PART II Concurrent Session

CREATING THE NEED TO KNOW
  A. L. Buikema, Jr. 71

SCIENTISTS AND SCIENCE EDUCATORS: COLLABORATING TO DEVELOP CONCEPTUAL CHANGE TEACHING STRATEGIES
  G. E. Glasson 75

A FIELD BASED APPROACH TO INTRODUCTORY GEOLOGY INSTRUCTION
  G. R. Woodwell and J. L. Hayob 81

HANDS-ON PHYSICAL SCIENCE COURSE AT RADFORD UNIVERSITY
  T. Tanaka 91

PREPARING PRESERVICE TEACHERS FOR THE EXPERIMENTAL DESIGN AND DATA ANALYSIS SOL
  J. E. Wright, Jr. 95

ADDRESSING PROSPECTIVE ELEMENTARY TEACHERS' BELIEFS ABOUT THE NATURE OF MATHEMATICS: A CASE FOR EXPLORING STUDENTS' CONCEPTIONS OF MATHEMATICS IN A MATH EDUCATION COURSE
  K. Dorgan 99

AN INVESTIGATIVE APPROACH TO TEACHING MATHEMATICS: EXCITEMENT AND CONCERNS OF K-8 PRESERVICE TEACHERS
  J. L. M. Wilkins 105

IMPACT OF A NEW INTRODUCTORY MATHEMATICAL MODELING COURSE ON STUDENT CONFIDENCE IN MATHEMATICAL ABILITY AND SKILLS
  P. Dean, D. Hydorn, and S. Sumner 111

INFORMAL GEOMETRY IN THE PREPARATION OF TEACHERS: A NEW MATHEMATICS COURSE AT THE UNIVERSITY OF VIRGINIA
  L. D. Pitt 117

ON THE JOB MATHEMATICS
  G. Rublein 121

A MODEL FOR FACULTY COLLABORATION IN PREPARING VIRGINIA'S K-8 TEACHERS
  B. F. Risacher 125

EXPERIMENTAL DESIGN AT THE INTERSECTION OF MATHEMATICS, SCIENCE, AND TECHNOLOGY IN GRADES K-8
  R. N. Giese and M. M. Mason 131
EDIS 788 MATHEMATICS/SCIENCE/EDUCATION FIELD PROJECT AS A CAPSTONE EXPERIENCE IN FIVE YEAR BA/MT TEACHER EDUCATION PROGRAM
S. P. Plaskon 137

INNOVATIVE OPPORTUNITIES FOR ELEMENTARY AND MIDDLE SCHOOL TEACHERS TO MAINTAIN CURRENCY IN MATHEMATICS AND SCIENCE: A COMMUNITY COLLEGE-SCHOOL SYSTEM PARTNERSHIP
B. Ellis, M. Giacofci, D. Riley, and P. D. Scott 143

CURRICULUM RESTRUCTURING AT LYNCHBURG COLLEGE: EFFECTS OF REALIGNMENT TO STATE-MANDATED COMPETENCIES AND IMPLICATIONS FOR K-6 MATH AND SCIENCE TEACHER PREPARATION
W. McKenzie and C. Messerschmidt 149

WONDERS OF TECHNOLOGY - TEACHING PHYSICS TO NON-SCIENTISTS
V. A. Niculescu and P. Martin 153

EXPERIENCING SCIENCE, AN INTRODUCTION TO "REAL" METHODS OF SCIENCE FOR THE PRESERVICE TEACHER
D. L. Neely-Fisher and D. B. Hagan 159

TEACHING PHYSICAL SCIENCE THROUGH TECHNOLOGY MIDDLE SCHOOL VCU PHY 591 - SPRING 1999
V. A. Niculescu and D. B. Hagan 165

USING TECHNOLOGY AS A VEHICLE TO APPROPRIATELY INTEGRATE MATHEMATICS AND SCIENCE INSTRUCTION FOR THE MIDDLE SCHOOL
M. M. Mason and R. N. Giese 171

DATA VISUALIZATION TOOLS FOR SCIENCE AND MATH
B. Kolvoord 175

TECHNOLOGY INTEGRATION IN A SCIENCE AND MATHEMATICS METHODS COURSE: ADDRESSING VIRGINIA’S COMPUTER/ TECHNOLOGY STANDARDS OF LEARNING
G. Meadows and M. Sheckels 183

PART III Conference Summary
RAPPORTEUR’S REPORT
W. E. Haver 187
CONTENTS  Volume 2, Number 2

PART I  Plenary Session
CHALLENGES FOR SCIENCE AND MATHEMATICS FACULTY
S. T. Thornton  1

EDUCATION SCHOOL CHALLENGES: THE INCREASING
DEMANDS ON K-8 TEACHERS
A. J. Benson  9

VIRGINIA COMMONWEALTH UNIVERSITY'S PROGRAM FOR K-6
AND 6-8 TEACHERS: THE INTERDISCIPLINARY B.S. IN SCIENCE
R. W. Farley  13

LIBERAL STUDIES AT LONGWOOD COLLEGE: PREPARING
TEACHERS FOR VIRGINIA'S FUTURE
J. D. Smith  19

A NEW INTERDISCIPLINARY MATHEMATICS AND SCIENCE COURSE
P. E. McNeil  27

HIGHER EDUCATION'S GREATEST CURRENT OPPORTUNITY
AND RESPONSIBILITY
R. F. Watson  33

THIRD INTERNATIONAL MATHEMATICS AND SCIENCE STUDY
(TIMSS) AND THE NATURE OF COLLEGE COURSES
D. R. Sterling  39

TEACHING AND LEARNING SEMINAR FOR SCIENCE AND
MATHEMATICS FACULTY
D. R. Sterling  47

A PRELIMINARY ANALYSIS OF THE SUPPLY AND DEMAND
FOR MIDDLE SCHOOL MATHEMATICS AND SCIENCE TEACHERS
IN VIRGINIA
J. Sigler  53

COMMUNITY COLLEGE PERSPECTIVES ON TEACHER
PREPARATION IN VIRGINIA
D. L. Neely-Fisher  65

(Contents continued inside)