

**Research Council for Diagnostic  
and Prescriptive Mathematics**

*Twenty-fifth Annual Conference*

**College Park, Maryland  
February 19-21, 1998**

**General Conference Chair**

**Martin L. Johnson**

College of Education  
University of Maryland  
College Park, Maryland

**Conference Program Co-Chairs**

**Anna Graeber and Marilyn Strutchens**

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SUNY Binghamton

**Jayne Fleener**

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University of Texas

**Kathy Litz**

**Secretary**

K.O. Knudson Middle School,  
Clark County School District, NV

**George Wyer**

**Membership Coordinator**

Retired from West Hartford  
Public Schools

**RCDPM Conference Committee Members:** Dan Brahier, David Davidson, Margie Mason, Karen Norwood, Caroline Pinchback, and Alan Zollman

The 25th Annual RCDPM Conference was funded in part by the  
Department of Curriculum and Instruction  
College of Education  
University of Maryland  
College Park

# CONFERENCE PROGRAM

THURSDAY, FEBRUARY 19, 1998

8:00 - 11:30 RCDPM Executive Committee Meeting Room 2119

11:30 - 5:00 REGISTRATION OPEN Second Floor  
Stair Landing

1:00 - 1:50

◆ **Beginning Secondary Mathematics Teachers' Personal Theories about Teaching and Learning and the Realities of Practice** Room 2101  
*Victoria B. LaBerge, Northern Illinois University*  
*Diana Steele, Northern Illinois University*

◆ **Including All Learners in a Third Grade Community of Mathematics** Room 2103  
*Lisa Pericola Case, University of Maryland*

◆ **Secondary Students' Knowledge Pertaining to Linear Equations** Room 2105  
*David K. Pugalee, University of North Carolina at Charlotte*

2:00 - 2:50

◆ **Students' Difficulties in Applying Mathematics for Solving Physics Problems** Room 2101  
*Gilli Shama, University of Maryland*  
*Edward Redish, University of Maryland*

◆ **A Grounded Model of Mathematics Learning** Room 2103  
*Jon M. Engelhardt, Wichita State University*

◆ **Preservice Preparation and Middle School Mathematics** Room 2105  
*Kimberly Sapp, Texas A&M University*

2:50 - 3:10 Refreshment Break Second Floor

THURSDAY, FEBRUARY 19

3:15- 4:15

- ◆ **How Do We Develop Students Who Think Algebraically?** **Room 2101**  
Ann R. Crawford, *University of North Carolina - Wilmington*  
Sid Rachlin, *East Carolina University*
  
- ◆ **The Connection Between Teacher's Misconceptions About Mathematics and Students' Achievement Outcomes in Elementary School Mathematics** **Room 2103**  
Taanya Monogue, *Texas A&M University*  
and  
**Preservice Teachers Learning to use Manipulatives to Teach Whole Number Operations**  
Enrique Ortiz, *University of Central Florida*
  
- ◆ **The Graphical Construction of Functional Sums** **Room 2105**  
Frank B. Pullano, *University of Virginia*  
and  
**Research on the Understanding and the Teaching of Mathematical Modeling: From a Literature Review to Directions for the Future**  
Gilli Shama, *University of Maryland*  
John Layman, *University of Maryland*

4:30 - 6:00 **Plenary Session:**

**Room 2103-  
2105**

**Theme Panels' Preview of Sessions to Come  
What Have Been and What Are The Issues in ....**  
Moderator: Melfred Olson

**Diagnosis and Assessment** Presenter, Alan Zollman  
**Instructional Tools and Strategies** Presenter, Kay Wohlhuter  
**Special Education** Presenters, Claudia Pagliaro and Bea Babbitt  
**Teacher Education** Presenter, Virginia Usnick

**Dinner on Your Own** Trips to nearby Vietnamese, Indian, or seafood restaurants will be organized. See conference registration desk, second floor. Or, eat on site at THE GARDEN RESTAURANT.

**FRIDAY, FEBRUARY 20th**

**7:00 - 8:00 Continental Breakfast**

**7:00 - 11:00 and 1:30 - 3:00 REGISTRATION OPEN**

**Second Floor  
Stair Landing**

**8:00 - 8:50 AM**

- ◆ **Enhancing Secondary Teachers'  
Manipulative-based Teaching Repertoire** **Room 2101**  
Juli Dixon, *University of Nevada, Las Vegas*
- ◆ **Learners As Complex Adaptive Agents:  
Implications for Mathematics Education Research  
in the Future** **Room 2103**  
Jayne Fleener, *University of Oklahoma*
- ◆ **A Session Sponsored by the Instructional Strategies  
and Tools Theme Group** **Room 2105**  
**Problem Solving and Manipulatives**  
Melfred Olson, *Western Illinois University*  
**and**  
**What Do They Know? What Would We Like Them to Learn?**  
**Cooperative Learning as an Answer**  
Lynae Sakshaug, *Western Illinois University*
- ◆ **The Changing Nature of University and Common  
School Partnerships With Respect to Teacher  
Professional Development** **Room 2117**  
Roland Pourdavood, *Cleveland State University*

**FRIDAY 9:00 - 10:15 John Wilson Memorial Lecture** **Room 2103 -**  
**Dr. Robert Slavin, Johns Hopkins University** **2105**

Dr. Slavin is currently Co-Director of the Johns Hopkins University Center for Research on the Education of Students Placed at Risk. He received his B.A. in Psychology from Reed College, and his Ph.D. in Social Relations from Johns Hopkins University. Dr. Slavin has co-authored more than 180 articles and 15 books, including *School and Classroom Organization*; *Cooperative Learning: Theory, Research and Practice*; and *Every Child, Every School: Success for All*. He received the American Education Research Association's Raymond B. Cattell Early Career Award for Programmatic Research, the Palmer O. Johnson award for the best article in an AERA journal in 1988, and the Charles Dana award in 1994. Robert Slavin is currently a candidate for president of AERA.

The Wilson Memorial Lecture is an annual lecture established by the RCDPM Executive Committee as a result of a memorial fund instituted by Dr. Wilson's family. John Warner Wilson, a founding member of RCDPM, died while attending the annual RCDPM Conference held in Tampa, Florida. Dr. Wilson was on the Faculty of the University of Maryland from 1969 until his death in 1979. He was Director of the Arithmetic Clinic and Professor of Mathematics Education at the University of Maryland.

Dr. Wilson held a liberal arts degree from Bowling Green State University, a masters degree in epistemology from Harvard, and a Ph.D. degree in Education from Syracuse. After service in the Army, he became a kindergarten and later a second grade teacher on the Onadaga Indian Reservation in New York State. In the early 1960's he directed the country's first arithmetic clinic. That clinic was begun by Dr. Vincent Glennon for the diagnostic study and treatment of learning problems in mathematics.

**FRIDAY 10:30 - 11:20**

- ◆ **Using Time Series Analyses to Understand the Complexity of the Classroom with Regard to Mathematics Instruction, Sociocultural Norms, and Sociomathematical Norms** Room 2101  
Sheila Brintnall, *University of Oklahoma*  
Jayne Fleener, *University of Oklahoma*
- ◆ **MathWings: Unfettered to Fly or Stifled by Strategies?** Room 2103  
Sheryl A. Maxwell, *University of Memphis*
- ◆ **Graphing Calculator-Associated Misconceptions Among High School Students** Room 2105  
Robin Ward, *California Polytechnic State University*
- ◆ **Performance-Based Assessment of Beginning Mathematics Teachers: The INTASC Project** Room 2117  
William B. Weber, Jr., *University of Toledo*

**11:45 - 1:30 Lunch and Annual Business Meeting** Chesapeake Room

**1:45 - 2:45 Sessions Sponsored by the 25th Anniversary Theme Groups**

- ◆ **Diagnosis and Assessment:** Room 2101  
Robert Ashlock and Alan Zollman, Organizers  
  
**Classroom Assessment as a Window on Students' Thinking: Recommendations for Learning, Teaching, and Teacher Education**  
George Bright, *University of North Carolina - Greensboro*  
and  
**Assessment as a Lever to Reform Teaching and Curriculum**  
Daniel Brahier, *Bowling Green State University*  
William Speer, *University of Nevada - Las Vegas*
- ◆ **Instructional Strategies and Tools:** Room 2103  
Judith Olson and Kay Wohlhuter, Organizers  
  
**The Use of Technology as a Teaching Tool and Strategy in Mathematics**  
James Olsen, *Western Illinois University*  
and  
**Integrating Technology into the Elementary School Curriculum**  
Judith Olson, *Western Illinois University*  
and  
**Technology Tools Provide New Insights into the Teaching and Learning of Mathematics and the RCDPM Mission**  
George Wyer, *Retired from West Hartford Public Schools*

**FRIDAY 1:45 - 2:45 continued**

- ◆ **Special Education:** Room 2105  
Claudia Pagliaro and Bea Babbitt, Organizers

- ◆ **Teacher Education:** Room 2117  
Virginia Usnick and Sue Brown, Organizers; David Boliver, Presider  
**A Historical View of Teacher Education**  
Grace M. Burton, *University of North Carolina - Wilmington*  
and  
**Current Events in Teacher Education**  
Bill Speer, *Bowling Green State University*  
and  
**Future Trends in Teacher Education**  
Jon Englehardt, *Wichita State University*

**2:45 - 3:05 Refreshment Break** Second Floor  
Stair Landing

**3:05 - 4:05**

*Sessions Sponsored by the 25th Anniversary Theme Groups*

- ◆ **Diagnosis and Assessment:** Room 2101  
Robert Ashlock and Alan Zollman, Organizers  
**A Panel Discussion of Issues and Directions**

- ◆ **Instructional Strategies and Tools:** Room 2103  
Judith Olson and Kay Wohlhuter, Organizers  
**A Panel Discussion of Issues and Directions**

- ◆ **Special Education:** Room 2105  
Claudia Pagliaro and Bea Babbitt, Organizers  
**Diagnostic and Remedial Perspectives  
in Mathematics Learning Problems**  
Mahesh Sharma, *Center For Learning and Teaching Mathematics*

- ◆ **Teacher Education:** Room 2117  
Virginia Usnick and Sue Brown, Organizers  
David Boliver, Presider  
**A View from the Classroom**  
Kathy Litz, *K.O. Knudson Middle School, Clark County School District*

**4:15 - 4:45**

- ◆ **Publishing in *FOCUS on Learning Problems in Mathematics*** Room 2101  
Jean Schmittau, State University of New York - Binghamton  
Margot Vagliardo, State University of New York - Binghamton

*FOCUS—On Learning Problems in Mathematics* is an inter-disciplinary journal, edited jointly by the Research Council for Diagnostic and Prescriptive Mathematics (RCDPM) and the Center for Teaching/Learning of Mathematics (CT/LM). The types of manuscripts sought for *FOCUS* include reports of research on processes, techniques, tools and procedures useful for addressing problems in mathematics teaching and learning, descriptions of methodologies for conducting, and reporting and interpreting the results of various types of research, research-based discussions of promising techniques or novel programs, and scholarly works such as literature reviews, philosophical statements or critiques.

**6:00 Conference Dinner**

**Chesapeake Room**

**SATURDAY, FEBRUARY 21**

**7:00 - 8:00 Continental Breakfast**

**Second Floor  
Stair Landing**

**7:00 - 11:00 REGISTRATION OPEN**

**Second Floor  
Stair Landing**

**8:00 - 9:15**

- ◆ **High School:** **Room 2101**  
**A Constructivist Approach to Geometry**  
*W. Gary Martin, National Council of Teachers of Mathematics*
- ◆ **Elementary School:** **Room 2103**  
**Exploring the Mathematics in Children's Literature**  
*Grace M. Burton, University of North Carolina -Wilmington*
- ◆ **Middle School:** **Room 2105**  
**Making Sense of Graphs: Theory Development  
for Instruction**  
*Susan N. Friel, University of North Carolina - Chapel Hill*

**9:30 - 10:45**

- ◆ **Elementary School:** **Room 2101**  
**The NCTM Standards in a Third Grade Classroom**  
*Catherine Lindenmann, Forest Ridge Elementary School,  
Howard County*
- ◆ **Middle School:** **Room 2103**  
**Teaching Statistics for Understanding**  
*Donnette Dais, On leave from Parkland Middle School,  
Montgomery County*
- ◆ **High School:** **Room 2105**  
**Discrete Mathematics**  
*Frederick Thomas and Michele Williams  
Forestville High School, Prince Georges' County*
- ◆ **Theme Groups:** **Room 2117**  
**Round Table Report**  
*Diagnosis and Assessment Presenter, George Bright  
Instructional Tools and Strategies Presenters, Judith Olson and Kay Wohlhuter  
Special Education Presenters, Claudia Pagliaro and Bea Babbitt  
Teacher Education Presenters, Susan Brown*



**SATURDAY, FEBRUARY 21**

**11:00 - 12:15**

- ◆ **Elementary School:** **Room 2101**  
**NAEP Data and the Classroom Teacher**  
Marilyn Strutchens, *University of Maryland*
  
- ◆ **Middle School:** **Room 2103**  
**Eighth Graders' Concepts of Area**  
Pat Lamphere, *Oklahoma State University*
  
- ◆ **High School:** **Room 2105**  
**Algebra II as Influenced by the NCTM Standards  
and Block Scheduling**  
Catherine VanNetta, *Mt. Hebron High School, Howard County*
  
- ◆ **Theme Group Session, Continued** **Room 2117**  
**Round Table Discussion on Theme Group Sessions,**  
***Everyone is invited to join in the discussion***  
Diagnosis and Assessment Presenter, George Bright  
Instructional Tools and Strategies Presenters, Judith Olson and Kay Wohlhuter  
Special Education Presenters, Claudia Pagliaro and Bea Babbitt  
Teacher Education Presenter, Susan Brown

**12:30 - 12:45 Brief Plenary- Conference Close:** **Room 2117**  
**Looking Toward the Next 25 Years**  
Martin Johnson, *University of Maryland*  
Bill Speer, *University of Nevada -Las Vegas*

**1:30 - 4:00 RCDPM Executive Committee Meeting** **Room 2119**

**Enjoy the Washington area: Inside or outside the beltway  
there is plenty to do!**

Please thank all of the presenters and especially the strand organizers: Robert Ashlock, Bea Babbitt, Sue Brown, Claudia Pagliaro, Judith Olson, Virginia Usnick, Kay Wohlhuter, and Alan Zollman.

Sincere thanks also go to Ethel Greer, Elaine Henry, and Eileen Banner who gave their secretarial skills and support to this conference. Also many thanks to Donnette Dais, Bonnie Handel, Jody Magner-Wuertzer and Ann Wallace for their help at the registration table.

## PARTICIPANT INDEX

Ashlock, Robert	Fri. 1:45 & 3:05
Babbitt, Bea	Thurs. 4:30; Fri. 1:45 & 3:05; Sat. 9:30 & 11:00
Boliver, David	Fri. 1:45 & 3:05
Brahier, Daniel J.	Fri. 1:45
Bright, George W.	Fri. 1:45; Sat. 9:30 & 11:00
Brintnall, Sheila	Fri. 10:30
Brown, Sue	Fri. 1:45 & 3:05; Sat. 9:30 & 11:00
Burton, Grace M.	Fri. 1:45; Sat. 8:00
Case, Lisa Pericola	Thurs. 1:00
Crawford, Ann R.	Thurs. 3:15
Dais, Donnette	Sat. 9:30
Dixon, Juli K.	Fri. 8:00
Engelhardt, Jon M.	Thurs. 2:00; Fri. 1:45
Fleener, M. Jayne	Fri. 8:00; Fri. 10:30
Friel, Susan N.	Sat. 8:00
Johnson, Martin	Sat. 12:30
LaBerge, Victoria B.	Thurs. 1:00
Lamphere, Pat	Sat. 11:00
Layman, John	Thurs. 3:15
Lindenmann, Catherine	Sat. 9:30
Liz, Katy	Fri. 3:05
Martin, W. Gary	Sat., 8:00
Maxwell, Sherry A.	Fri., 10:30
Mongoose, Teeny	Thurs. 3:15
Olden, James	Fri. 1:45
Oslo, Judith	Fri. 1:45 & 3:05; Sat. 9:30 & 11:00
Oslo, Melfred	Fri. 8:00
Orates, Enrique	Thurs. 3:15
Pagliari, Claudia	Thurs. 4:30 Fri. 1:45 & 3:05; Sat. 9:30 & 11:00
Pourdavood, Roland G.	Fri. 8:00
Pugalee, David K.	Thurs. 1:00
Pullano, Frank B.	Thurs. 3:15
Rachlin, Sid	Thurs. 3:15
Redish, Joe (Edward)	Thurs. 2:00 Sakshaug, Lynae Fri. 8:00
Sapp, Kimberly	Thurs. 2:00
Schmittau, Jean	Fri. 4:15
Shama, Gilli	Thurs. 2:00 & 3:15
Sharma, Mahesh	Fri. 3:05
Slavin, Robert	Fri. 9:00
Speer, Bill	Fri. 1:45; Sat. 12:30
Steele, Diana F.	Thurs. 1:00
Strutchens, Marilyn	Sat. 11:00
Thomas, Frederick	Sat. 9:30
Usnick, Virginia	Thurs. 4:30; Fri. 1:45 & 3:05
Vagliardo, Margot	Fri. 4:15
Vanetta, Catherine	Sat. 11:00
Ward, Robin	Fri. 10:30
Weber, William B.	Fri. 10:30
Williams, Michelle	Sat. 9:30
Wohlhuter, Kay	Thurs. 4:30; Fri. 1:45 & 3:05; Sat. 9:30 & 11:00
Wyer, George	Fri. 1:45
Zollman, Alan	Thurs. 4:30; Fri. 1:45 & 3:05

## Past RCDPM Conference Sites

- 1974 - National Conferences
- 1975 on Remedial Mathematics,
- 1976 Kent State University, OH
- 1977 - Fourth, University of Maryland, College Park, MD [1]
- 1978 - Fifth, Arizona State University, Tempe, AZ [2]
- 1979 - Sixth, University of South Florida, Tampa, FL
- 1980 - Seventh, University of British Columbia, Vancouver, B.C. [3]
- 1981 - Eighth, Penn State University, Hershey, PA
- 1982 - Ninth, State University of New York, Buffalo, NY
- 1983 - Tenth, Bowling Green State University, Bowling Green, OH
- 1984 - Eleventh, University of California, San Francisco, California. [4]
- 1985 - Twelfth, University of Texas, Austin, TX
- 1986 - Thirteenth, University of Maryland, College Park, MD
- 1987 - Fourteenth, University of California at Los Angeles, Lake Arrowhead, CA
- 1988 - Fifteenth, New Orleans, LA
- 1989 - Sixteenth, Texas A&M University, College Station, TX
- 1990 - Seventeenth, Galludet University, Washington, D.C.
- 1991 - Eighteenth, California State Polytechnic, Pomona, CA
- 1992 - Nineteenth, Trenton State College, Princeton, NJ
- 1993 - Twentieth, University of Central Florida, Melbourne, FL
- 1994 - Twenty-first, Fort Worth, TX
- 1995 - Twenty-second, University of Nevada at Las Vegas, Las Vegas, NV.
- 1996 - Twenty-third, University of Central Florida, Melbourne, FL
- 1997 - Twenty-fourth, University of Oklahoma and University of Central  
Oklahoma, Oklahoma City, OK
- 1998 -Twenty-fifth, University of Maryland, College Park, MD
- 1999 -Twenty-sixth, ?

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[1] Officers were elected, including Robert Ashlock, Thomas Romberg, Michael Hyenas, Martin Johnson, and Jon Engelhardt. James Hidden was elected as the first RCDPM President.

[2] The RCDPM incorporated at this meeting.

[3] First annual John Wilson Memorial Lecture given by Vincent Glennon.

[4] RCDPM affiliated with the journal *FOCUS: On Learning Problems in Mathematics*.

### MISSION

RCDPM seeks to simulate, generate, coordinate and disseminate research efforts designed to understand and/or overcome factors that inhibit maximal mathematics learning.

