



Southern California Section
The Mathematical Association of America
NEWSLETTER

Volume XLIV, Number 2

January 2003

Governor's Report

Dates to Remember:

*Southern California
Section Spring
Meeting on March 8,
2003 at Harvey Mudd
College*

*MAA Mathfest from
July 31-August 1, 2003
in Boulder, CO*

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Mario Martelli
Claremont McKenna College

The Board of Governors meeting took place on Tuesday, January 14, from 9AM to 4PM in room 307 of the Baltimore Convention Center. Of particular interest to the members of the Southern California Section is the approval of our new bylaws. They reflect the changes on the boundary of the section, since San Luis Obispo has been assigned to the Northern California section and Southern Nevada to our section.

At our Section's business meeting on March 8, we will vote on the proposal to rename our section as the SOUTHERN CALIFORNIA-NEVADA Section of the MAA.

Listed below you will find other interesting news.

Paul and Virginia Halmos have donated \$3,000,000 to the MAA for the

renovation of the Carriage House. This is the largest gift ever received by the MAA.

Henry Alder donated \$100,000 to recognize three young Distinguished Mathematics Teachers every year. The award is restricted to those individuals who have received their Ph.D. in Mathematics at least two years ago but not more than seven years prior to the recognition. A committee will elaborate precise guidelines for the award. The first competition will be announced immediately after the approval of the guidelines by the Board of Governors. Henry Alder passed away after a long battle with cancer just as the officers of the society were having a preliminary discussion about the guidelines of the award.

Don Albers informed the Governors that all three MAA journals, the American Mathematical Monthly, the College Mathematics Journal and Mathematics Magazine are now available online through
(Governor's Report continued on page 6)

Section Officers Meeting

Mario Martelli
Claremont McKenna College

The Section Officers Meeting took place in the Constellation Room of the Hyatt Regency on Wednesday, January 15 from 3 to 5 PM. The Southern California Section was represented by Mario Martelli, Governor of the Section, Ann Watkins, President of the MAA, and Deborah Tepper Haimo, former Chair of the Section and Past President of the MAA.

I summarize below all items of interest to the members of our section.

Bernie Madison talked about the program PMET

(Preparing Mathematicians to Educate Teachers). With a \$3,000,000 grant from NSF the MAA is planning several activities to achieve the goals for which the proposal was funded.

- Workshops of varying duration for faculty training will be organized. These workshops can be offered in conjunction with regional meetings. There is no cost to the section hosting the workshop.
- Mini-grants will be awarded to nurture and support grassroots innovation in teacher education on individual campuses.

PMET efforts are focused initially in California, New York, North Carolina, Nebraska, and Ohio. The first
(Section Officers Meeting continued on page 6)



The Student's Column

Janet L. Beery
University of Redlands

Plan to attend the Spring 2003 Meeting at Harvey Mudd College!

Student admission to the Spring Meeting Saturday, March 8, 2003, at Harvey Mudd College is only \$10, and lunch for students is only \$6. See the registration form on page 7 of this newsletter. In addition to three exciting talks by three truly exceptional speakers and the ever-popular game show "Who Wants to be a Mathematician?", the Spring Meeting will feature the annual Student Poster Session. If you present a poster at the Spring Meeting, you'll receive free registration and lunch at the meeting, and a free one-year MAA membership and journal subscription. See Spring 2003 Meeting Student Poster Session at Harvey Mudd College, below.

Organize a group of students from your school to attend the Spring Meeting, and encourage your Mathematics Department Chairperson to pay for your registration and lunch!

Spring 2003 Meeting Student Poster Session at Harvey Mudd College

Begin preparing a poster NOW for the Spring Meeting at Harvey Mudd College, Saturday, March 8, 2003! Posters may feature the results of any individual or group mathematics project, including:

- Results of honors, senior, or other independent study projects;
- Results of classroom projects or modeling contests;
- Results of REUs or other summer workshops or research programs;
- Historical investigations in pure or applied mathematics;
- Solutions of problems from the Putnam Exam or from the *Monthly* or other journals.

The 2002 Student Poster Session featured 20 posters with topics ranging from mathematical modeling of cancer treatments and of waterslides to investigations in combinatorics and knot theory. If you don't already have a project in mind, ask one of your professors for a project to present. Besides the challenge of working on the project, benefits to you include:

- Opportunity to share your work with other students and with mathematicians from both academia and industry in a friendly environment;
- Free meeting registration and free lunch;
- Free 1-year MAA membership, including 1-year subscription to an MAA journal (or free MAA book if you already are an MAA member);
- Opportunity to win Best Project, Best Poster, or Honorable Mention Awards;
- Great resume entry.

Questions? Contact Prof. Janet L. Beery, Dept. of Mathematics, Univ. of Redlands, 1200 E. Colton Ave., Redlands, CA 92373, PHONE: (909)793-2121, ext. 3118, E-MAIL: janet_beery@redlands.edu or beery@uor.edu Submit a title and brief abstract to Prof. Beery at the address or e-mail address above by **Wednesday, Feb. 26, 2003**. Be sure to include your name, the name of your school, and your advisor's name.

Southern California students win big at national poster session!

The following Southern California mathematics students won \$100 prizes for posters they presented during the Undergraduate Student Poster Session Thursday, Jan. 17, 2003, at the AMS-MAA National Meetings in Baltimore, Maryland. Sixteen such prizes were awarded to the best of the 82 posters presented. Only Southern California research advisors are listed below.

Childress Scot, California State University, Fullerton, Biquaternionic Projective Space (Faculty Advisor: Alfonso Agnew, California State University, Fullerton)

Oscar del Valle, University of California, San Diego, A Computational Model for the Motion of Flagella

Stephanie Proctor, California State University, Fullerton, On K^* -ultrahomogeneous Graphs

Jeremy Rouse, Harvey Mudd College, Cyclotomic Factorization (Faculty Advisor: Arthur Benjamin, Harvey Mudd College)

Professor Mario Martelli of Claremont-McKenna College organized the Undergraduate Student Poster Session, which included 82 posters presented by students from almost every state in the U.S.



News of the Section

Here are some news items from the math department at **Claremont Graduate University**:

- 1) Professor John Angus is now chairman.
- 2) Professor Lixin Wu, formerly of Hong Kong University of Science and Technology, has joined the CGU math faculty as tenured Associate Professor of Mathematics, specializing in mathematical finance.

- 3) Professor Alpan Raval, formerly of the Keck Graduate Institute, has joined the CGU math faculty as co-director of Computational Science, specializing in bioinformatics.

- 4) CGU math now offers two new degrees: the Master of Science in Financial Engineering, jointly with the Drucker School of Management (contact Kate Nash at Kate.Nash@cgu.edu) and the Ph.D. in Computational Science, jointly with **San Diego State University** (contact Jose Castillo at castillo@myth.sdsu.edu or Alpan Raval at alpan.raval@cgu.edu).

In the Fall Newsletter, I ran out of room and had to omit the following exciting news from the **University of San Diego**: Last year Perla Myers won USD's Experiential Education award for the work she has done with

pre-service elementary school teachers in her Math for Elementary School Teachers courses.

Art Benjamin (**Harvey Mudd College**) and Jennifer Quinn (**Occidental College**) were selected as the next Editors of the *Math Horizons* magazine, beginning 2004.

Harvey Mudd College welcomes Jon Jacobsen as an Assistant Professor and Naomi Cameron as a Visiting Assistant Professor.

Notes from the Newsletter Editor

Send news from your institution to me at lkjeseth@elcamino.edu or send it to

Lars Kjeseth
El Camino College,
Division of Mathematical Sciences,
16007 Crenshaw Blvd,
Torrance, CA 90506.

Please note that my old email address, Lkjeseth@socal.rr.com, will no longer exist after October 1, 2002.

There wasn't much news sent to me for the Winter Newsletter. Hopefully I will receive more for the Summer Newsletter.

—Lars Kjeseth

Report on the Undergraduate Student Poster Session in Baltimore

Mario Martelli
Claremont McKenna College

The 2003 Undergraduate Student Poster Session was a resounding success. I received 108 applications. The room of the Baltimore Convention Center reserved for the event could accommodate only 80 and I had to say no to so many interesting research projects. The session was a sight to be seen. The room was packed with 192 undergraduates presenting their posters, 115 judges and many visitors. Those who attended the session for the first time could not believe their eyes. Also, those who had attended previous sessions told me repeatedly that the posters are getting better every year. There were 25 students from the Southern California Section. Seventeen posters were authored or co-authored by undergraduates from our section.

Among the 16 posters recognized with the \$100 prize, we find 4 with authors or co-authors from the Southern California Section. They are listed below in alphabetical order.

Poster # 16 on Biquaternionic projective space authored by Scot Childress (California State University Fullerton). The research was done at California State University Fullerton (Sally-Casanova Predoctoral Fellowship). The supervisor was Alfonso Agnew (CSUF).

Poster # 22 on A computational model for the motion of flagella authored by Oscar Del Valle (University of California San Diego), Heather Flores (University of Nebraska-Lincoln), and Stefan Mendez-Diaz (University of Chicago). The research was done at the University of Puerto Rico Humacao (NSF-REU and NSA). The supervisor was Victor Moll (Tulane University).

Poster # 65 on K*-ultrahomogeneous graphs authored by Stephanie Proctor (California State University Fullerton), and Chris Jankowski (Notre Dame). The work was done at the University of Notre Dame (NSF-REU). The supervisor was Dan Isaksen (University of Notre Dame).

(National Students' Poster Session continued on page 6)



Southern California Section of the Mathematical Association of America (MAA)

Spring 2003 Meeting

Saturday, March 8, 2003

at

Harvey Mudd College

Tentative Schedule

8:30a — 12noon **Registration** (Entrance to Hixon Court)
 8:30a — 4:30p **Book Exhibit and Sale** (Galileo Hall Lobby)
 8:50a — 9:40a **Judith Grabiner**, Pitzer College (McAlister Lecture Hall in Galileo Hall)

It's all for the best: searching for perfect mathematical models, from Babylonia to the eighteen century

Throughout the history of the exact sciences, mathematical models have been used not only to make accurate predictions but also to best embody, in some sense, the laws of nature. Historical examples from astronomy and physics will be proposed including Aristotle, Heron of Alexandria, Pappus, Nasir al-Din al-Tusi, Fermat, Newton, Leibniz and the speaker's research on Colin McLaurin. Some historically motivated questions about mathematics, science and truth will conclude the talk.

Complete the registration form on page 7 and send it with payment to:

Ernie Solheid
 Dept. of Mathematics
 CSU Fullerton
 800 N. State College Blvd.,
 Fullerton, CA 92834

Registration deadline is Friday, February 28, 2003.

MAA Members! Don't forget to vote for the new section officers!

9:50a — 10:50a **Undergraduate Student Poster Session** (Courtyard on top of Galileo Hall)
 10:50a — 11:15a **John De Pillis** signs his book at the **Book Exhibit** (and draws caricatures!)
 11:20a — 12:10p **Ed Burger**, Williams College (McAlister Lecture Hall in Galileo Hall)

How to always win at Limbo

Have you ever gone out with someone for a while and asked yourself: "How close are we?" This presentation can answer that question. How? First we will take a strange look at infinite series, dare to mention a calculus student fantasy, and momentarily consider transcendental meditation. We will attempt to build some very exotic series that can be used to flee the country in a hurry. We may succeed or fail. Come to the talk to find out. Will you be at the edge of your seats? Perhaps. If not, you will probably fall asleep and either way you will feel refreshed after the talk. No matter what, you will learn a sneaky way to always win at Limbo. You will answer the more fundamental question: What does it mean for two things to be close to one another?

12:15p — 12:35p **Business Meeting**, Maghnild Lien, Chair of the Section, CSUN (McAlister Lecture Hall in Galileo Hall)

New borders and new name of our section
 Prizes to the best posters
 Election of new officers
 Award for Distinguished College or University Teaching of Mathematics



12:45p – 1:50p **Lunch** (Pratt Campus Center)

2:00p — 2:50p **Ron Graham**, UC San Diego (McAlister Lecture Hall in Galileo Hall)

Finding your way in a graph

There are many situations in which one would like to find the shortest path between various points of a network, for example between two websites on the internet. In this talk we describe one approach to this problem in which optimal routes can be found based just on local information about the network.

3:00p — 4:00p **Ernie Solheid**, California State University Fullerton (McAlister Lecture Hall in Galileo Hall)

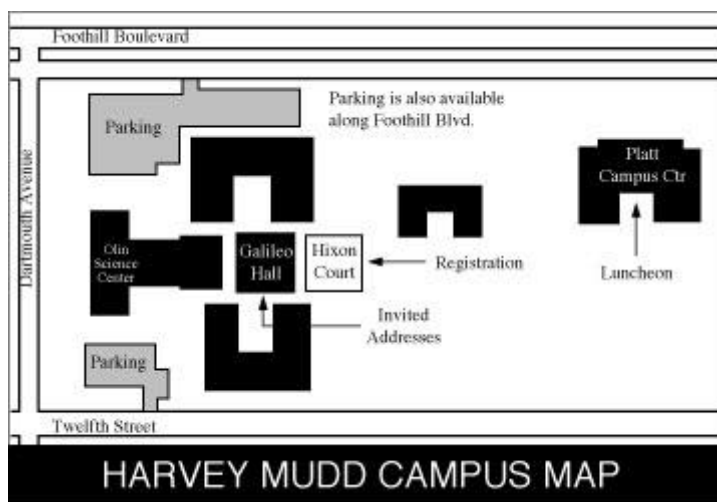
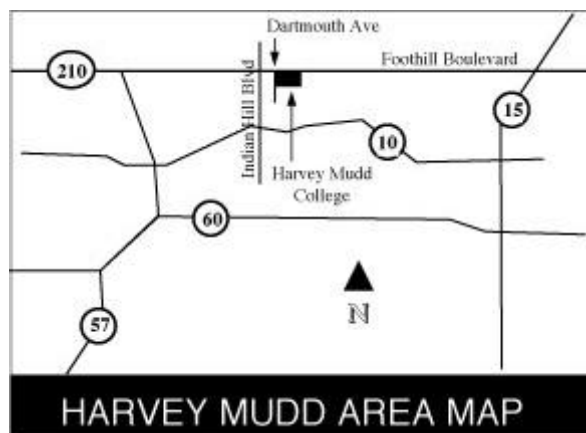
Who wants to be a mathematician? A Mathematical Game Show.

Do you know the mathematician who won the Nobel Prize ... for literature? How much the Fields Medal recipients receive?... Good prizes for all participants.

3:00p — 4:00p **Sid Kolpas**, Glendale College (Edwards Lecture Hall in Galileo Hall)

Teaching + Antiquarian Texts & Ephemera = Excitement & Enrichment

Come to see a beautiful edition of Descartes' *Geometry* (1695), an early edition (1620) of Napier's *Logarithmorum Canonis Description*, a portrait of and a writing sample from Colin McLaurin, *Mathesis Universalis* (1656) by John Wallis, a calculator that saved a Jewish man from execution during WWII and much more. An entertaining and exciting experience!





(Section Officers Meeting continued from page 1)

workshop in California will be June 15-21 in Arcata, CA, and is being organized by Patrick Callahan. Full information on all activities connected with PMET can be obtained at the URL <http://www.maa.org/pmet>.

Don Albers talked about the course **Mathematics for Business Decisions** developed at the University of Arizona, Tucson, by Richard Thompson of the Mathematics Department and Chris Lamoreux of the Eller College of Business and Public Administration. The material for the course will soon be published by the MAA. The approach envisioned by the course is focused on

- a) Students working in teams;
- b) Self-contained computer text in Microsoft PowerPoint, Excel and Word together with Internet data;
- c) Computer demonstrations and animations to reinforce the spreadsheet skill lessons.

The entire purpose of the course is to let students acquire solid mathematical skills and solve common, nontrivial business problems. Workshops on the course features can be given at regional meetings of the sections, at no cost for the section requesting them. Participants will be charged \$20 to attend, and the money collected with the fee will be given to the section. Contact Don Albers at MAA headquarters to request one or more workshops.

Mathematical Competitions (IMO, AMC8, AMC10, and AMC12): Sections were encouraged to publicize the various mathematical competitions organized by the MAA for high school students and to recognize the local winners at the section meetings. The person to contact for the names of the winners belonging to the interested section is Elgin Johnston from Iowa State University. He can be reached at (515) 294-0302 or ehjohnst@iastate.edu.

(Governor's Report continued from page 1)

JSTOR. He also mentioned that a very interesting book written by John De Pillis, from UCR is now available. The title is *777 Mathematics Conversation Starters*. We can purchase this entertaining book at a discount during our Spring Meeting at Harvey Mudd College on March 8. John will be there to sign the book.

The MAA will most likely receive a grant for running Undergraduate Regional Mathematics Conferences. Since our section has been focusing on Undergraduate Research for a long time, we are among the most qualified sections to run such a conference.

There will be two workshops in Phoenix, AZ, on Supporting Assessment in Undergraduate Mathematics. The first will be March 14-16, 2003 and the second one January 5-6, 2004. The one in January comes immediately before the 2004 Joint Meeting. The second workshop is a continuation of the first. The organizers expect that the same team of two-three mathematical sciences faculty members from a given institution will participate in both workshops and will present a poster on the achieved goals at the January 2004 Joint Meeting.

After a long discussion, the Board of Governors approved a substitution policy authorizing a governor of a section unable to attend either the winter or the summer meeting to nominate a substitute with full voting rights. The substitute must be selected from among the past governors of the section.

A new policy governing electronic voting was also approved. For the next election, members will be offered the alternative of voting with a standard ballot or voting electronically. A brief biography of the candidates will be mailed to all members and a longer biography will be posted online.

(National Students' Poster Session continued from page 3)

Poster # 69 on Cyclotomic factorization authored by Jeremy Rouse (Harvey Mudd College). The research was done at Harvey Mudd College. The supervisor was Arthur Benjamin (HMC).

I hope to see all these posters presented again at the Spring Meeting on March 8. The students and their advisors are urged to get in touch with Janet Beery, our Coordinator for student activities at the e-mail listed in this newsletter.

**REGISTER FOR
THE SPRING
MEETING!****VOTE FOR THE
NEW OFFICERS!**

Complete the form
below and send it
with payment to:

Ernie Solheid
Dept. of
Mathematics
CSU Fullerton
800 N. State
College Blvd.,
Fullerton, CA
92834

Registration
deadline is Friday,
February 28, 2003.

Pre-Registration/Luncheon Reservation Form
Spring Meeting — Harvey Mudd College

Enter the number of registrations of each type in the appropriate blank in
the table below. Make checks payable to **Southern California MAA**.
(Attach a separate page for multiple registration information.)

Name _____

Affiliation _____

Address _____

E-mail Address _____

	Nonmember	MAA Member	New MAA Member First Meeting	Student
Registration Only	_____ @ \$30	_____ @ \$25	_____ @ FREE	_____ @ \$10
Registration and Luncheon	_____ @ \$45	_____ @ \$40	_____ @ \$15	_____ @ \$16
Registration and Vegetarian Lunch	_____ @ \$45	_____ @ \$40	_____ @ \$15	_____ @ \$16

Total Enclosed \$ _____

Questions or problems? Contact:

Ernie Solheid, Email: esolheid@fullerton.edu Phone: (714) 278-7023

Attention MAA members! Please VOTE for the new Board Members.
Send this ballot in with your registration,
even if you are not going to attend the Spring Meeting

BALLOT

I wish to vote for the slate of nominees.

Position

Candidate

Write-in Alternative

Section Chair



Claudia Pinter-Lucke
Cal Poly Pomona



Section Vice-Chair



Ken Millett
UC Santa Barbara



Second Program
Vice-Chair



Shawnee McMurrin
Cal State San Bernardino





Plan to attend the Spring Meeting at
Harvey Mudd College on Saturday, March 8, 2003!



- Program and directions on pages 4-5; registration form on page 7.
- Registration is only \$10 for students.
- Registration is free for *new* MAA members attending their first Southern California Section Meeting.



Newsletter

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Southern California Section
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