

## Iowa Section

Joint Meetings of the Iowa Sections of MAA, ASA and AMATYC were held at Iowa State University, Ames, on April 6-7, 1990. Program Chair: Elgin Johnston, ISU.

### **INVITED PRESENTATIONS:**

Alan Tucker, SUNY-Stony Brook, CUPM RECOMMENDATIONS FOR THE MATH MAJOR REVISITED  
Alan Tucker, SUNY-Stony Brook, MATHEMATICS OF FAIR REPRESENTATION  
Krishna Athreya, Iowa State U., THE MATHEMATICS OF BOOTSTRAP

### **STUDENT PAPERS:**

David Benz, Drake, ON THE SPECTRAL RANGE OF GRAPHS  
Mark W. Coffey, ISU, PAINLEVÉ ANALYSIS OF A KDV-LIKE EQUATION WITH FIFTH DEGREE NONLINEARITY  
Michael Deierling, Drake, CONSTRUCTION OF GRAPHS OF HIGH DIMENSION  
Jonathan Kessel, Drake, CONSTRUCTION OF HIGHLY SYMMETRICAL GRAPHS  
Rachel Lamp, ISU, A PRINCIPAL IDEAL DOMAIN RING THAT IS NOT A EUCLIDEAN DOMAIN  
Mark Lewis, ISU, STRATEGY DECISION MAKING IN PUZZLE PEG USING LINEAR PROGRAMMING  
David A. Overbeek, Drake, FACTORING LARGE TREES  
Robert Parker, ISU, ADJUSTING THE CENSUS  
Stephen Rathbun, ISU, A SPACE-TIME SURVIVAL POINT PROCESS FOR A LONGLEAF PINE FOREST  
Paul Shimura, MIU, TESSELLATION OF NON-ORIENTABLE SURFACES  
Robin Taylor, Drake, BINARY CODES FOR CYCLIC GRAPHS  
David Wilbur, Drake, HAMILTONIAN PATHS AND CYCLES IN TRIVALENT GRAPHS  
Veronique Ziegler, MIU, INTEGRATING ALGEBRA AND TOPOLOGY: THE ZARISKI TOPOLOGY

### **CONTRIBUTED PAPERS:**

Irving H. Anellis, Modern Logic Pub., THE ROOTS OF MATHEMATICS AND MATHEMATICS EDUCATION IN RUSSIA IN THE AGE OF PETER THE GREAT  
Bernadette Baker, Drake, ISOSPECTRAL GRAPHS AND ASSOCIATED ISOSPECTRAL MULTIGRAPHS  
Luz M. DeAlba, Drake, APPLICATIONS OF INDEFINITE SCALAR PRODUCTS TO SEVERAL MATRIX THEORY IDEAS  
A. M. Fink, ISU and J. A. Gatica, Iowa, FOR EVERY ANSWER THERE ARE TWO QUESTIONS  
A. M. Fink, ISU, J. A. Gatica, Iowa, G. E. Hernandez, Iowa, and P. Waltman, ISU, RADIALLY SYMMETRIC SOLUTIONS OF SOME ELLIPTIC BOUNDARY VALUE PROBLEMS  
Catherine Gorini, MIU, A MATHEMATICS CORE COURSE  
Eric W. Hart, MIU, THE ROLE OF DISCRETE MATHEMATICS IN IMPROVING COLLEGIATE MATHEMATICS EDUCATION - THE BUBBLE HAS NOT BURST  
Irvin Hentzel, ISU, THE BEALE CIPHERS: ANY GOOD IDEAS?  
Kenneth A. Heimes, ISU, POLYNOMIAL SOLUTIONS TO LINEAR PDE'S  
K. Shantha Jayawardena, ISU, AN  $O(n^2)$  ALGORITHM FOR COMPUTING THE INVERSE OF A POSITIVE DEFINITE TOEPLITZ MATRIX  
Pranava K. Jha, ISU, CONVEX EXPANSIONS ALGORITHMS FOR RECOGNITION AND ISOMETRIC EMBEDDING OF MEDIAN GRAPHS  
Kirk E. Jones, ISU, THE FABER TRANSFORMATION AND PRESERVATION OF LIPSCHITZ CLASSES  
Jack H. Lutz, ISU, BOOLEAN CIRCUITS AND BANACH-MAZUR GAMES  
Michael Millar, UNI, CURVES FROM ANCIENT TIMES  
Steve Nimmo and Doug Swan, Morningside, COMPUTER LAB PROJECTS FOR DERIVE  
J. D. Phillips, ISU, TOPICS IN QUASIGROUP REPRESENTATION THEORY  
Milan Randić and Alexander Kleiner, Drake, GRAPH POLYNOMIALS  
Ronald K. Smith, Graceland, HYPERCARD IN THE MATHEMATICS CLASSROOM  
Anita E. Solow, Grinnell, CALCULUS REFORM IN LIBERAL ARTS COLLEGES: PROGRESS REPORT  
Tan Cao Tran, Loras, A NOTE ON THE RUSSELL PARADOX  
Stephen J. Willson, ISU, INDUCED MAPS ON THE SYMBOLIC DYNAMICS OF CHAOTIC SPACES: AN EXAMPLE

**OTHER SESSIONS:** Mathematica (Informal Discussion)

**BUSINESS:**

Presiding: Calvin Van Niewaal, Section Chair

Attendance: 118

Student paper awards were announced: Michael Deierling, Jonathan Kessel, Paul Shimura, and Robin Taylor.

Reports were presented by Secretary-treasurer David Oakland and Governor Anne Steiner.

Elections: Chair-elect: Alex Kleiner (Drake); Secretary-treasurer: David Oakland (Drake).

Appointments: Section coordinator of student chapters: Catherine Gorini, (MIU). Meritorious Service

Award Nominating committee: Alex Kleiner (Drake), George Trytten (Luther), Elgin Johnston (ISU).  
1991 will be the 75th anniversary of the Iowa Section.

David O. Oakland, Secretary-treasurer.