from each of Wyoming, Colorado, and the part of South Dakota which lies in the section. These NCTM members are to be nominated by their respective state NCTM boards. At any meeting of the Executive Committee, only the member of the NCTM representing the state in which the section meeting is being held that academic year shall have a vote.

The motion won unanimous approval.

Jim Loats reported on a revival of the section lecture series. There is expertise all over Colorado and it should be available to the public. One means for doing this is to prepare press kits, with names and addresses of those whom a newspaper or other media can contact. Also, there needs to be prepared a roster of those willing to give talks. Preparing such materials involves modest amounts of money, but there is not mechanism in place for such awards.

Tino Mendez pointed out the need for grants involving curricula reform.

After general discussion it was agreed that the Executive Committee should prepare guidelines for grant requests.

In closing the meeting, the Section voted to thank the South Dakota School of Mines and Technology its kind hospitality. Appreciation was also extended to Don Teets and Janet Burgoyne for their outstanding organization of the meetings.

Officers for 1994-95 are — — Past Chair: Tom Kelley, Metropolitan State College of Denver

Chair: Janet Barnett, University of Southern Colorado

Chair Elect: Edwin Hawkins, Mesa State College

Vice Chair: Patricia Hauss, Arapahoe Community College (term ends in 1995)

Secretary/ Treasurer: Bill Ramaley, Fort Lewis College (terms ends in 1996)

Governor of Section: C. G. Mendez Metropolitan State College of Denver (terms ends in 1996)

Acting Program Chair: Janet Barnett, University of Southern Colorado

Respectively submitted, William C. Ramaley, Secretary/Treasurer

Mathematical Association of America, Rocky Mountain Section

News from Departments

University of Northern Colorado, Richard Grassl, Chair

Larry Lesser, PhD in mathematics education from University of Texas at Austin, joins the department.

Bob Mayes promoted to Associate Professor

Professors **Blubaugh**, **Grassl**, **Diaz**, **Bosch** and a mentor teacher, **Paula Patten** were awarded a \$577,000 NSF teacher enhancement grant for the summers of 1995-96-97

John Petherick, student, ranked 65th in the nation on the December, 1993 Putnam Competition.

Over 1000 secondary students, grades 7-12, took the first round of the UNC Mathematics Contest.

All sections of College Algebra will use either Derive or a graphing calculator in Spring, 1995

United States Air Force Academy, Bill Kiele, Deputy Head for Academics

New faculty are **James Wisnowski**, **Keith Dale**, **David Pendergraft**, **Scott Ryan**,

Dr. Michele Gaudrault, **Vanda Cross**, **Cynthia Wells**, **James Lee**, **Won Jin Chang**,

Robert Gilchrist, and **Dr. Judy Holdener**

Promoted to Associate Professor are **Carl Bodenschatz** and **John Ansink**

Lt. Col. Ron Berdine, who was Acting Head during Jan-June 1994 has taken military retirement.

Inertial Confinement Fusion Research is being done for assorted agencies.

Student teams are consulting with downtown companies, using Decision Analysis techniques, to present reports at the next ORSA/TIMS meeting.

Work is progressing on a possible NSF grant on curriculum integration.

The USAF is currently in the process of hiring a new civilian assistant professor for AY 95-96. The Academy normally changes about 30% of its faculty each year.

University of Southern Colorado, Paul Chacon, Chair

New visiting faculty are **Gwen Tamayo**, from the State University of New York at Oswego, where she taught statistics, and **John Walker**, who is currently finishing a PhD at Colorado State Univ.

Dr. Melvin C. Withnell retired after twenty-seven years at USC. Co-author of a text, *Mathematics for Elementary Teachers*, his focus has been on teacher education.

Dr. David L. Philips retired after twenty-three years at USC. He authored or co-authored seventeen research papers. He founded the Swanson Competition in 1978 and directed it for fifteen years. In addition he coached the USC Putnam Competition team for many years.

In January, Professor **Janet Nichols** became the USC facilitator of the CONNECT Collaborative of the Statewide Systemic Initiative in Science and Mathematics, funded by the NSF.

Dr. Roger Johnson returned from two years of teaching and research at U. of Arizona.

Dr. John Gill is managing editor of *Communications in the Analytic Theory of Continued Fractions*. The book, *Master of Rock*, has been recently reprinted. It chronicles John's exploits as a rock climber.

Dr. Fernando Burgos has left for a position at the university in Merida, Yucatan.

Recent papers have been authored by **Dr. James Derr**, **Dr. Gilbert Orr**, and **Dr. Ray Tennant**.

At present the department is engaged in a search for two new faculty.

1995 Rocky Mountain Section Award
Distinguished College or University Teaching of Mathematics

Nominations for the fourth (1995) Rocky Mountain Section Award for Distinguished College or University Teaching of Mathematics are now being accepted. The Rocky Mountain Section Selection Committee will choose one of the nominees for the Section Award. The awardee will be honored at the Spring 1995 meeting of the Section and will be widely recognized and acknowledged within the Section. The awardee will also be the official Section candidate for the pool of Section awardees from which the national recipients of the MAA Awardees for Distinguished College or University Teaching of Mathematics will be selected except that one of national winner may be selected from another source. There will be at most three national awardees, each of whom will be honored at the national MAA meeting in January 1996 and receive a \$1,000 check and a certificate.

Anyone is entitled to make a nomination. Self-nomination is not permitted. A previous nominee for this award who did not become a Section awardee can be nominated again.

Eligibility

– College or university teachers assigned at least halftime during the academic year to teaching a mathematical science in a public or private college or university (from two-year college teaching through teaching at the Ph. D. level) in the United States or Canada. Those on approved leave (sabbatical or other) during the academic year in which they are nominated qualify if they fulfilled the requirement in the previous year.

– At least five years teaching experience in a mathematical science.

– Membership in the Mathematical Association of America

Guidelines for Nomination

The nominees should –

– be widely recognized as extraordinarily successful in their teaching. The word “teaching” is to be interpreted in its broadest sense, not necessarily limited to classroom teaching. It may include such activities as preparing students for mathematical competitions at the college level, for example, the Putnam Prize Competition or the Mathematical Contest in Modeling, or attracting students to become majors in a mathematical science or to become Ph. D. candidates.

- have teaching effectiveness that can be documented
- have had influence in their teaching beyond their own institutions
- foster curiosity and generate excitement about mathematics in their students.

The idea of an “influence beyond their own institution” can be manifested in many forms, including demonstrated lasting impact on alumni, influence on the profession through curricular revisions in college mathematics teaching with national impact, influential innovative books on the teaching of mathematics, etc.

Nominations for the Award for Distinguished College or University Teaching of Mathematics must be submitted on the enclosed “Nomination Form.” Please follow the instructions on that form precisely to assure uniformity in the selection process both at the Section and the national levels.

Please send the nomination packet to:

Professor William C. Ramaley, Secretary
Rocky Mountain Section
Math. Dept.
Fort Lewis College
Durango, Colorado 81301

so as to be received no later than Jan 6, 1995

The Section Selection Committee will select the Section awardee during January and communicate its selection to the national selection committee no later than February 1 so that the national committee can then make its selections.

We look forward to your participation in this exciting MAA venture of taking substantive action to honor extraordinarily successful teaching. We want to see such teaching recognized at all post-secondary school levels. We depend on you to help us identify those who merit such recognition.

Special Request!!

The University of Southern Colorado is establishing a file of high school contest materials. If you wish to share yours with them, please send copies to –

Janet Barnett,
Department of Mathematics
University of Southern Colorado
Pueblo, Colorado 81001-4990

MATHEMATICAL ASSOCIATION OF AMERICA
AWARDS FOR DISTINGUISHED COLLEGE OR UNIVERSITY TEACHING OF MATHEMATICS

Nomination Form
(Please Type)

Name of Nominee (Last name first)_____

Name of College or University_____

College or University Address_____

College Telephone (____)_____ Home Telephone (____)_____

Number of years of teaching experience in a mathematical science_____

Has the nominee taught at least half time in a mathematical science for the
past three years (not counting a sabbatical period)? _____

Activities related to teaching_____

Publications related to teaching if any (List no more than five)_____

Membership and significant activities in relevant professional
organizations_____

Previous awards for teaching, if any_____

Additional relevant information_____

Name of Nominator (last name first)_____

Address of Nominator_____

Signature

1995 Spring Meeting Update

Plans for the 1995 Joint MAA_COLOMATYC-CCTM Spring Meeting are moving ahead quickly. Thanks to all of you who sent in suggestions. The program committee at the University of Southern Colorado, together with Tom Hibbs of the CCTM and Patricia Hauss of COLOMATYC, have put together the following tentative schedule for the scientific program.

The meeting will open at 1:00 p.m. on Friday, April 21, with an invited address by Professor Duane Porter, the 1994 MAA Rocky Mountain Section Distinguished Teaching Award recipient. Professor Porter's address will be followed by a contributed paper session. Concurrently with the MAA contributed paper session, COLOMATYC will sponsor the following three sessions:

"Data Analysis in an Introductory Statistics Course"

Presenter: Patrick Enright, Arapahoe Community College

"Some Approaches to Teaching Calculus II"

Organizers: Jeff Berg & Patricia Hauss, Arapahoe Community College

"Proposed Changes and Additions to the Core Curriculum"

Organizer: Patricia Hauss, Arapahoe Community College

Professor Carl Pomerance of the University of Georgia will close Friday's scientific program with his Polya Lecture at 4 p.m.

Following the business meeting on Saturday, April 22, Professor Martha Siegel of Towson State College in Maryland will deliver the keynote address at 9:00 a.m. Parallel sessions of the three professional organizations will fill the rest of the morning. In particular, sessions on the theme of "Assessment" are planned by all three organizations. There will also be a joint K-12, two-year college and four-year college panel discussion on a topic yet to be announced. In order to provide undergraduate students with the valuable experience of presenting mathematics, one of the MAA Saturday sessions will be devoted to student papers; please encourage your students to attend and present their work.

Although the official MAA and COLOMATYC meetings will close at 12:30 p.m., the CCTM will continue with sessions on "Standards Based Education in Mathematics" in the afternoon; all meeting participants are invited to participate.

The social program includes a Friday reception following Professor Pomerance's lecture, and the traditional Friday banquet with an address delivered by Professor Siegel. The banquet will be a buffet at a price of \$15.25 per person. Due to the full day of CCTM activities, there will also be a luncheon on Saturday at a price of \$7.65 per person. A hotel list is included in this newsletter for your convenience in planning expenses; an early registration form will be sent out in early Spring. The pre-registration fee is set at \$6 (\$2 for students); on-site registration is \$10.

FIRST CALL FOR PAPERS

The MAA Program Committee is currently seeking proposals for talks to be included in the contributed paper sessions. Please note that contributed talks will be allotted 15-20 minutes in the program. Papers on the topic of "Assessment" are especially invited. Student papers are also highly encouraged.

MAA PROGRAM COMMITTEE
UNIVERSITY OF SOUTHERN COLORADO
DEPARTMENT OF MATHEMATICS
2200 BONFORTE BOULEVARD
PUEBLO, COLORADO 81001-4901

All abstracts will be acknowledged; please include the address of your institution and e-mail address to facilitate this effort. You may also submit your proposal via e-mail to jbarnett@starburst.uscolo.edu. First consideration will be given to proposals received by February 28, 1995.

We're looking forward to seeing you all in Pueblo!

Janet Heine Barnett, Bruce Lundberg, Janet Nichols

Mathematics Awareness Week 1995

"Mathematics and Symmetry"

April 23 - 29 1995

Mark your calendars now and plan to observe Mathematics Awareness Week in your area, institution, or organization. With the theme of MATHEMATICS AND SYMMETRY, MAW (Mathematics Awareness Week) provides an excellent opportunity to celebrate the beauty and complexity of the mathematical sciences. Please do your part to promote public awareness of mathematics from Sunday, 23 April - Saturday, 29 April 1995.

HOTEL INFORMATION for MAA SECTION MEETING

April 21-22, 1995

University of Southern Colorado

- | | | | |
|----|---|--|--------------------------|
| 1. | Comfort Inn
4645 I25 North, Pueblo
(719) 542-6868 | Single: \$40.00

(Includes Continental Breakfast) | Double: \$45.00 |
| 2. | Days Inn
4201 N Elizabeth, Pueblo
(719) 543-8031 | Single: \$46.00
(Includes Continental Breakfast) | Double: \$53.00 |
| 3. | Hampton Inn Hotel
4703 N. I-25, Pueblo
(719) 544-4700; (800) 972-0165 | Room (for up to 4 people): \$57.00
(Includes Continental Breakfast) | |
| 4. | Holiday Inn
4001 N. Elizabeth, Pueblo
(719) 543-8050 | Room (for up to 4 people): \$55.00
(Complementary Coffee and Muffins) | |
| 5. | Hotel Pueblo
2001 N. Hudson, Pueblo
(719) 542-3750; (800) 365-4380 | Single: \$35.00 | Double: \$40.00 |
| 6. | Motel 6
4103 N. Elizabeth, Pueblo
(719) 543-6221 | Single: \$26.99 | Double: \$32.99 |
| 7. | Pueblo Motor Inn
800 W. Hwy. 50, Pueblo
(719) 543-6820 | Single: \$28.00 | Double: \$36.00 |
| 8. | Super 8 Motel
1100 W. Hwy. 50, Pueblo
(719) 545-4104; (800) 800-8000 | Single: \$30.50
(State Rates) | Double (2 Beds): \$35.00 |

(Notes: It is recommended that you make your reservations as soon as possible (January if possible) to insure availability of rooms. Indicate that you are with the MAA Conference at USC when making reservations. Colorado hotel tax is 11.8%. The above hotels are approximately 2 miles from campus.)