R C M L

Intersection Points

The Newsletter of the Research Council on Mathematics Learning

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.

Visit us on the Web at: www.unlv.edu/RCML

President's Column

by Kay Wohlhuter

Dancing with the Stars

I'm a *Dancing with the Stars* fanatic. A colleague and I dissect each dance and have strong opinions about which stars should return the following week. My fascination with the show has also led to some interesting observations about what makes a good

dance professional. Dance professionals need to know how to dance various dances such as the jive, the rumba, and the Viennese waltz. It's not enough to just be able to dance; the professionals also have to understand what instructional elements will help others learn to dance. The strongest dance teachers assess their students' abilities on an ongoing basis and are able to design and adjust their instruction to match the needs of their students. On a recent show, one of the professionals told his star that she did not need to apologize for getting frustrated with his instruction because he knew that he could find a better way to help her learn the dance. The best dance professionals are able to incorporate the judges' feedback as they design appropriate instruction for their students. For me, the show's highlights occur when a dance professional's plan results in their star demonstrating confidence as a dancer and succeeding at a level beyond the star's wildest dreams.

Sound familiar? Of course they do because these observations identify the same qualities we use to characterize good mathematics teachers, to describe what it means to develop as a teacher, and to illustrate the complex nature of the teaching and learning of mathematics. Additionally, isn't it our goal for all students to become empowered mathematicians thriving in the world around them? It's a lofty goal, but research conducted in areas such as student learning, teacher preparation, formative assessment, special education, and technology use lead us to believe that this goal is obtainable. The role research plays in facilitating teachers' development and nurturing students' growth underscores the importance of carrying out our mission--to stimulate, generate, coordinate, and disseminate research efforts designed to understand and/or influence factors that affect mathematics learning. Be it in your role as researcher, teacher, administrator, assessment coordinator, or curriculum specialist, put on your dancing shoes and see what happens!

TREASURER'S REPORT

As of September 1, 2011 we have the following amounts on hand in our organization accounts:

General Account	$23,136.12
Publications Account	$15,985.38
Total RCML Accounts	$39,121.50

RCML Conference 2012

23–25 February 2012
Hilton Charlotte University Place, Charlotte, North Carolina

Learning, Teaching, and Knowledge: (Re)Constructing Mathematical Ontologies and Epistemologies in an Era of Transition

www.unlv.edu/RCML click on the ***Conference 2012*** tab

Organizers: Kerri Richardson (The University of North Carolina at Greensboro) and Megan Che (Clemson University)

Highlights include:

Paola Sztajn, professor of mathematics education at North Carolina State University, will discuss the imperative of professional learning for practicing teachers, her current work with teachers, and her vision for the future.

Neil Calkin, professor of Mathematical Sciences at Clemson University in the Algebra and Combinatorics group, will address mathematical connections to the arts of origami, magic, and music.

M. Jayne Fleener, Dean at North Carolina State University, will explore various perspectives in mathematics education through her talk entitled, "Why mathematics? Grand Challenges of Education"

RCML Proceedings

Due October 28, 2011

*** Proceedings can now be submitted via RCML website ***

http://www.unlv.edu/RCML/

Dear Fellow Members of RCML,

As always, the purpose of our conference is to share current research through presentations by the membership of RCML. In line with this mission, we are now heading into our third year of publishing conference proceedings for selected papers submitted and accepted as conference presentations. You are encouraged to prepare and submit a paper for the conference proceedings. The due date for conference proceeding papers is October 28, 2011. Submit papers via the RCML website listed below. All submitted proceeding papers will be blind reviewed by 2 Conference Committee members and/or other RCML members. Before preparing and submitting your paper, review the Proceedings Submission Guidelines document found on the RCML website www.unlv.edu/RCML.

Please note that acceptance to present at RCML does not guarantee that your paper will be accepted for publication in the conference proceedings. The review process for proposals and proceedings papers are separate from one another. All listed authors for a proceedings paper must register for the conference. If you have questions, please contact Stacy Reeder at reeder@ou.edu.

Thank you, Stacy Reeder, Vice President for Conferences

Lessons Learned, Connections Made, Mandate Needed

by Kimberly Sipes Hartweg
Western Illinois University

After teaching 6th grade mathematics for 10 years and teaching mathematics education and content courses for 10 years at the university level, I was able to take a leave of absence from my position at Western Illinois University to serve as a principal at George Washington School in Keokuk, Iowa. I had never had the opportunity to work in a school with seventy-five percent low-socioeconomic status (SES) households. It was amazing to watch the connections that teachers and staff made with these students and their families.

The school district held several training sessions for all personnel related to learning about the effects of poverty on students and how to better understand and support the education and lives of individuals in poverty. An example of this involved encouraging students to respond to and make eye contact with an authority figure. One fourth-grade teacher developed a morning greeting system with her students. She would greet them at the doorway of her classroom and call each one by name as she would genuinely say, “Good morning, Austin. Good morning, Emily.

Good morning, Ty….” In turn, students would look her in the eye and respond, “Good morning,” and give the teacher a high-five or a hug. During my second year as principal I was able to watch how she established this routine and began to build connections with her students. As students lined up in the hallway and proceeded to enter the classroom the teacher placed a sticker on the shirt of the students who gave eye

contact and responded to her appropriately. One student kept his head down and ignored the greeting as he entered the room. When he realized that he missed receiving a sticker he quickly returned to the end of the line to try again. From then on the connection was made for that student and teacher!

Making connections with students and families is the first step in developing a working relationship that can help in addressing the emotional and educational needs of students, particularly low-SES students. On any given day emotional issues may arise due to students having to deal with family situations such as follows: 1) father was arrested for the second time and is serving two years in prison, 2) grandmother is raising her three young grandchildren as their mother is unfit due to drug addiction, 3) mother is mentally ill and is hospitalized for attempting to harm her kids, 4) father is a convicted child offender with an additional warrant out for his arrest, and 5) grandmother with custody is concerned that the student's father is going to take the child during school hours. All of these examples are issues from just one of our elementary classrooms and may help substantiate research that indicates children from low-SES households and communities develop academic skills more slowly compared to children from higher SES groups (Morgan, Farkas, Hillemeier, & Maczuga, 2009); and that children with higher SES backgrounds are more likely to be proficient on tasks of addition, subtraction, ordinal sequencing, and math word problems than children with lower SES backgrounds (Coley, 2002).

As a mathematics educator and instructional leader of a low SES school, one of my goals was to provide support for the teaching of mathematics. We had a team of teachers receive training through the "Every Student Counts" program, held district grade level meetings that focused on problems solving, modeled problem solving lessons at every grade level, worked on curriculum, and even had teachers develop a school-wide integrated math/science unit of which they presented at the National Council of Teachers of Mathematics Conference. However, our most successful intervention occurred at the first grade level where temporary funds became available which allowed us to have a math specialist teach lessons while the first grade teachers assisted. The specialist had time to plan and gather materials that would engage students in learning mathematics. The first grade teachers were excited to see how students were able to make mathematical connections in a different way and first grade students loved mathematics! As I reflect back, a connection existed (although not intentional) between our George Washington Elementary School intervention and the TIMSS 1995 Video Study that included the teaching of an eighth-grade mathematics lesson in a Japanese classroom - - instruction was provided by a highly qualified mathematics teacher who was assisted by a second teacher in the classroom.

Most elementary teachers are generalists who specialize in reading and language arts. These teachers are responsible for not only maintaining a positive learning environment but also preparing/teaching multiple lessons in one day. Those who love mathematics will plan and teach quality lessons. However, in one day's time we also expect our elementary teachers to plan and teach quality reading, spelling, language, writing, social studies, science, health, library skills, and possibly Olweus-style anti-bullying lessons -- or whatever new initiative is being mandated. One such state mandate that was being established during my time as principal was that each child was to be provided with 30 minutes of daily physical activity taught by a certified physical education teacher. As a parent, math educator, former teacher, former principal… it makes me wonder what could be accomplished, particularly in low-SES schools, if a mandate existed that all elementary students receive 30 minutes of daily math instruction taught by a certified elementary mathematics specialist while being assisted by the regular classroom teacher.

REFERENCES

Coley, R. J. (2002). *An uneven start: Indicators of inequality in school readiness*. Princeton, NJ: Educational Testing Service.

Morgan, P. L., Farkas, G., Hillemeier, M. M., & Maczuga, S. (2009). Risk factors for learning-related behavior problems at 24 months of age: Population-based estimates. *Journal of Abnormal Child Psychology, 37*, 401-413.

MEMBERSHIP REPORT

Membership Report: As of October 2011, total membership stands at 90 members.

Additionally, RCML now has established a PayPal account; this link is up and ready for paying your 2012 conference registration now! We will soon have a new membership form - filled out and submitted online - together with the PayPal button that will allow you renew your membership for 2012 completely online! Look for a reminder email about membership renewal as we move toward the end of the year.

Please direct those wanting to join RCML to our website http://www.unlv.edu/RCML/

memberform.html

Election Ballot

Please mail this page to: Anne Reynolds, 480 Suzanne Dr, Kent, OH 44240

OR email your selections to areynol5@kent.edu

BALLOTS ARE DUE DECEMBER 1, 2011. PLEASE VOTE!

PRESIDENT ELECT

Serves a 1-year term as president elect, subsequently serves as president for 2 years, and serves a final year as Past President.

- Assists president
- Works on changes in By-laws
- Serves as chair of nominations committee
- Announces slate of officers and tabulates election results

CHOOSE ONE:

- ☐ Lynae Sakshaug - Empire State College
- ☐ Mary Swarthout - Sam Houston State University

VICE-PRESIDENT FOR CONFERENCES

Serves a 2-year term, Executive Committee Member

- Coordinates conferences
- Receives conference proposals
- Chairs conference committee
- Oversees the publication of the Conference Proceedings

CHOOSE ONE:

- ☐ Bob Drake - University of Cincinnati
- ☐ Gabriel Matney - Bowling Green State University

TREASURER

Treasurer: serves a 2-year term, Executive Committee Member

- Maintain accurate financial records for the Council's general operating expenses
- Maintain accurate financial records for the journal: Investigations in Mathematics Learning
- Disperse funds for authorized expenses incurred during the fiscal year
- Collect membership dues and maintain the membership list
- Present a financial report at the Annual Business Meeting

CHOOSE ONE:

- ☐ Donna Foss - University of Central Arkansas
- ☐ Jean McGehee - University of Central Arkansas
- ☐ Valerie Sharon - Sam Houston State University

CONFERENCE COMMITTEE

We will fill two positions; 3-year term

- Works with V-P for Conferences and Committee
- Works with the Annual Conference Committee, the Conference Chair and the Program Committee Chair
- Assists with Annual conference activities, particularly reviewing proceedings proposals

CHOOSE <u>TWO</u>:

- ☐ Sandra Browning – University of Houston–Clear Lake
- ☐ Nancy Cerezo - Saint Leo University
- ☐ Lynn Columba - Lehigh University
- ☐ Thomas Faulkenberry - Texas A&M University-Commerce
- ☐ Angela Krebs - University of Michigan-Dearborn
- ☐ Tony Thompson - East Carolina University

PRESIDENT ELECT

Lynae Sakshaug - Empire State College

I teach mathematics education and math courses in blended or on-line settings in our graduate secondary certification program. My research is in mathematical problem solving and the pedagogy of on-line teaching. I am the college coordinator of Empire's national accreditation with TEAC. I have published research and methodology papers in a variety of journals. I have been involved in RCML over the course of many years. The first annual meeting I attended was in 1997, in Oklahoma City. It's critical to serve actively in one's professional organization. In a recent time of transition, I served jointly as treasurer and membership director. I am interested in furthering my service to RCML by running for president because RCML helps expand the world's understanding of mathematics learning. The research shared by experienced and new researchers at the meetings is always diverse and interesting. I am excited by recent undertakings such as the publication of peer-reviewed proceedings of the conference, which ensure that RCML continues to give voice to researchers. If elected, in addition to furthering current growth initiatives, I would be interested in exploring how RCML might extend its reach to a broader research community at a time of fiscal austerity, using webcasts, video streaming and other media.

Mary Swarthout - Sam Houston State University

I am an associate professor of mathematics at Sam Houston State University in Huntsville, Texas. RCML has played an important role (both formally and informally) in supporting my professional growth as a mathematics teacher educator and researcher through the connections and support I have found in the membership. Because of my experiences as a member and as a board member, I want to serve as your next president so that I can continue the RCML mission for current and future members. My roots in the group began through an invitation from Judy and Mel Olson to present and attend the annual conference – and I haven't missed a conference since that time! I have served as the treasurer (past 4 years) and as membership coordinator (3 years) for RCML and have learned firsthand how the board and organization work. I have been involved in the establishment of the journal, presenting our financial situation to the membership, keeping membership records current, and contributing to the decision-making and recommendations from the board. I have a solid understanding of RCML from my work on the board and want to continue the positive and progressive movement of the group over the next four-year leadership term.

VICE-PRESIDENT FOR CONFERENCES

Bob Drake - University of Cincinnati

I would be honored to serve RCML as the Vice President of Conferences. The Conference Committee is one of the most important committees of RCML. It provides guidance to those organizing the annual meeting which helps members connect, share ideas, and develop close professional relationships with other mathematics educators. Successful annual conferences are necessary for the growth of RCML, to maintain membership, and to help members learn of the work being done by others. A successful conference committee is synonymous with a successful, viable organization. I believe there are ways to make the conferences more successful, and in that way increase the strength of RCML. In addition to co-chairing the 2011 RCML meeting in Cincinnati, I have chaired two Ohio Council of Teachers of Mathematics Annual Conferences (1993 and 1996) hosting approximately 1000 mathematics teachers, 225 sessions, and 60 exhibitors at each conference. At the completion of the 1993 OCTM conference, I wrote a handbook for future conference chairs that is still used by new chairs. I began a new handbook for RCML in 2011, which has since been passed to next year's chairs. Serving as the Vice President of Conferences would permit me to contribute to RCML's growth, and help continue to build our organization.

Gabriel Matney - Bowling Green State University

Dr. Gabriel Matney is an Associate Professor of Mathematics Education at Bowling Green State University. His areas of expertise and research include dynamic learning environments, authenticity in learning, and quantitative problem solving. Dr. Matney has served RCML in the past by being the Intersection Points newsletter editor and is currently serving on the RCML conference committee. Additionally, Dr. Matney served on the NCTM New Orleans Regional conference committee.

TREASURER

Donna Foss - University of Central Arkansas

Donna H. Foss, EdD, is a professor of mathematics education in the Department of Mathematics at the University of Central Arkansas (UCA) in Conway, Arkansas. During her 30 years at UCA, she served as chair of the department for eight years and currently is Program Coordinator for Mathematics and Science Education. She teaches mathematics primarily for early childhood and middle level teacher education and supervises secondary teacher education candidates in their school internships.

Following her M.S. in mathematics from UCA, she received a Certificate of Advanced Study from the University of Maine at Orono. As a result of her qualitative studies with Robert C. Kleinsasser at the University of Memphis, she was awarded Dissertation of the Year by the Association of Teacher Educators (1995). Since then, she has continued her research on teachers' conceptions of mathematics and mathematics teaching and learning and the subsequent influence on instructional behavior. Publications on this topic appear in *Teaching and Teacher Education* (1996), and *Teachers and Teaching: Theory and Practice* (2001) and *The Purposes, Practices, and Professionalism of Teacher Reflectivity* (2010). Her professional memberships include the Research Council on Mathematics Learning, National Council of Teachers of Mathematics, Association of Teacher Educators, Association of Mathematics Teacher Educators, and the American Educational Research Association. She resides in her hometown of Little Rock, Arkansas.

Jean McGehee - University of Central Arkansas

Jean McGehee has been in mathematics education since 1974. She taught secondary mathematics for five years in Georgia. She received a MEd from Georgia State University in 1976, an MS from North Texas University in 1986, and her PhD from the University of Texas at Austin in 1990. She was at Northern Arizona University for seven years and has been on the faculty at the University of Central Arkansas for the past 14 years. Jean served on the board of the Arkansas Council of Teachers of Mathematics from 2000 - 2007 including four years as President Elect, President, and Past President. Jean's research interests include the impact of professional development on teacher practice and curriculum alignment.

Valerie Sharon - Sam Houston State University

Valerie Sharon is an assistant professor of mathematics at Sam Houston State University. She earned a Ph.D. in Professional Education Studies (K-12 Math Ed) at Oklahoma State University in May 2010 (Chair- Dr. Pat Jordan). Her research interests include mathematical discourse, algebraic thinking, and teacher self-efficacy. Valerie has been a member of RCML since 2009.

CONFERENCE COMMITTEE

Nancy Cerezo - Saint Leo University

Why do you want to be considered for this office?

Having attended a couple of the conferences, I have found this organization to be

engaging and supportive to all attendees. My positive experiences have guided me in wanting to become more involved in the organization. Serving on this committee will allow me many opportunities to meet others who have a common interest in mathematics education and research. I believe RCML is the organization in which I can contribute and serve as mathematics education is my passion.

What do you believe are the challenges for RCML for the next two years? The main challenge is to increase attendance at the annual conference.

How would you seek to accomplish these challenges if you are elected to this office? (1) Search for the names of mathematics instructors at various universities and invite them to attend the conference and (2) challenge the membership in bringing one colleague to the conference.

Describe your participation in RCML: I have attended and presented at a couple of the annual conferences.

Lynn Columba - Lehigh University

Current Academic responsibilities: I have taught at Lehigh University for the past 23 years, in the Teaching, Learning, and Technology Program in the College of Education. In our Fifth Year Teacher Certification Program, I teach the elementary and secondary mathematics methods courses and supervise Pre-Intern and Intern Teachers. I advise masters and doctoral students in our graduate education program. Previously, I taught at the University of Louisville for three years and I taught in the KY public schools for 14 years.

Recent Accomplishments: My area of expertise is the use of children's literature to teach mathematics. I co-authored two books *The Power of Pictures Books in Teaching Math and Science: Grades PreK-8* (2005) and *The Power of Pictures Books in Teaching Math, Science, and Social Studies: Grades PreK-8* (2nd ed.) (2009). I was the editor of the Math by the Month column in *Teaching Children Mathematics*, a National Council of Teachers of Mathematics publication for volumes 16 & 17. Currently, I am a co-editor for the *Pennsylvania Council of Teachers of Mathematics Yearbook*.

Thomas Faulkenberry - Texas A&M University – Commerce

I am currently a Visiting Assistant Professor of Psychology and Director of the Center for Undergraduate Research and Creative Activities at Texas A&M University – Commerce. My academic training is in mathematics and cognitive psychology. My research bridges these two areas, as I work in the field of mathematical cognition. I have served as a reviewer for journals in mathematics education and cognitive psychology, ranging from

Mathematics Teacher to *Journal for Experimental Child Psychology.* I have been a member of RCML since 2008 and have presented papers at every annual conference since that time. If elected to the Conference Committee, I would like to further expand our efforts with the *Proceedings* concept and work to ensure that we continue to publish a wide variety of quality manuscripts in all areas related to the learning of mathematics.

Angela Krebs - University of Michigan-Dearborn

I have been involved with RCML for the past 9 years presenting at the conferences. I would appreciate the opportunity to contribute to the running of an organization that has been supportive and encouraging.

I have been at the University of Michigan-Dearborn since 1998. I completed my graduate work at Michigan State University where I had the privilege of working as a graduate student on the Connected Mathematics Project and Balanced Assessment. My research interests focus on the preparation of middle school teachers to teach mathematics. I am especially interested in middle grades teachers' and students' understanding of algebra.

Tony Thompson - East Carolina University

I am currently an Associate Professor of Mathematics Education in the Department of Mathematics, Science, and Instructional Technology Education at East Carolina University. I received my PhD in Mathematics Education from Florida State University in 1999. Previously, I was on faculty at the University of Alabama where I served as Vice President and NCTM representative for the West Alabama Council of Teachers of Mathematics and the editor of the Education section of the *Alabama Journal of Mathematics*. From 2004 – 2007, I served on the editorial panel for the *Mathematics Teacher*; during this time, I edited the *Mathematics Teacher* 100th Anniversary special issue published in January, 2007. I am currently the North Carolina eastern region vice-president for colleges. I have been a member of RCML since 2006, and I would be honored to serve on the conference committee.

INVESTIGATIONS IN MATHEMATICS LEARNING

Sheryl A. Maxwell

VP for Publications
smaxwell@memphis.edu

Volume Four of our journal, *Investigations in Mathematics Learning*, is in production with your receipt of this number one issue coming soon. Although we had hoped to have it mailed by now, there seems to have been a delay at the printer's end. We have labeled it the "Fall Edition 2011" for this very reason, as we depend on the printer's schedule as to when it is mailed.

We continue to have a healthy subscription list that keeps us producing more issues. I can hardly believe that it has been nearly four years since we mailed our first issue of Volume One. Activities at my processing sight have slowed to a small roar that occurs from time to time, instead of continually. A few subscribers still have not adjusted to the Academic Year payment due in the summer prior to production of the next volume. Consequently, there are e-mails, phone calls, and answers to queries sent continually to satisfy the customers.

The actual production of an issue occurs in four-month cycles, thus the reason for having three issues of *Investigations in Mathematics Learning* per volume. This production cycle occurs after the articles have been selected for print by the Editor, Dr. Jean Schmittau, gathered in a cluster for an issue, all editorial corrections received, and the three or four articles typeset by the printer. After several copyediting eyes including the authors view these drafts, the final PDF file is sent to the printer for printing. I send the database addresses of current paid subscribers to the printer for the envelope completion at the end of the cycle. We have changed the process so that I send out all journal issues to overseas sites, as special handling is needed. Additionally, I receive extra journal issues for new subscribers during the year and to send replacement issues for those issues lost in the mail.

We appreciate your continued interest in supplying well-written articles for the journal. I hope you agree that the quality of the journal, *Investigations in Mathematics Learning*, is excellent; the variety of research is both interesting and insightful. Enjoy reading and referring to the issues during the coming academic years. Please promote our journal to your colleagues and students at your college/university, so we can receive even more subscriptions during this

academic year.

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