

Dear MAA Rocky Mountain Section Members,

We're well under way in the planning for our Spring Section Meeting, which will be held April 15-16, 1994 at the South Dakota School of Mines and Technology in Rapid City. We know it's a long way to travel for many of you, but we hope to see you here in spite of that.

Our keynote speaker will be Professor Fernando Gouvêa of Colby College. He will be speaking to us about the recent developments in the proof of Fermat's Last Theorem. You may have seen an article on FLT co-authored by Prof. Gouvêa in the August 1993 issue of *Focus*; he will apparently have an article on the theorem in an upcoming issue of the *American Mathematical Monthly* as well. We look forward to having him here.

THIS IS THE FIRST CALL FOR PAPERS for the Spring meeting. If you are interested in making a presentation at this meeting, **PLEASE LET US KNOW AS SOON AS POSSIBLE**. Send the title and an abstract of your talk to the program co-chairs, Don Teets and Janet Burgoyne, at

South Dakota School of Mines
Department of Mathematics
Rapid City, South Dakota 57701-3995,

or via e-mail to dteets@silver.sdsmt.edu. The tradition is to run parallel sessions of twenty minute talks; if anyone is interested in giving a longer presentation we will try to accommodate you. Please encourage students to participate by giving talks as well. There is no better place for students to learn this valuable skill! Also, if anyone has ideas for panel discussions or would like to participate in such a discussion, let us know soon.

We will be sending out registration materials and a preliminary program (as well as a second call for papers!) in late February, and hope to send out final programs sometime in March. Please help us stick to this schedule by sending us your responses in a timely manner. Thanks!

Rocky Mountain Section Report-1993 Meeting

The annual meeting of the Rocky Mountain Section was held April 2-3, 1993, on the campus of the Colorado School of Mines in Golden. The program co-chairs were Ardel J. Boes and Willy A. Hereman. There were approximately 140 registrants.

The keynote address was "Technology in mathematics instruction" by John W. Kenelly of the MAA. Dr. Kenelly also gave the banquet address: "New Moves in Assessment and Educational Accountability." The program consisted of the following:

Panels on: Use of Technology and Cooperative Projects in the Classroom

Mathematica in math courses: Student perspectives

Workshop: Workshop on Interactive Mathematica Texts

William Emerson, Metropolitan State College of Denver

Special session in honor of John H. Hodges of the University of Colorado,

organized by A. Duane Porter of the University of Wyoming

Contributed talks:

If "Matrix " means "Womb", Who is the Baby? And Who is the Father?

Janet H. Barrett, University of Southern Colorado

Calculus with Mathematica at Colorado School of Mines, Barbara Bath and Frank Hagin,
Colorado School of Mines

The Driven Pendulum: Theory, Practice and Implications for Control,

Elizabeth Bradley, University of Colorado, Boulder

The Good Bug Problem, David Carlson, Colorado Department of Agriculture

A Development of a Polynomial ADT, Jose Cisneros, Metropolitan State College of Denver

A Comprehensive Game Plan for Calculus Reform. Are we close yet?

Carl Crockett, United States Air Force Academy

The Differential and Matrix Groups, W. Harold Davenport, Mesa State College

The Mathematics of Optics, as Viewed by René Descartes,

Nicolas De Toustain, University of Colorado, Boulder

Computer Simulation-A Capstone Course for Math Majors,

George S. Donovan, Metropolitan State College of Denver

A Case Study Course in Mathematics for Non-science Students,

William S. Dorn and James L. LaVita, University of Denver

A Ring of Lebesgue Integrable Functions, Donald P. Elliot, University of Northern Colorado

Remarks on the Matrix Equation $X^e = B$ over a Finite Field,

John H. Hodges, University of Colorado, Boulder

Some Mathematica Mistakes? Thomas Kelley, Metropolitan State College of Denver

Advanced Programming on the HP-48sx,

Warren W. Kokko, Arapahoe Community College

The Use of Writing in Teaching Mathematics, Steven Leth, University of Northern Colorado

Bachelier's Theory of Speculation, C. G. Mendez, Metropolitan State College of Denver

The Function Minute: An Effort to Teach Basic Function Concepts More Effectively,

Jim Olsen, University of Northern Colorado

J. H. Hodges and Matrix Equations, A. Duane Porter, University of Wyoming

Stable Qualitatively Correct Interpolants for Accurate Data,

Steven Pruess, Colorado School of Mines

Odd Neighbors and Odd Neighborhoods, Leslie E. Shader, University of Wyoming

Why is Bach Out of Tune? John Starrett, Metropolitan State College of Denver

What Should you Know about Continuum and how to Teach about it?

Igor Szczyrba, University of Northern Colorado

Computer Algebra Systems and Visualization in Mathematics,

Louis A. Talman, Metropolitan State College of Denver

Chaos for the Uninitiated, Don Teets, South Dakota School of Mines and Technology

Minutes of Annual Business Meeting, Rocky Mountain Section, MAA, April 3, 1993

Gary Grefsrud, Chair of the section, convened the meeting at 8:10 in the Metal Hall of the Green Center at the Colorado School of Mines

The minutes of the 1992 meeting at Colorado College 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 \$3381.46 in savings and \$1109.35 in a checking account with about \$600 in known debts and expenses incurred in connection with the ongoing meeting as yet unquantified.

The 1994 meeting was announced to be held at South Dakota School of Mines and Technology in Rapid City, South Dakota.

The Nominating Committee put forth Janet Barnett, University of Southern Colorado, and Edwin Hawkins, Mesa State College, for the position of Chairperson-Elect. Janet Barnett was elected. The Committee put forth Gladwin Bartel, Otero Community College, and Patricia Hauss, Arapahoe Community College, for the position of Vice-Chair. Patricia Hauss was elected. Finally, the Committee renominated Bill Ramaley to continue as Secretary/Treasurer. He was elected by acclamation.

Governor Hodges congratulated the section on its support for the Greater MAA Building Fund. A plaque honoring Burton W. Jones, University of Colorado (Boulder) will be placed in the lobby of the MAA building in recognition of our section's members contribution of over \$3000.

The Section gave Gerald Diaz, Air Force Academy, our section's award for Distinguished Teacher. His nomination for the national award was forwarded to the national office.

A discussion ensued on the question of the national officers and Board of Governors moving the 1995 meeting out of Denver because of the Colorado voters approving "Amendment 2" which forbade the passage of laws prohibiting discrimination based on sexual orientation. John Kenelly, of the national office, reported that the national officers had sent letters to Denver Mayor Wellington Andrew Webb and Colorado governor Roy Romer saying that if Amendment 2 is repealed the national officers would "accept later" another offer to come to Denver. Considerable outrage, as well as frustration, was expressed, but no resolution was offered for action.

Following a short discussion, registration fees at future section meetings will be \$2 for students and unemployed persons, \$6 if preregistering, and \$10 at the site of the meeting.

Mesa State College, which last hosted the meeting in 1986, offered to host the 1995 meetings. The section officers were instructed to prepare a new "rotation schedule" plan to be offered at the 1994 meeting for discussion.

The section voted to add the 1993 top scorer on the Putnam exam to our list of free MAA student memberships. Bill Bosch, of the University of Northern Colorado, suggested we also recognize the top scorers on the High School tests. This will be done in some manner, as yet to be determined by the Executive Committee.

In closing the meeting, the Section voted to thank the Colorado School of Mines for its kind hospitality. Appreciation was also extended to Ardel Boes and Willy Hereman for their outstanding organization of the meetings.

Officers for 1993-94 are -- Past Chair: Gary Grefsrud, Fort Lewis College

Chair: Tom Kelley, Metropolitan State College of Denver

Chair Elect: Janet Barnett, University of Southern Colorado

Vice Chair: Patricia Hauss, Arapahoe Community College

Secretary/ Treasurer: Bill Ramaley, Fort Lewis College

Governor of Section: C. G. Mendez Metropolitan State College of Denver

Acting Program Chair: Don Teets, South Dakota School of Mines and Technology

Respectively submitted, William C. Ramaley, Secretary/Treasurer

Mathematical Association of America, Rocky Mountain Section

Message from the Section Chair, Tom Kelley, The Metropolitan State College at Denver

As chair of the section I feel that I'm responsible for keeping the "day-to-day" operations moving (at least sporadically), for listening to the membership throughout the section (this will take good ears because our section is quite well spread out), and for trying to start any new initiatives or projects which seem "right" for the section to undertake.

Two big day-to-day items are the planning for the April, 1994, Spring Meetings at the South Dakota School of Mines in Rapid City, South Dakota and the publication of the Section Newsletter. The first is in the capable hands of Don Teets and his colleagues at S.D.S.M. and from all communications things are proceeding well and the attendees will be treated to an excellent meeting. The second item is under the care of Bill Ramaley of Ft. Lewis College in Durango and you can see the fruits of his labor before you.

The second task for me is that of listening to what Section members have to say. Besides the mail and the telephone, remember that most of us have access to email (actually this is just for a guess, for some people "access" might mean on their desktop and for others it might mean at some remote location on campus). I'd recommend making use of whatever means you have at hand if you need to contact any section officer. My email address is "kelley@zeno.mscd.edu" and I try to check my email once a day. In the past we've had department contacts/ reps for our section and I would be interested in verifying and updating those of you who are still interested in doing that. We also have members who are not faculty at colleges and we need to figure out a way to stay in touch with them. If you have any thoughts or ideas on this please send them our way. Perhaps at the Spring meetings we'll be able to put something a little more formal in place.

One of the items that department reps can help us with are the nominations for the Outstanding Teacher/Distinguished Service award for the section. We know there are many deserving faculty within our section. Perhaps if we had a person at each school to place someone's name in nomination we would have more candidates for this award. Finally, on the Student Chapter you encourage your students to use their email capability to communicate with other math students around the country. In order to start that process at MSCD I talked the computer folks into giving the Metro Math Club a student account on the Vax and we can be reached at "mathclub@zeno.mscd.edu". By all means if you have students who like to use the email please have them get in touch with us. It's probably not for everybody, but anything that increases our communication should be tried.

Section Governor's Report- "Tino" Mendez, Metropolitan State College at Denver

First of all, I would like to thank you again for your vote and support in electing me your Section's Governor. I am truly humbled by your trust and confidence in me, and sincerely touched. I am excited about having this opportunity to serve you and look forward to working with all of you.

We had a delightful meeting this summer in Vancouver, B.C. I participated in the Board of Governors meeting and a number of committee meetings on math education issues including Curriculum Projects in Undergraduate Mathematics (CPUM), Calculus Reform, Assessment of the Undergraduate Major, MAA/AMATYC Guidelines for Departments of Mathematical Sciences. I also attended the meetings of the committees on the participation of women and underrepresented minorities in the mathematical sciences, and the committee on MAA awards.

I want to share with you my impressions of the meetings of the Board of Governors. The MAA is a very vibrant organization, playing an aggressive leadership role in math education at the national, as well as at the regional and local levels. Its heart is in the right place and its financial resources are being earmarked accordingly. We are investing our time and monies on projects committed to our mission "to advance the mathematics sciences, especially at the collegiate level," and on those activities designed to enhance the services provided to the membership.

Most of our budget is devoted to the publication of our newsletter and professional journals, and we have seen a policy shift in recent years to augment the breath and diversity of our periodicals. The *Focus* is now the most widely read of all our periodicals. One of the issues I raised was the need to

(Governor's Report, continued-)

revise the internal control cost accounting method used for the allocation of the revenues/costs associated with these publications. I would like to see a demand-driven mechanism that would more appropriately reflect the interests of the membership.

There was a serious discussion on administrative salaries and related expenses. Although increases remain in the single digit range, they merit and will continue to receive our scrutiny. The MAA Building and Greater Fund drives have been very successful thanks to your generous support. We continue to strongly support our Math Competitions program, endowed secondary teacher recognition awards, and excellence in teaching sectional awards.

In terms of members' services, we focused on the need and the nature of the delivery of electronic services to the membership. There was strong support for cooperating with the AMS to avoid unnecessary duplication and for the delivery of information related primarily to support "mathematics education." What would you like to see the MAA provide its members in the form of Email, or more generally, electronic services? Please let me know.

I have been working on the following initiatives: (a) I think it is extremely important for our section to develop and help build a stronger professional relationship between elementary and secondary schools, community colleges, and four-year and university mathematics faculties. Although many of us have been active in the states' CTM's and the NCTM and/or worked closely with AMATYC and two-year college faculty, we have operated disjointly for too long. The explosive growth in community college enrollments and the corresponding need for articulation, the reform movement in mathematics education at the elementary and secondary levels under the leadership of the states' CTM's, and Colorado's State Systemic Initiative proposal establishing partnerships between local school districts and the all of Colorado's institutions of higher education, and our (MAA's own) curricula and other reform efforts require (if not demand) extensive cooperation and collaboration among all of us. Hence, I have been making phone calls across Colorado (and hope to do the same in Wyoming and South Dakota) and meeting individually with mathematics faculty at all levels to start organizing and fostering the networking necessary to make it happen.

(b) I attended the CCTM Fall conference and spoke to the CCTM board. We (elementary and secondary teachers, math coordinators, and college faculty) plan to meet regularly in the Denver Metro area to followup and continue to talk about these issues. We need your help to encourage and promote these regional meetings elsewhere. Please let me know if you have an interest and would like to help.

(c) Throughout our section there many activities. It would be nice to develop an inventory of programs, projects, and initiatives being carried out by departments of mathematical sciences and mathematics education in the section. I will be contracting department chairs and MAA department representatives in the future to help coordinate this effort.

(d) David Carlson submitted a proposal to coordinate all mathematics/mathematics education related awards given at all levels in the state of Colorado and to schedule a function in April during Math Awareness Week at the governor's mansion to recognize the winners.

(e) I would like to continue to encourage the proliferation of MAA Student Chapter and the Student Papers Session(s) at our sectional meetings.

(f) We need to rebuild the once successful MAA Lecture Series where MAA members make presentations to high school student audiences. Would you be willing to volunteer to give a talk at local high schools?

(g) There are MAA SUMMA monies available to fund intervention projects.

(h) I have been told that the NSF will continue to aggressively support math and science education projects over the next three to five years in the areas of teacher preparation and enhancement.

News from Departments

University of Northern Colorado- Richard Grassl, Chair

New Faculty – **Robert Mayes**, Ph.D. Kansas State, previously at West Virginia University; **Jeff Farmer**, Ph.D. Texas A&M, previously at U. of Missouri-Columbia; **Susan Tappero**, Ph.D. U C-Santa Cruz, previously at Middlebury College, **Dean Allison**, Ph.D. U. of Missouri-Columbia, previously at Southern Illinois Univ.

Rex Schweers retired in 1992 and **Tim Cavanaugh** is retiring August, 1994

The second annual Northern Colorado Mathematics Camp was held for 7-12 grade students. A model teaching classroom has 16 Mac's and a Barco projection system. Our Putnam Team was 90 out of 290.

University of Southern Colorado-Melvin Withnell, Chair

New Faculty, **Bruce Lundberg**, Ph.D. CSU, previously at Grand Canyon Univ. in Phoenix, **Ray Tennant**, Ph.D. SUNY (Albany), previously at Canisius College in Buffalo.

Paul Chacon promoted to Associate Professor. **Roger Johnson** and **Tensia Soto-Johnson** on leave at the U. of Arizona and **Jim Louisell** just back from leave at U. of Minnesota. **Bud Allen** has a leave to work with the Superintendent of School District #60; **Jim Louisell** has a campus minigrant.

The USC Math Club is active, with talks, fundraising, and socials. **Gill Orr** is club sponsor.

Colorado College-Marlow Anderson, Chair

Debby Levinson, Ph.D., U. of S. Florida, joins the faculty, having taught at U. of S. Florida. Both **Steven Janke** and **Fred Tinsley** promoted to Professor

University of Colorado at Denver - Bill Briggs, Chair

Visiting Faculty, **Karen Kafadar**, Ph.D. Princeton, formerly at National Cancer Institutes; **Abraham Punnen**, formerly at U. of New Brunswick; **Sum Chow**; **Larry Langely**, Ph.D. Dartmouth.

Jennifer Ryan and **Dave Fisher** promoted to Associate Professor.

Stan Payne and **Tom Russel** are on sabbatical and **Jennifer Ryan** is on leave with U.S. West.

Collin Hightower retired and **Tom Manteuffel** and **Steve McCormick** have left.

In 1993 the Center of Computational Mathematics was created to focus research and teaching activities in the area of numerical mathematics. The Director is **Jan Mandel**.

Adams State College - Ed Adams, Chair

Renjin Tu is visiting from Wichita State. His field is Applied Mathematics, **George Sellman** is on leave. The department anticipates 2 temporary positions to replace faculty on leave in 1994-5.



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