

MAA COMMITTEE ON COMPUTERS IN MATHEMATICS EDUCATION

FRIDAY, 17-JAN-2003

1:00 P.M. - 2:30 P.M.

CAMDEN

HYATT REGENCY

BALTIMORE, MD

MINUTES

I. **Call to Order:** 1:04 p.m.

II. **Attendance**

CCIME Members (present): Marcelle Bessman, Marcia Birken, Elias Deeba, Doug Ensley, Roger Nelson, Mary Platt (Chair), Brian Smith

CCIME Members (not present): Preston Dinkins, Zsuzxanna Kadas, Jeffrey Watt, Bruce Yoshiwara

CCIME Friends: Howard Penn, Gerald Porter, David Smith, Tom Leathrum

III. **Minutes, August 2002:** Approved.

IV. **Activities at the current meeting.**

* **Computational Mathematics in Linear Algebra and Differential Equations.**

Richard J. Marchand, SUNY, Fredonia

Elias Deeba, University of Houston-Downtown

Timothy J. McDevitt, Naval Surface Warfare Center, Dahlgren, VA

There were 20 proposals, of which 13 were accepted.

* **Innovative Use of the World Wide Web in Teaching Mathematics**

Brian E. Smith, McGill University

Marcelle Bessman, Jacksonville University

Marcia P. Birken, Rochester Institute of Technology

Thomas E. Leathrum, Jacksonville State University

David M. Strong, Pepperdine University

Joe Yanik, Emporia State Univeristy

There were three sessions for this CPS. There were 26 proposal submitted and all 26 were accepted. Attendance was very good averaging about 50 people in the audience. There was a dip in attendance during the time when Robin Wilson was giving a major address, but attendance picked up afterwards. For the session on Mathlets, attendance averaged about 60 people.

Comments:

1. This CPS was originally submitted as two CPS. The Committee on CPS decided that the two proposals should be combined into one CPS. The organizers tried to group the papers into subsets

and were able to fill each session using the subsets. Since there were three sessions, this amounted to having the two CPS as originally proposed.

2. The schedule for the meetings is packed. Maybe it is appropriate to add evening CPS.

3. There is a problem with people who do not show up. Perhaps it is appropriate to keep a list of those who don't show up.

4. There has not been as much innovation in the talks lately (except for the Mathlets session). The talks that sparkle are the exception, but it is hard to predict which talks will sparkle from the abstracts.

V. Activities planned for MathFest 2003, Boulder, CO, July 31 - August 2, 2003.

***MAA CP C1 CREATIVE USE OF TECHNOLOGY IN TEACHING MATHEMATICS**

Mary L. Platt, Salem State College

Marcelle Bessman, Jacksonville University - mplatt@salemstate.edu

Part 1:

Thursday, July 31, 1:00 pm - 3:00 pm

Part 2:

Friday, August 1, 3:15 pm - 5:15 pm

This session will focus on innovative uses of technology to support and enhance the learning of mathematics in all college courses. In particular, in the use of technology to support conceptual understanding and appreciation of the application of mathematical principles to solving real world problems. This session is sponsored by the MAA Committee on Computers in Mathematics Education (CCIME).

***MAA CP F1 E-Learning of Mathematics Courses**

Elias Deeba, University of Houston-Downtown

Ananda Gunawerdena, Carnegie-Mellon University

Thursday, July 31, 3:15 pm - 5:15 pm

This session includes papers that deal with methods of design, implementation, delivery assessment, and maintenance of complete e-learning environments, as well as experiences implementing such courses.

VI. Discussion and Approval of Activities planned for the Joint Meeting 2004, Phoenix, AZ, January 7-10, 2004

The committee considered several proposals for Contributed Paper Sessions (CCPS). It acted as follows:

Unanimously recommended and forwarded to the Committee on Contributed Papers a revision of the WWW CPS that has been very popular for the last several years. In consideration of the comments (see above), the new description reads as follows:

Uses of the WWW That Enrich and Promote Learning (MAA CP C1)

(Wednesday and Saturday afternoons)

Marcelle Bessman*, Jacksonville University

Marcia P. Birken, Rochester Institute of Technology

Mary L. Platt, Salem State College

Brian E. Smith, McGill University.

This session seeks to highlight uses of the Web and its tools that engage students in the learning process. Tools such as course management systems, digital resources, tutorial systems, and hybrids that combine these functions on the Web can make a difference in student engagement, understanding, and performance. Talks should demonstrate how these

technologies are being integrated into the learning process. The session is sponsored by the MAA Committee on Computers in Mathematics Education (CCIME).

Unanimously recommended the proposal on Mathlets that was forwarded to CCIME by CCPS (CCPS proposal #17).

Mathlets for Teaching and Learning Mathematics (MAA CP M1)

(Thursday afternoon)

David M. Strong*, Pepperdine University

Thomas E. Leathrum, Jacksonville State University

Joe Yanik, Emporia State University

This session seeks to provide a forum in which presenters may demonstrate mathlets and related materials that they have created or further developed. Mathlets are small computer-based (but ideally platform-independent) interactive tools for teaching math, frequently developed as World Wide Web materials such as scripts or Java applets, but there may be many other innovative variations. Mathlets allow students to experiment with and visualize a variety of mathematical concepts, and they can be easily shared by mathematics instructors around the world. The session is sponsored by the MAA Committee on Computers in Mathematics Education (CCIME).

CCIME also considered three other CPS proposals and unanimously voted to ask CCPS to give them careful consideration.

1. A proposal on CAS that was forwarded to CCIME by CCPS (CCPS proposal #12). CCIME felt that evaluation/evidence of learning needs to be part of the presentations and that that proposal is a strong one if learning effectiveness is a major focus.

The Effective Use of Computer Algebra Systems in the Teaching of Mathematics (MAA CP G1)

Wednesday afternoon

L. Carl Leinbach*, Gettysburg College

Edward A. Connors, University of Massachusetts.

Computer Algebra Systems (CAS) create an environment for the learning and teaching of mathematics. They can be used to encourage mathematical explorations and to affect the way in which we teach and what material we emphasize. Papers for this session are to discuss one of the following topics: classroom uses of CAS, student projects that use the CAS in a significant way, testing practices that allow the students to use a CAS, or evaluations of the overall use of CAS at a particular institution. It is expected that each presentation, in addition to explaining the use of the CAS, will address the effectiveness of this use in the teaching and learning of mathematics. While proposals for papers dealing with the use of a CAS in any mathematics course are welcome, preference will be given to papers dealing with the use of a CAS in courses other than the calculus sequence. In particular, papers on the use of the CAS in courses such as applied statistics, college algebra, quantitative methods, and the mathematics preparation of teachers are particularly welcome. Note that this session is focused on the use of a CAS, not technology in general. However, the choice of a platform (computer or handheld device) or CAS (Derive, Maple, Mathematica, or other CAS) is that of the presenter.

2. A proposal focusing on graphing and CAS handhelds (CCPS proposal #8). CCIME made no comments on this proposal.

Focus on Graphing and CAS Handhelds in Collegiate Mathematics-The Good/The Bad/The Appropriate

Charles E. Hofmann
Joseph R. Fiedler

3. A proposal on the use of hand-held technology in developmental algebra classrooms (CCPS proposal #7). CCIME felt that, as proposed, the topic is better suited for a Special Session.

The Use of Hand-held Technology in College and University Developmental Algebra

Classrooms

Wade Ellis

Ed Laughbaum

VII. Preliminary Discussion of proposals for MathFest 2004, Providence, RI, August 12-14, 2004

Committee members were reminded to think about possible sessions.

VIII. WEBSIGMAA

The organizers met with the MAA and are responding to questions from MAA.

IX. Other

Topics and ideas to be considered for future events:

- Consideration of a distinction between developers of software and new uses of existing software.
- Course Management Systems.
- Intelligent Tutor Systems.
- Minicourses.
- Technology Workshops.
- Tablet computers and wireless internet.
- A Panel Discussion of "What's New/Next in Technology?" Possible sources of information: Design Science (Rob Minor), IBM (Angel Diaz), Scientific Workplace, Maple, Wolfram.
- How to be more proactive - determine what the important issues are and which of those are not being addressed.

X. Adjourn. 2:26 p.m.