

Research
Council for
Diagnostic and
Prescriptive
Mathematics



Twentieth
Anniversary
Conference

Holiday Inn Oceanfront
Melbourne, Florida
February 11-13, 1993

RCDPM
1993 Conference Program
 February 11 - 12 - 13, 1993
 Holiday Inn Oceanfront

Executive Committee

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- President-Elect - Martin L. Johnson
- Vice President for Conferences - C. J. (Doc) Dockweiler
- Vice President for Publications - William Speer
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- 1993 Conference Chair - Martha (Marty) Hopkins
- 1993 Program Chair - James W. Heddens
- Publicity - Janet K. Scheer

Conference Committee

- | | |
|--------------------------------|----------------|
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| David Boliver | Dawn Hoyt Kidd |
| Diana Jordan | Ann Sullivan |
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RCDPM
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Twentieth year reception in honor of the founding members
 February 11, 1993 Holiday Inn Melbourne Oceanside

Founding Members

Name	University
Robert Ashlock	Covenant College
Doug Brumbaugh	University of Central Florida
Roy Callahan	State University of New York - Buffalo
Lelon Capps	University of Kansas
John Crenson	Deceased
Tom Denmark	Florida State University
Jon Engelhardt	Northern Arizona University
E. Glenadine Gibb	Deceased
James W. Heddens	University of Central Florida
Michael Hynes	University of Central Florida
Jerry Irons	Stephen F. Austin University
Martin L. Johnson	University of Maryland
Ann McAloon	Retired
Alan Riedesel	State University of New York - Buffalo
Tom Romberg	University of Wisconsin - Madison
William Speer	Bowling Green State University
Robert Sovchik	University of Akron
Cecil Trueblood	Penn State University
Robert Underhill	VA Polytech Inst and State University
A. Edward Uprichard	University of N. Carolina at Greensboro
John Wilson	Deceased

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Welcome to the twentieth anniversary conference of the Research Council for Diagnostic and Prescriptive Mathematics. We cordially welcome you and hope this conference will be a professionally rewarding experience. Become an active member and participate in the research of the members of the organization. With the spirit of the founding members of the organization, the following suggestions are offered for your consideration.

1. Share your mathematical research ideas with as many members as possible.
2. As you are listening to a research presentation:
 - a. Think - How can you help in the research project being discussed?
 - b. Do - Offer to find a sample in your area that would fit into the population being considered.
 - c. Do - Obtain permission from the researcher to use the developed research instrument.
 - d. Do - Collect data and share them with the researcher.
3. Project how you could help in the researcher's literature review.
 - a. Think - What are the resources available at my own university/school?
 - b. Do - Offer to run a computer search at your university.
 - c. Do - Share the unique materials available at your university with the researcher.
4. How can you help strengthen the Research Council for Diagnostic and Prescriptive Mathematics?
 - a. Think - Do you know individuals who have interest in diagnostic and prescriptive mathematics?
 - b. Do - Help recruit individuals whose interests are compatible with the mission of RCDPM.
 - c. Do - Offer to collaborate on research with other RCDPM members.
 - d. Do - Write the elected officers and share your good ideas.
 - e. Do - Write articles and research reports for our journal **FOCUS**.

Support the RCDPM Mission Statement!

The Research Council for Diagnostic and Prescriptive Mathematics seeks to stimulate, generate, coordinate, and disseminate research efforts designed to understand and/or overcome factors that inhibit maximal mathematics learning.

RCDPM 1993 Conference Program

February 11-12-13, 1993
Holiday Inn Oceanfront

Thursday, February 11, 1993

12:00 - 12:30 RCDPM - Past and Present Room TBA
William Speer, Chair

1:00 - 2:30 Thematic Presentations: Barbados
Language/Writing

Melfried Olson, Chair

Presenters:

Charles Lamb
Gail Kirkwood
Alfred Anderson
George Bright
Nancy Nesbitt Vacc
Melfried Olson

Mathematics Clinics - Then and Now Aruba

Jon Engelhardt, Chair

Presenters:

Roy Callahan
Martin L. Johnson
Clyde Greeno
George Wyer
William Speer
Virginia Usnick
Anna Graeber

2:45 - 3:45 Small group discussions Barbados/Aruba

Discussion Leaders: Recorders:

Robert Ashlock	David Boliver
Doug Brumbaugh	Jerry Cummins
Tom Romberg	Diana Jordan
Bob Sovchik	Dawn Hoyt Kidd
Ed Uprichard	Janet Scheer

- 3:45 - 4:30 Focus on **FOCUS** Barbados
A discussion on how to use FOCUS as a forum for clinical and case study research.
Jean Schmittau & Jon Engelhardt, Chairs
- 4:30 - 5:00 Break
- 5:00 - 6:00 Reception honoring the founding members
Penthouse
- 6:00 - ??? Luau on the Beach

Friday, February 12, 1993

- 7:00 - 8:00 Continental breakfast Barbados/Aruba
- 8:00 - 8:50 Friday
Session 1 St. Anne
Assessing Individual Performance in Group Projects
A structured format will be presented that will help in assigning fair and objective grades to all group members who work together on a project.
Presenter - Sue Brown
- Session 2 St. Thomas
Mathematical Concepts Used in Science Classes: Moving toward an integrated Curriculum
A research report on mathematical concepts used in science classes. The focus of the research is to ascertain what factors prevent students from using their mathematics knowledge and skills in a variety of contexts.
Presenters - Jayne Fleener, Susan Westbrook, & Laura Rogers
- ✓ Session 3 St. Croix
Pre-rational Number Knowledge: Partitioning Strategies of Geometric Thinkers
A research report that isolates factors affecting how students construct rational number knowledge. Implications for the classroom will be discussed.
Presenter - Vicki Schell

Session 4 Martinique
Promoting Metacognition in Developmental Math Students

Literature seems to support that metacognition skills are a necessary condition for learning mathematics. Suggestions will be given for how instruction should be changed to address cognition metacognitively.
Presenters - Gwen Autin & Barbara Allen

Session 5 Antiqua
Assessment: Practices and Reporting Methods

Information concerning the methods used by leadership teams to inform the school community about changes in assessment practices will be presented.
Presenter - Mary Ellen Schmidt

9:00 - 9:50 Friday

Session 6 St. Anne
President's Hour - - The Prez's Parting Shots
Standards and reform in mathematics education - where do diagnosis and RCDPM fit?
Presenter - Francis (Skip) Fennell

✓ Session 7 St. Thomas
Sign Language and Geometry

A review of research and an outline of Van Hiele assessments and instructional activities in geometric thinking among deaf elementary school students and teachers will be considered. This session is related to the research to be presented by Marguerite Mason.
Presenter - Jerry Bryant

Session 8 St. Croix
The Kentucky Mathematics Intervention Process: a Constructionist Approach to the Remedial Framework, Grades k -12

Along with the theoretical and available resources, twenty-one valued outcomes will be described and an activity lesson plan will be presented.
Presenters - Alan Zollman & Ann Bartosh

Session 9 Martinique
The Effects of Two Different Teaching Strategies on Post-Secondary Developmental Mathematics Students

This study was concerned with evaluating which of two instructional settings is more successful in helping to remediate deficiencies of mathematics students.

Presenter - Harriet Lamm

Session 10 Antigua
Elementary Teachers' Concepts of Statistics

A three year study to help elementary school teachers learn how to teach data analysis and data interpretation more effectively.

Presenters - George Bright, Sarah Berenson, & Susan Friel

9:50 - 10:10 Break

10:10 - 11:00 Friday

Session 11 St. Anne

Teacher Education: Probing Questions During Clinical Diagnostic Interviews

Illustrations of probing questions, to examine reasons for a mathematics difficulty, used during clinical diagnostic interview, and suggestions for teacher education procedures will be presented.

Presenter - Phyllis Kavet

Session 12 St. Thomas
Mathematics Enrichment for Elementary School Teachers

A method for improving the mathematics skills of prospective elementary teachers will be presented.

Presenter - Paula Gnepp

Session 13 St. Croix
Humanizing the Multiple-Choice Test With Partial Credit

An innovative assessment instrument that increases the intelligent use of multiple-choice testing and lowers student anxiety will be discussed.

Presenter - Barry Cherkas

Session 14 Martinique
Assessing Children's Thinking: The Role of Informal Algorithms

Young children's thinking will inform educators about the development of place value in an effort to support meaningful mathematics teaching and learning.

Presenter - Deborah Carey

Session 15 Antigua
A Survey to Identify the Degree of Importance Given to the NCTM's Curriculum Standards by Student Teachers

The degree of importance which teachers assign to each of the standards will, in part, influence their implementation.

Presenter - Robert Cunningham

11:00 - 12:00 Friday

Session 16 St. Anne
The Role of Language in the Acquisition of Geometric Knowledge Among the Deaf

This study focuses on the levels of geometric understanding and misconceptions among five deaf children. This report is related to the presentation by Jerry Bryant.

Presenter - Marguerite Mason

Session 17 St. Thomas
Preservice Teacher's Visual Approaches to Problem Solving

Sample drawings will be discussed and analyzed. Implications of teacher's abilities to implement the NCTM standards will be included.

Presenters - Virginia Usnick & Linda Zech

Session 18 St. Croix
The Use of Three-Dimensional Models in the Teaching of Calculus

Three different methods of representing 3D objects with 2D imagery were compared to determine the less ambiguous method.

Presenters - Susan Ganter & David Eby

Session 19 Martinique
A Study of the Factors Used by Judges to Establish Passing Scores for Teacher Certification Tests in Mathematics and Other Areas

A Process by which passing scores can be determined, especially in mathematics, by using judges will be discussed.

Presenters Charles Dziuban & Michael Hynes

Session 20 Antigua

The Linguistic Packaging of Mathematics

A research report on the examination of the linguistic grammar used in mathematics texts and classrooms. It includes conjectures about the impact of those structures upon the learning and/or doing of mathematics.

Presenter - Jan Green

12:15 - 2:00 Friday Luncheon Barbados/Aruba
RCDPM Annual Business Meeting

2:30 - 4:00 Friday Thematic Presentations Barbados

Multicultural Issues

Gil Cuevas, Chair

Presenters:

Mary Lou Nevin

Dawn Hoyt Kidd

Gil Cuevas

Alternative Assessment

Aruba

Ann McAloon, Chair

Presenters:

David Boliver

Grace Burton

Edward Silver

4:00 - 4:15 Break

4:15 - 5:15 Small Group Discussion Barbados/Aruba

Presiders:

Robert Ashlock

Doug Brumbaugh

Tom Romberg

Bob Sovchik

Ed Uprichard

Recorders:

Jerry Cummins

Diana Jordan

Dawn Hoyt Kidd

Janet Scheer

David Boliver

Friday Optional Dinner on Gatsby's Little River Queen

Saturday, February 13, 1993

7:00 - 8:00 Continental breakfast Lobby/Paradise

8:00 - 8:50 Saturday

Session 21

St. Anne

Effects of Gender on Classroom Teaching Style

Research data on what teachers believe concerning success in mathematics as related to gender will be presented.

Presenter - Judith Olson

Session 22

St Thomas

Writing Activities as a Vehicle for Enhancing the Mathematics Learning of Language Minority Students

Language activities, including whole language mathematics activities, derived from math clinic experiences, will be presented as a vehicle for enhancing student mathematics learning.

Presenter - David Davidson

Session 23

St Croix

Alternative Assessment

Research report on alternative assessment methods used in a graduate level diagnostic/prescriptive mathematics course. Findings and implications will be discussed.

Presenter - Enrique Ortiz

Session 24

Martinique

Graphing Technology and Knowledge of Function Properties: A Dialogue With Students

Research report will focus on data collected while students had access to graphing technology. Misconceptions that may be attributed to technology use will be highlighted and implications for classroom instructional practice will be discussed.

Presenter - Denisse Thompson

Session 25

Antigua

School-Based Mathematics Clinics

The presentation will describe a replicable, high school - based clinical intervention strategy that uses assessment techniques sensitive to social and affective as well as cognitive and psychomotor blocks to learning mathematics.

Presenter - George Wyer

9:00 - 9:50 Saturday

Session 26

St. Anne

Writing to Learn Mathematics

Using writing to learn mathematics as a bridge of communication between the teacher and the learner. Presentation will focus on activities for developmental mathematics classes and how this techniques provides information to detect common misconceptions.

Presenter - Aparna Ganguli

Session 27

St Thomas

The Middle Grade Dilemma - Possible Directions

Presentation will address the mis-direction of middle school mathematics. The role of on-going classroom diagnostic approaches will be discussed.

Presenters - C. J. Dockweiler & Mona Majdalani

Session 28

St Croix

Teachers' Understanding of Functions and Graphing

Research report on relationship among teacher's knowledge of functions and graphing, their attitudes about functions and graphing, and what teachers actually do in the classroom.

Presenter - Kingsley Durant

Session 29

Martinique

Alternative Assessment Vehicles

The potential of alternative assessment vehicles should be explored and monitored. Progress will be reported on a comprehensive alternative assessment package.

Presenter - Austin Connelly

Session 30

Assigning 3rd Grade Antiqua

Project UP With Math

A report on the results of a clinical intervention with at-risk elementary school students will be given.

Presenters Karen Verbeke & Nancy Morgan Clayton

9:50 - 10:10 Break

10:10 - 11:00 Saturday

Session 31

St. Anne

Mathematics Disabilities Among Preservice Teachers

A report on case studies that investigate factors which inhibit maximal mathematics performance among preservice elementary and special education teachers.

Presenter - Beatrice Babbitt

Session 32

St Thomas

Diagnosing Children's Ratio and Proportion Concepts

Research report on an examination of factors which affect a child's understanding or misunderstanding of ratio and proportion.

Presenter - Sandra Atkins

Session 33

St Croix

The G.A.M.E.S. Experience

Description of an intervention model designed to overcome the factors that have inhibited maximum mathematics learning for 7th and 8th grade female students who have limited desire to be successful in mathematics will be given.

Presenter - Sheryl Maxwell

Session 34

Martinique

Interviewing Students: Some Practical Issues

This presentation addresses a methodology for interviewing students that is extremely useful for understanding aspects of students' mathematical thinking.

Presenter - Joe Garofalo

Session 35

Antiqua

Understanding Exponentiation

Description of a teaching experiment to determine whether altering the order in which this topic is taught resulted in greater understanding.

Presenter- Jean Schmittau

11:00 - 12:00 Saturday

Wilson Memorial Lecture

Barbados/Aruba

Chair, Francis (Skip) Fennell

Presenter - The Honorable Walter Komanski

Circuit Court Judge

Ninth Judicial Circuit in and of Orlando, Florida

12:00 Conference Closing

HAVE A SAFE TRIP HOME !
THANKS FOR COMING!
SEE YOU NEXT YEAR !

1:00 - 5:00

RCDPM Board Meeting

Penthouse

RCDPM 1993 Conference Program

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RCDPM 1993 Conference Program

Plan your participation
Writing in the numbers of the sessions you will attend

Time	Thursday	Friday	Saturday
7:00	////////////////////	Continental Breakfast	Continental Breakfast
8:00	////////////////////	Session	Session
9:00	////////////////////	Session	Session
9:50	////////////////////	Break	Break
10:10	////////////////////	Session	Session
11:00	////////////////////	Session	Wilson
12:00	RCDPM	Break	Memorial Lecture
12:15	Then	Luncheon	Conference Closed
12:30	& Now		////////////////////
1:00	Thematic	RCDPM Bus. Meeting	////////////////////
2:30		Thematic	////////////////////
2:45	Small group		////////////////////
3:45	FOCUS		////////////////////
4:00	FOCUS	Break	////////////////////
4:15	FOCUS	Small Group	////////////////////
4:30	Break	Small Group	////////////////////
5:00	Reception	Small Group	////////////////////
5:15	Reception	Optional Dinner	////////////////////
6:00	Luau on Beach	Optional Dinner	////////////////////