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# PCSM NEWSLETTER

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Leaders in Mathematics Education

Fall 2002

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## PENNSYLVANIA COUNCIL OF SUPERVISORS OF MATHEMATICS

### PRESIDENT'S MESSAGE

*From the President*

- Carolyn Marchand

Another school year gives us opportunities to create learning environments which incorporate new ideas. Plan to share some of yours at the annual conference at Split Rock-Poconos March 13, 2003. Also, NCTM's Regional Conference is November 14-16 in Boston.

If you are looking for answers to educational questions, *Ed Thoughts, What We Know About Mathematics Teaching & Learning* (Edited by J. Sutton and A. Brueger, Mid-continent Research for Education and Learning [McREL], 2002 - see [www.mcrel.org](http://www.mcrel.org)) may have the answers. The book contains summaries of answers from education research and classroom practices. Questions concerning K-12 education are answered by research and best practice information on one page and classroom implications and references on the other. I will be glad to lend my copy which was sent last year to NCSM members.

This Fall I received a copy of *American Educator*, (Volume 26, Number 2, Summer, 2002) the journal of the AFT (American Federation of Teachers). It features an analysis of mathematics curricula of high achieving

countries compared with that of the USA. Some of the charts provide a visual comparison which might be useful for curriculum and professional development.

The president-elect and treasurer will be elected in 2003. The president-elect "shall have served at least one year on the Executive Board." Send nominations to Bernie Schroeder (717-872-3009 or email: [bschroed@marauder.millersv.edu](mailto:bschroed@marauder.millersv.edu)) by November 1, 2002. I hope all your changes are productive this year.

Carolyn Marchand  
(814) 362-7324  
[marchand@pennswoods.net](mailto:marchand@pennswoods.net)

#### In this Issue:

- President's Message
- Honoring Frank Reardon
- IMAGES
- Upcoming Events
- Electronic Resources
- Hot Topic: Lesson Study
- PCSM Membership Form
- ...and more

## PCSM HONORS FRANK REARDON

The PCSM Executive Board unanimously decided to make a contribution to the National Council of Teacher of Mathematics (NCTM) in memory of Frank Reardon. His passing was a great loss to our organization and the Pennsylvania Department of Education (PDE). Throughout his career he played an important role in mathematics education and became a true colleague and friend. In April of 2002, we made a contribution in his name to The Mathematics Education Trust (MET) of NCTM. This August PCSM received both a letter and a certificate signed by Jim Rubillo, the Executive Director of NCTM, thanking us for our support. Not only did our gift honor Frank, but it also helped MET award scholarships and grants for providing high-quality mathematics learning experiences for all students - a true tribute to Frank's dedication to mathematics education.

Kathy Hebert  
PCSM Treasurer and Membership Chair

### Free from RBS ENC Focus on Content Knowledge

"Increasing Your Mathematics and Science Content Knowledge: is the theme of the latest issue of *ENC Focus* (a Magazine for Classroom Innovators) published by The Eisenhower National Clearinghouse. It includes an article by a mathematics teacher and a physics teacher who learned each other's specialty as they developed a calculus-based physics course. Also included is an interview with mathematics education researcher Liping Ma.

To request a copy visit the "Free Publications" of the Mid-Atlantic Eisenhower consortium at [http://www.rbs.org/mathsci/free\\_pubs/](http://www.rbs.org/mathsci/free_pubs/).

*From the Editor*

- Arlene Dowshen

Greetings to all PCSM members, particularly our new members! Our membership has increased which hopefully reflects an increased interest in mathematics education. Please read the article about the IMAGES project. A number of PCSM members (myself included) were involved in this exciting professional development initiative of the PA State Team of the Mid-Atlantic Eisenhower Consortium.

I encourage you to share this newsletter with your colleagues and encourage other mathematics leaders in your schools or communities to join PCSM. A membership application is included in the newsletter; duplicate as needed.

Arlene L. Dowshen  
Widener University  
One University Place  
Chester, PA 19013  
(610) 499-1245  
[dowshen@maths.widener.edu](mailto:dowshen@maths.widener.edu)



**IMAGES: A PA STATE TEAM  
PROFESSIONAL DEVELOPMENT  
INITIATIVE**

**by Alison Rooney  
Research for Better Schools**

It is late on a hot morning at Muhlenberg College in early July, and a room full of teachers and administrators make exclamations to one another of surprise and amusement. They have just learned for themselves how a simple series of folds can transform a two-dimensional circle into a three-dimensional truncated pyramid. This activity, guided by two education specialists, reveals exactly the spirit of discovery and exploration that brought the educators here during their summer vacation. The members of the Pennsylvania State Team for Mathematics and Science Education of the Mid-Atlantic Eisenhower Consortium devised these intensive, two-day summer institutes as part of a statewide project IMAGES (Improving Measurement and Geometry in Elementary Schools). After seeing first-hand the success of their efforts, they are confident that teachers will bring back to their classrooms and fellow teachers not only this enthusiasm, but also know-how of some specific mathematics content.

The IMAGES institutes sought to expand teachers' skills and knowledge in five content areas related to geometry and measurement, and - more importantly - served as a training for trainers, to prepare them for leadership roles in assisting other teachers to raise students' performance in the areas of geometry and measurement through standards-based instruction. "We targeted this subject in particular because of low student performance in that area and decided that the best way to make a difference was to pool our resources to create a comprehensive mathematics initiative, all in the spirit of excellence and collaboration,"

says Janie Zimmer of Research for Better Schools (RBS), who led the PA State Team in organizing the institutes and creating all the support materials.

Members of the PA State Team, including educators from college-level institutions, led sections that involved significant teacher participation. The workshops modeled the kinds of exploration and open-ended activities that IMAGES participants are encouraged to recreate back in their own schools. The use of many colorful, fun, and easy-to-use manipulatives supported visualization skills and made the session activities concrete.

Presenters touched on the real-life applications of activities as well as relevant developmental issues. The participants were extremely creative and genuinely excited about the discoveries they themselves were making, often learning that they did not always know the best way to approach a problem until they had received input from the rest of the group. Presenters were particularly careful to pay attention to the level of vocabulary used with teachers, and whether it would need to be adapted for use with students at various levels.

Included in an IMAGES binder distributed to all 192 participants at three different sites were 28 lesson plans for geometry and measurement, each including the relevant NCTM and PA standards for mathematics, specific instructions for procedures, and related handouts. In addition to the binder were a 232 page print publication and an interactive Web site - both with suggestions for further reading, sections on developmental and cognitive issues, best practices and assessment strategies, tips for optimal uses and integration of technology, and many additional lesson plans and activities.

(Continued on page 4)

(Continued from page 3)

In order to expand teachers' conceptual understanding of geometry and measurement, the IMAGES institutes and publications introduce content for teachers at a level higher than what their elementary-level students are expected to learn. "The idea is that a higher level of mastery is intricately connected to teachers' ability to convey what students *do* need to know," says Zimmer, "and this also helps teachers to put that knowledge in the context of what students will need to learn in later grades. We realize how important the elementary years are in students' careers of mathematics learning."

The Pennsylvania State Team encourages you to join them. To learn more about the IMAGES program, the PA State Team, or about the possibilities for your school or school district, call (215) 574-9300, email [rocca@rbs.org](mailto:rocca@rbs.org), or visit <http://www.rbs.org/mathsci/states/pa/team.shtml>.

Visit the *IMAGES* Web site at  
<http://images.rbs.org>

### Toyota's Investment in Mathematics Excellence (TIME)

TIME is granting awards of up to \$10,000 to teachers for innovative projects that enhance mathematics education within a school. This grant is sponsored by Toyota Motor Sales, USA., Inc. through its partnership with NCTM and its Mathematics Education Trust Board. Any K-12 classroom teacher with 3 years of experience teaching mathematics within the United States is eligible to apply for this award. The deadline for applications is January 8, 2003. For information email [toyotatime@nctm.org](mailto:toyotatime@nctm.org) or visit <http://www.nctm.org/about/toyota/index.asp>. The Web site contains short summaries of projects awarded grants in previous years.

## UPCOMING EVENTS

**Sign up for an NCTM Academy Institute this Fall**  
Register for the Geometry and Algebra Institutes at  
<http://www.nctm.org/academy/schedule.htm>

**15<sup>th</sup> International Conference on Technology in Collegiate Mathematics (ICTCM)**  
October 31 - November 3, 2002.  
Hilton in the Walt Disney World Resort, Orlando, FL  
For more information visit: <http://www.ictcm.org>.

**NCSM pre-Session for Math Education Leaders**  
November 13, 2002, Boston Park Plaza Hotel

**NCTM Eastern Regional Conference**  
"Reaching New heights in the Teaching and Learning of Mathematics - Another Revolutionary Event in Boston!"  
November 14-16, 2002, Boston, MA  
For more information or to register visit: <http://www.nctm.org/meetings/boston/>

**AMTE (Association of Mathematics Teacher Educators) Pre-Conference - Middle School Mathematics Teacher Preparation**  
January 30, 2003, Marriott Atlanta Airport Hotel  
Registration form and draft agenda available at  
<http://showmecenter.missouri.edu/AMTE>.

**AMTE 7<sup>th</sup> Annual Conference**  
January 30 - February 1, 2003, Atlanta, GA  
For more information visit: [www.amte.net](http://www.amte.net).

**15<sup>th</sup> Annual T<sup>3</sup>™ International Conference**  
March 7-9, 2003, Nashville, TN  
For more information visit: [education.ti.com](http://education.ti.com)

**PCSM Annual Conference**  
March 13, 2003, Split Rock Lodge in the Poconos

**PCTM Annual Conference - Achieving a Balanced Curriculum**  
March 13-15, 2003, Split Rock Lodge in the Poconos  
For more information visit: [www.pctm.org](http://www.pctm.org).

**NCSM 35<sup>th</sup> Annual Conference - Achieve Excellence: Focus on Knowledge, Practice, and Policy**  
April 7-9, 2003, San Antonio, TX  
For more information visit: [nctmonline.org](http://nctmonline.org).

**NCTM Annual Conference**  
April 9-12, 2003, San Antonio, TX  
For more information go to [www.nctm.org](http://www.nctm.org).

**ELECTRONIC RESOURCES**

Free **NASA Distance Learning Programs** Connect Classrooms to "Real World Mathematics and Science - Research and standards-based programs introduce students to inquiry and proportional reasoning. Visit: <http://hsor.org>.

Celebrate **National Metric Week** - October 6-12, 2002. Information and ideas for lessons can be found at <http://www.nctm.org/meetings/metric-week.htm>.

**2000 National Survey of Science and Mathematics Education** - this new report describes the status of science and mathematics education in kindergarten through 12<sup>th</sup> grade in the U.S. The study was conducted by Horizon Research, Inc. with support from the National Science Foundation. The full report can be accessed at <http://2000survey.horizon-research.com/>.

The Math Forum's popular **Problems of the Week** for Grades 3-12 are up and running again. Visit the Web site at <http://mathforum.org/pow/>.

Visit **ON-Math**, NCTM's new online-only school journal. ON-Math is a peer-reviewed journal developed and designed exclusively for the Web. Articles are available for teachers at all grade levels. Browse through the premier issue at <http://www.nctm.org/onmath/>.

**EQUALS and Family Math**

EQUALS has new and exciting workshops and in 2003 *Family Math II, Achieving Success in Mathematics* will be available. For more information visit the EQUALS Web site at <http://www.lawrencehallofscience.org/equals>.

**HOT TOPIC: Lesson Study**

What is Lesson Study? While its practice in the United States is limited, lesson study has a long and well-documented history in Japan, where it is the most common form of teacher professional development. The TIMSS videotapes of Japanese mathematics classrooms inspired Paterson School 2 in New Jersey to become a pioneer of lesson study in the U.S. for the last three years.

A collection of links to articles, research reports, and projects related to lesson study is located at [http://www.rbs.org/lesson\\_study/readings\\_resources.shtml](http://www.rbs.org/lesson_study/readings_resources.shtml).

The spring 2002 issue of *RBS Currents* which is available online at <http://www.rbs.org/currents/0502/index.shtml> features the following articles on lesson study:

Lesson Study Brings Rewards and Challenges  
From the Teacher: Facing the Challenges of Lesson Study  
From the Principal: It's A Matter of Time  
Ridge High School Pilots Lesson Study  
Delaware Supports Lesson Study  
The Role of "Knowledgeable Others" in Lesson Study  
Lesson Study Guidelines for Observations and Debriefing

For online exclusives featuring Makoto Yoshida, Catherine Lewis, and future prospects for lesson study visit: [http://www.rbs.org/currents/0502/future\\_prospects.shtml](http://www.rbs.org/currents/0502/future_prospects.shtml).

A new book on lesson study is available through RBS: *Lesson Study: A Handbook of Teacher-Led Instructional Change* by Catherine Lewis. Visit RBS's Publications on line ([www.rbs.org](http://www.rbs.org)).



# **Pennsylvania Council of Supervisors of Mathematics**

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**PCSM Newsletter**  
**Arlene Dowshen, Editor**  
**920 Spruce Street, #3**  
**Philadelphia, PA 19107**