

The Research Council on Mathematics Learning seeks to stimulate, generate, coordinate, and disseminate research efforts designed to understand and/or influence factors that affect mathematics learning.

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## PRESIDENT'S COLUMN

### Re-FOCUSING our Research Efforts

by Pat Jordan

Ahhh, welcome to summer! We all look forward to a time of renewal, relaxation, and respite from the long academic term. Some of us will continue our teaching, some of us will continue our research, and some of us will continue to bring new and fresh ideas to the foundations of how we come to know and understand mathematics. As you ponder what you will be doing this summer and into the new academic year, I would like for you to contemplate our role as mathematics education researchers in the face of three events I've encountered over the past year.

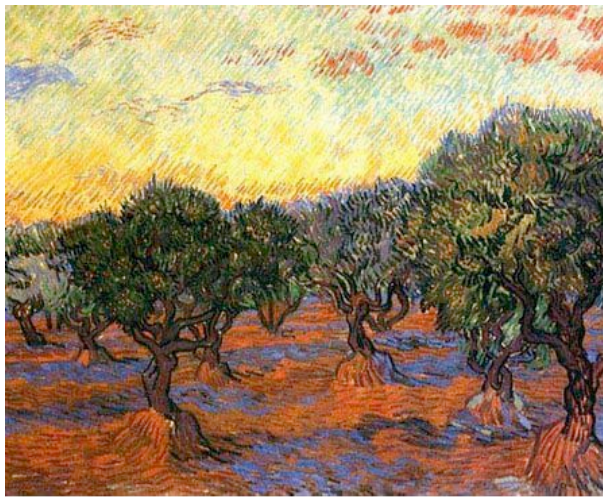
The first event, or rather in this case three events, was the passing of three of our esteemed colleagues in the field of mathematics education. This past spring Lola J. May, John van de Walle, and John Harvey passed away. For me personally, this marked the end of an era. As an undergraduate I was first introduced to Lola May through her elementary mathematics methods textbook. To me it was filled with wonderful opportunities to make a difference in the way young children knew and understood mathematics. Later as a young

professor at the University of Montana, I was privileged to work with her in presenting a professional development workshop for teachers in the Missoula-area school districts.

My introduction to John van de Walle came as well through his elementary methods textbook, which I was using to teach my own courses. We became friends after several of my email messages were met with great enthusiasm and I, as several of you have done, began to take a small role in his writing by serving as a reviewer for his text materials. Each semester I taught from his books, I learned something new about mathematics.

John Harvey and I became acquainted through my work with George Bright and Ginny Usnick at the University of Houston. One of my first assignments was to read works written by George and John. During this time, I often corresponded with John and he always seemed to find the time to visit with me when we ran into each other at the national meeting.

The second event, which has changed my thoughts about the learning of mathematics, occurred through an opportunity that Juliana Utley and I had this past fall and spring. Juliana was approached by our School Head, Dr. Christine Ormsbee, to work with a group of Secondary Special Education teachers who had been identified as not being "highly qualified" to



Van Gogh: Summer Day

teach the subjects which they had been assigned to teach in high school. These teachers had been given several options for meeting the new qualifications – one of which was to take and pass the state’s Middle Level Mathematics Exam which would allow them to teach the “algebras and geometry” courses in middle school/junior high school and the high school. Juliana approached me and asked if I would be interested in helping her as she worked with these teachers. I agreed to assist her and we had a great time working together. However, I can still remember walking into that classroom filled with a group of adult learners, some of whom who had been teaching special education students for 30 years, and having them appear to be scared to death. Most of all as the weeks progressed, they expressed the concern that they were afraid of letting us down if they did not do well on the exam.

The third event that has caused me to think about the role mathematics education research plays, is the implementation within the state of Oklahoma of a series of seven “End-of-Course” exams in algebra 1, geometry, algebra 2, English 2, English 3, biology, U S history, and. Beginning with the 9<sup>th</sup> grade class of 2008-2009, students will have to pass four of the seven tests or alternative tests approved by the State Board of Education as part of their graduation requirements. What happens if they don’t pass the algebra 1, algebra 2, and geometry tests? No one knows. The geometry exam is going to be administered on-line and, as far as I know, there has not been any research on the impact this form of the test may have on student success. Of course, I’m still wondering how you can call these exams “End-of-Course” when they are given six weeks before the end of the course.

Why discuss these three events with you and why is this important to the mission of RCML? Currently, we are at a crossroad fervent with opportunities to make a difference in mathematics education research in the arena of mathematics learning. How do we assess what students know and address these problems in ways that enhance the learning of mathematics? NCLB continues to drive the teaching of mathematics and research has not elicited ways to enhance students’ understanding and learning of mathematics at the same rate as the number of tests increase. We now have special education teachers and other adult learners who are experiencing the same problems of retention of both conceptual and

procedural knowledge of mathematics, as are the K-12 students. We have the opportunity to generate new ideas, establish new criteria for research into mathematics learning at the university, elementary, secondary, and adult levels. Do adults learn in ways that are different from traditional learners who experience mathematics anxiety and



do not learn effectively through rote processes? What are the most effective strategies for adult learners to incorporate into their own learning of mathematics to enhance their understanding and their ability to teach mathematics? What is the role of team-teaching in the learning of mathematics for both the regular and special education students and teachers? Who among us will step forward to set the standard for mathematics learning for the elementary student? The middle school student? The secondary student? The college student? The adult learner? What is the role of technology in assessment and mathematics learning? Do these new computer response tests evaluate what the students’ know about the mathematics or about the technology? Who is making these policy decisions and upon what research are they basing their decisions?

I challenge you to think about these issues, to seek colleagues who are willing to work with you, to begin your own research, and to be willing to share your progress with us at the spring 2008 meeting in Oklahoma City. I encourage you to share your ideas so that we can begin a dialogue of research about the learning of mathematics at all levels. Research what you teach, teach what you research, and share your ideas, your insights, and your results with us through presentations and publications.

## Bravo! Bravo! Bravo!

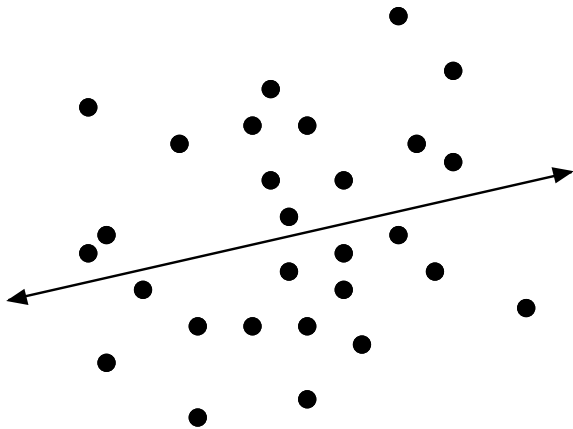
Again, I want to express to Roland Pourdavid and the conference team of Anne Reynolds, Patrick, Wachira, Atousa Ashouri Moghaddam, and Raymond Skitzki for the wonderful job of organizing and presenting the 2007 Annual Conference in Cleveland. All of their efforts and hard work was seen in the excellent arrangements, the exceptional selection of speakers, and the outstanding organization of the conference. Again, thanks for a job well done!

– Pat Jordan

## Points of Puzzlement

by Michael Naylor

TWO MILLION POINTS. Given a random scattering of two million points on a plane, is it always possible to create a straight line so that there are exactly one million points on either side of the line? Prove or disprove.



Last Issue: You are blindfolded at a table upon which are an unknown quantity of pennies. Ten are face up and the rest are face down. Your task is to separate the pennies into two groups so that each group has an identical number of face up pennies. You may slide the pennies around and flip them over, but you cannot tell by touch (or any other means) which ones are face up and which ones are the face down. How can it be done? (Yes, it is possible without cheating or supernatural powers!)

Solution: slide ten coins into one pile. You will have  $h$  heads in this pile and  $10-h$  heads in the other. Now flip over these 10 coins. There will now be  $10-h$  heads in both piles. Try it! You can generalize this to any number of coins and any number of heads.

## RCML Conference Report

Cleveland, Ohio March 1-3, 2007

by Roland Pourdavid

The 2007 conference demonstrated the merging nature of RCDPM to RCML. The conference location got us back to our roots at Kent State University. The collegial relationship of sharing ideas and information created a strong positive energy for all participants.

The exceptional Wilson Lecture was presented by Dr. Julian M. Earls. Dr. Earls is Executive in Residence at the Nance College of Business Administration at Cleveland State University. January 2006, he retired from the position of Director of the National Aeronautics and Space Administration's Glenn Research Center (GRC) in Cleveland. In his presentation, Dr Earls focused upon those intangibles that make teachers more effective in teaching mathematics.

The keynote speaker was Dr. Jean Schmittau. Dr. Schmittau is a professor of Educational Psychology and Mathematics Learning at the State University of New York at Binghamton. Her areas of expertise and research are in Vygotskian Psychology and mathematics education. Also, Dr. Schmittau serves as the editor of the journal, Focus on Learning Problems in Mathematics, the official journal of the Research Council on Mathematics Learning. In her presentation, Dr. Schmittau argued that Cultural-historical psychology has the power to contribute greatly in reforming mathematics education in U.S. classrooms.

In what follows, I present the number of participants on the Thursday night reception, Friday morning, Friday lunch, Saturday morning, and Saturday lunch. Also, I provide the number of presentations on Friday and Saturday followed by the total number of proposals submitted for presentation as well as final guest room counts. Then, I include a summary of the participants' comments and suggestions. Finally, I submit the income and expenses for the conference.

RCML Conference Report, continued

The Participants:

1. Thursday Night Reception	70
2. Friday Breakfast	80
3. Friday Lunch	88
4. Saturday Breakfast	75
5. Saturday Lunch	72

The Numbers of Presentations:

1. Friday Morning	23
2. Friday Afternoon	22
3. Saturday Morning	22

The total number of proposals we received was 70. Three people could not attend to the conference which brought down the total number of proposals to 67. Overall, we had 94 participants.

The Guest Rooms

1. 2/28	9 rooms
2. 3/1	51 rooms
3. 3/2	50 rooms
4. 3/3	17 rooms

The Participants' Comments:

- “[I loved] the opportunity for interactions among colleagues”
- “The Thursday night and Friday night speakers were great!”
- “The Thursday reception and lunches were very good.”
- “The session rooms and set-up created a supportive atmosphere for exchange of ideas and research.”
- “The program was well-done and varied.”
- “Forty-five minutes talk was good.”
- “This is my first time being in this conference and I will be back.”

The Participants' Suggestions:

- It needed ten minutes break between the session;
- It needed longer business meeting (2 hours);
- Bring back the Birds-of-a-feather session;
- Arrange social event for extra cost; and
- Acknowledge the new comers during the lunch and business meeting

Income and Expenses:

- Income \$\$\$
- Registration Income  
\$ 11,145.00
- Expenses \$\$\$
- Hotel Bill  
\$ 13,507.25
- Speakers  
\$ 1,000.00
- Supplies  
\$ 453.94
- Balance  
\$3,816.19
- Paid by CSU  
\$ 1,909.00
- Paid by KSU  
\$ 500.00
- Paid by RCML  
\$ 1,407.19

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Self-Referential Number: What number, when spelled in English, has the same number of letters as the number it describes? Can you find examples in Spanish, or French, or German, or Japanese, or ... ?

\* this is a great warm-up question for your students!

## RCML 2007 Officers

President 2007-2008  
 Patricia Lamphere Jordan  
 Oklahoma State University  
 Stillwater, OK 74078-4042  
[patricia.jordan@okstate.edu](mailto:patricia.jordan@okstate.edu)

Past President 2007-2008  
 Bea Babbitt  
 University of Nevada – Las Vegas  
 Henderson, NV 89074-4940  
[babbitt@unlv.nevada.edu](mailto:babbitt@unlv.nevada.edu)

VP Conferences, 2006-2008  
 David Boliver  
 University of Central Oklahoma  
 Edmond, OK 73034  
[dboliver2@cox.net](mailto:dboliver2@cox.net)

VP – Publications, 2007-2009  
 Sheryl Maxwell  
 University of Memphis  
 Cordova, TN 38018  
[areynol5@kent.edu](mailto:areynol5@kent.edu)

Secretary 2005-2007  
 Elaine Young  
 Texas A&M University  
 Corpus Cristi, TX 78412  
[elaine.young@tamucc.edu](mailto:elaine.young@tamucc.edu)

Treasurer, 2006-2008  
 Dixie Metheny  
 Montana State University  
 Billings, MT 59101  
[wmallam@tsu.edu](mailto:wmallam@tsu.edu)

Membership Chair  
 Roland Pourdavood  
 Cleveland State University  
 Cleveland, OH 44115-2440  
[r.pourdavood@csuohio.edu](mailto:r.pourdavood@csuohio.edu)

Focus Editor  
 Jean Schmittau  
 SUNY-Binghamton  
 Binghamton, NY 13902  
[Jschmitt@binghamton.edu](mailto:Jschmitt@binghamton.edu)

Newsletter Editor  
 Michael Naylor  
 Western Washington University  
 Bellingham, WA 98225  
[mnaylor@cc.wvu.edu](mailto:mnaylor@cc.wvu.edu)

Webmaster  
 Ryan Speer  
 Perrysburg, OH 43551  
[speer99@yahoo.com](mailto:speer99@yahoo.com)

Intersection Points -- RCML Newsletter  
 Michael Naylor - Editor  
 Dept. of Mathematics MS 9063  
 Western Washington University  
 Bellingham WA 98225-9063

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