



## MAA Southeastern Section



## SIAM Southeast-Atlantic Section

### Joint Regional Meeting

March 21 - 22, 2003  
Clemson University  
Clemson, South Carolina

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# Program Outline

All events are in Brackett Hall unless otherwise noted

## Friday

8:00-4:30	Registration	Atrium
8:30-11:30	Project NExT	122
8:30-11:30	Short Courses (by pre-registration)	

## Short Courses

SC.01	<i>Miles of Tiles - Patterns in the Plane;</i> Steve Edwards (sedwards@spsu.edu), Southern Polytechnic State University	114
SC.02	<i>Perfect Partners: Mathematical Modeling, Discrete Dynamical Systems and Technology;</i> William P. Fox (wfox@fmarion.edu), Francis Marion University	438
SC.03	<i>Algebra and Number Theory in Cryptography;</i> Shuhong Gao (gao@clemson.edu), Clemson University	121
SC.04	<i>Computational Genomics;</i> Laurie Heyer (lahey@clayton.edu), Davidson College	Martin M305
SC.05	<i>Computational Modeling in Service of Undergraduate Teaching;</i> Holly Hirst (hph@math.appstate.edu), Appalachian State University, and Daniel Warner (warner@clemson.edu), Clemson University	Martin M306
SC.06	<i>Enhancing Logical Reasoning through Lego Robotics;</i> Nieves McNulty (nmcnulty@colacoll.edu) and Madeleine Schep (mschep@colacoll.edu), Columbia College	112

9:00-11:00	Math Jeopardy Contest Preliminary Rounds I and II	100
11:15-12:45	TA Rush/Career Fair	213 and 214
12:00-5:00	Exhibits	Atrium
1:00-2:10	General Session I	100
1:30-5:00	Refreshments - Sponsored by Addison/Wesley, Brooks/Cole, Houghton Mifflin, and Prentice Hall	Atrium
2:20-3:20	Math Jeopardy Contest Preliminary Round III	100

2:20-4:20	Concurrent Sessions	
2:20-4:20	Number Theory	111
2:20-4:20	Algebra and Discrete Mathematics	113
2:20-4:00	Matrix Theory and Numerical Linear Algebra	212
2:20-4:00	The Teaching of Statistics	211
2:20-4:15	Commercial Presentations I	114
2:20-4:15	Commercial Presentations II	121
2:20-4:20	Undergraduate Student Papers I	224
2:20-4:20	Undergraduate Student Papers II	220
2:20-4:00	Graduate Student Papers I	213
2:20-4:20	Special Session on Discrete Mathematics I	120
2:20-4:20	Special Session on History of Mathematics I	122
2:20-4:20	Special Session on Integrating Applied Problems I	214
3:20-4:20	REU Roundtable Discussion	100
4:30-5:30	General Session II	100
5:30-5:50	MAA Awards Presentation	100
5:30-5:50	SIAM Business Meeting	100
6:00-9:00	Bar-B-Que Dinner	Clemson House

## Saturday

7:30-8:45	Continental Breakfast - Sponsored by Addison/Wesley, Brooks/Cole, Houghton Mifflin, and Prentice Hall	Atrium
8:00-3:00	Exhibits	
8:00-8:45	MAA Business Meeting	
9:00-10:00	General Session III	100
10:20-12:20	Concurrent Sessions	
10:20-12:20	Differential Equations, Dynamical Systems, Numerical Methods	121
10:20-12:20	Mathematics Teacher Development	113
10:20-12:20	Statistics and Probability	111
10:20-12:20	The Teaching of Mathematics	114
10:20-12:20	Student Poster Session	Second-floor Hallway
10:20-11:40	Undergraduate Student Papers III	213
10:20-11:40	Undergraduate Student Papers IV	224
10:20-12:20	Graduate Student Papers II	220
10:20-12:20	Special Session on Discrete Mathematics II	120
10:20-12:20	Special Session on History of Mathematics II	122
10:20-12:20	Special Session on Integrating Applied Problems II	214
12:20-1:00	Boxed Lunch	Atrium
1:00-2:00	General Session IV	100
2:00-2:15	SIAM Awards to Student Presenters	100
2:20-3:20	Jeopardy Finals	100

2:20-3:20	Concurrent Sessions	
2:20-3:20	Geometry	111
2:20-3:00	Graph Theory	113
2:20-3:20	Applied Mathematics	114
2:20-3:20	Miscellaneous I	121
2:20-3:20	Miscellaneous II	214
2:20-3:20	Special Session on Discrete Mathematics III	120
2:20-3:20	Special Session on History of Mathematics III	122

## TA/Career Rush Participants

Organized by Doug Shier (shierd@clemson.edu)

Auburn University  
Clemson University  
East Tennessee State University  
Georgia Tech  
University of Georgia  
University of North Carolina - Charlotte  
University of South Carolina (Epidemiology and Biostatistics)  
University of South Carolina (Mathematics)  
University of Tennessee  
Virginia Tech  
Wake Forest University  
Western Carolina University  
National Security Agency  
SIAM University Chapters/AWM Student Chapters

## Program - Friday

### General Session I

1:00 Brackett 100 Jackie Huband, President, SIAM-SEAS  
Presiding

*Optimization Is Everywhere*

Margaret Wright

Courant Institute of Mathematical Sciences, New York University

### Concurrent Sessions

#### Number Theory (NT) Brackett 111

- 2:20 NT.11 *Determining Mills' Constant and a Note on Honaker's Problem;* Chris K. Caldwell (caldwell@utm.edu) and Yuanyou Cheng, University of Tennessee at Martin
- 2:40 NT.12 *A Connection Between Ordinary Partitions, Rogers-Ramanujan Partitions, and 2-Color Frobenius Partitions;* Louis W. Kolitsch (lkolitsc@utm.edu), University of Tennessee at Martin
- 3:00 NT.13 *What Is Special About The Kaprekar Routine?;* Hari Pulapaka (hpulapak@stetson.edu), Stetson University, and Kevin Peterson, Lynchburg College
- 3:20 NT.14 *Structural Properties of  $c(\mathbb{Z}_{pq})$ -Sets;* Michael Freeze (freezem@uncw.edu), University of North Carolina at Wilmington
- 3:40 NT.15 *The Bracelet Problem -- Fibonacci Numbers mod m;* David R. Stone (drstone@gsvms2.cc.gasou.edu), Georgia Southern University
- 4:00 NT.16 *On 1 (mod 3) Prime Numbers;* Shan Manickam (mnkm@email.wcu.edu), Western Carolina University, and Swarnameenakshi Manickam, Yale University

#### Algebra and Discrete Mathematics (AD) Brackett 113

- 2:20 AD.11 *Parsing Permutations;* Jeff Clark (clarkj@elon.edu), Elon University
- 2:40 AD.12 *What the Heck Are Rado Numbers?;* Carl Mueller (cmueller@canes.gsw.edu), Georgia Southwestern State University
- 3:00 AD.13 *On the Capability of a Metacyclic Group;* Jim Beuerle (jbeuerle@elon.edu), Elon University
- 3:20 AD.14 *A Trick for Introducing Algebraic Coding Theory;* Jeffrey Ehme (jehme@spelman.edu) and Colm Mulcahy, Spelman College
- 3:40 AD.15 *Grünbaum Colorings of Triangulations of the Sphere;* Eric Gottlieb (gottlieb@rhodes.edu) and Kennan Shelton, Rhodes College
- 4:00 AD.16 *Counting on Hypercubes;* Stephen Davis (stdavis@davidson.edu), Davidson College

<b>Matrix Theory and Numerical Linear Algebra (MX)</b>		<b>Brackett 212</b>
2:20	MX.11	<i>Spectra of Leslie Adjacency Matrices with Applications</i> ; Bruce W. Atkinson (bwatkins@samford.edu), Samford University
2:40	MX.12	<i>Subproper and Regular Splittings for a Restricted Rectangular System</i> ; Xiezhang Li (xli@gsu.cs.gasou.edu) and Yimin Wei, Georgia Southern University
3:00	MX.13	<i>The Superiority of a New Type (2,2)-Step Iterative Method over the Related Chebyshev Method</i> ; Mei-Qin Chen (mei.chen@citadel.edu) and Xiezhang Li, The Citadel
3:20	MX.14	<i>Inertia Sets of Symmetric Sign Pattern Matrices</i> ; Frank J. Hall (fhall@mathstat.gsu.edu) and Zhongshan Li, Georgia State University
3:40	MX.15	<i>The Recursive Inverse Eigenvalue Problem</i> ; Marina Arav (marav@mathstat.gsu.edu), Georgia State University

<b>The Teaching of Statistics (TS)</b>		<b>Brackett 211</b>
2:20	TS.11	<i>The Availability Misconception in Probability and Statistics: An Investigation of High School Students</i> ; Rhonda C. Porter (rhonda.porter@mail.famu.edu), Florida A & M University
2:40	TS.12	<i>Teaching Statistics: When is the Sample Size Large Enough?</i> ; Richard Stephens (richard.stephens@uas.alaska.edu), University of Alaska Southeast
3:00	TS.13	<i>FreeCell, Common Sense and Statistics</i> ; Paul Baker (pbaker@catawba.edu), Catawba College
3:20	TS.14	<i>Incorporating Activities and Web-Based Materials into Post-Calculus Probability and Statistics, A Preliminary Report</i> ; M. Leigh Lunsford (leigh.lunsford@athens.edu), Athens State University, Tracy Goodson-Espy, University of Alabama in Huntsville, and Ginger Holmes Rowell, Middle Tennessee State University
3:40	TS.15	<i>Teaching an Introductory Statistics Course on the Internet</i> ; Lothar A. Dohse (dohse@unca.edu), University of North Carolina at Asheville
4:00	TS.16	<i>If Technology Has Revolutionized the Teaching of Statistics, Why Are We Still Teaching Essentially the Same Course?</i> ; Patricia Humphrey (phumphre@gsaix2.cc.gasou.edu), Georgia Southern University

<b>Commercial Presentations I (P1)</b>		<b>Brackett 114</b>
2:20 - 3:15	P1.11	<i>Houghton Mifflin MathSpace</i> ; Kelly Huskey (Kelly_Huskey@hmco.com) and Barbara Siry (Barbara_Siry@hmco.com), Houghton Mifflin
3:20 - 4:15	P1.12	<i>Features of BCA, Brooks Cole Assessment</i>

<b>Commercial Presentations II (P2)</b>		<b>Brackett 121</b>
2:20 - 3:15	P2.11	<i>The Virtual Math Lab by Addison Wesley Publishing</i> ; Dinya Floyd (dinya.floyd@aw.com), Addison Wesley
3:20 - 4:15	P2.12	<i>A Journey with the Voyage 200</i> ; Peg Greene (pgreene@fccj.edu), Texas Instruments

<b>Undergraduate Student Papers I (U1)</b>		<b>Brackett 224</b>
2:20	U1.11	<i>Generalizations and Analogues of the Pythagorean Theorem</i> ; Jessica Munley (jmunley@elon.edu), Elon University
2:40	U1.12	<i>An Investigation of Excevians and Extriangles</i> ; J. Brian Parker (jparker@elon.edu), Elon University
3:00	U1.13	<i>Binomial Coefficients, Trinomial Coefficients and the Pascal Triangle</i> ; Jeanette Olli (jolli@elon.edu), Elon University
3:20	U1.14	<i>Vertex Magic</i> ; Katherine Cunningham (kcunningham@elon.edu), Elon University
3:40	U1.15	<i>Factoring Large Permutation Groups</i> ; Kathleen Iwancio (kiwancio@elon.edu), Elon University
4:00	U1.16	<i>Random Growth of Cell Blocks</i> ; Joseph A. Johnson (zjaj14@imail.etsu.edu), East Tennessee State University

<b>Undergraduate Student Papers II (U2)</b>		<b>Brackett 220</b>
2:20	U2.11	<i>Modeling the Laundry Problem using Circle Maps</i> ; Stuart Bateman (smbateman@charter.net), University of North Carolina at Asheville
2:40	U2.12	<i>Paths That Turn at a Constant Rate: Special Curves in the Hyperbolic Plane</i> ; Rob McLean (romclean@davidson.edu), Davidson College
3:00	U2.13	<i>Strategies for Re-establishment of the American Chestnut in the Appalachians</i> ; Amelia Nutter (amelianutter@yahoo.com), University of North Carolina at Asheville
3:20	U2.14	<i>Assessment of Lead Levels in Dust, Soil and Paint in Durham, North Carolina</i> ; Alyssa Dillow (apdillow@bulldog.unca.edu), University of North Carolina at Asheville
3:40	U2.15	<i>An Investigation of the Ordered "Look-and-Say" Sequence</i> ; Jason Grigsby (jdgrigsb@bsc.edu), Birmingham-Southern College
4:00	U2.16	<i>Geometry and Monte Carlo Simulation in Election Modeling</i> ; Emily Marcato (ecmarcat@samford.edu), Samford University

<b>Graduate Student Papers I (G1)</b>		<b>Brackett 213</b>
2:20	G1.11	<i>Numerical Method for Sand Pile Formation</i> ; Christopher Kuster (cmkuster@unity.ncsu.edu), North Carolina State University
2:40	G1.12	<i>Cone-Based Modeling of Preferences in Multicriteria Optimization</i> ; Brian J. Hunt (bhunt@clemson.edu), Clemson University
3:00	G1.13	<i>The Fractional Advection Dispersion Equation</i> ; John Paul Roop (roop@clemson.edu), Clemson University
3:20	G1.14	<i>Numerical Simulation of Diffusion of Second Messengers in Visual Transduction</i> ; Harihar Khanal (hkhanal@math.utk.edu), University of Tennessee
3:40	G1.15	<i>Using Quantitative Methods To Improve Your Tennis</i> ; Chris Valis (vmanwr86@yahoo.com), Wake Forest University

<b>Special Session on Discrete Mathematics I (D1)</b>		<b>Brackett 120</b>
Organized by Robert Jamison (rejam@clemson.edu) and Renu Laskar (rclsk@clemson.edu)		
2:20	D1.11	<i>Generalizing Pancyclic and k-Ordered Graphs</i> ; Ronald J. Gould (rg@mathcs.emory.edu), Emory University
2:50	D1.12	<i>Cylindrical Braids</i> ; Dave Peifer (dpeifer@unca.edu), University of North Carolina at Asheville
3:20	D1.13	<i>Splitting Numbers of Grids</i> ; Dwight Duffus (dwight@mathcs.emory.edu), Emory University
3:50	D1.14	<i>Monster in a Box: The Interplay of Integer Sequences</i> ; Evan B. Wantland (wantland@warren-wilson.edu), Warren Wilson College
<b>Special Session on the History of Mathematics I (H1)</b>		<b>Brackett 122</b>
Organized by Robert Jamison (rejam@clemson.edu)		
2:20	H1.11	<i>Raymond Pearl and the Logistic Curve</i> ; Bob Fray (bob.fray@furman.edu), Furman University
2:50	H1.12	<i>Queen Dido's Hide and the Minimal Arc-length Problem in Calculus</i> ; Wally Javier (wrjavier@subr.edu), Southern University-Baton Rouge
3:20	H1.13	<i>The Influence of Neighboring Scientists and Faculty on the Development of Mathematical Sciences at Clemson University</i> ; T. Gil Proctor (proctor@clemson.edu), Clemson University
3:50	H1.14	<i>Understanding Mathematical Proof: The Four-Color Problem and a Math Forum MidPoW</i> ; Craig Bach, (bachcn@drexel.edu), Drexel University
<b>Special Session on Integrating Applied Problems into the Undergraduate Curriculum I (A1)</b>		<b>Brackett 214</b>
Organized by Angela Shiflet (shifletab@wofford.edu)		
2:20	A1.11	<i>Applied Mathematics for Undergraduates at UT</i> ; Suzanne Lenhart (lenhart@math.utk.edu), University of Tennessee Knoxville
2:50	A1.12	<i>Mathematical Modeling of the Terror Bird</i> ; William P. Fox (wfox@fmarion.edu), Francis Marion University
3:20	A1.13	<i>Using the Historical Development of Predator-Prey to Motivate Modeling</i> ; Holly Hirst (hph@math.appstate.edu), Appalachian State University
3:50	A1.14	<i>National Computational Science Institute: Modeling in the Classroom</i> ; Daniel Warner (warner@clemson.edu), Clemson University

<b>REU Roundtable Discussion (REU)</b>		<b>Brackett 100</b>
3:20 - 4:20	REU.1	<i>REU Roundtable Discussion</i>
Participants:		
Neil Calkin (calkin@clemson.edu), Clemson University,		
Chris Cox (clcox@clemson.edu), Clemson University,		
Anant P. Godbole (godbole@mail.etsu.edu), East Tennessee State University, Kevin James (kevja@clemson.edu), Clemson University, and Suzanne Lenhart (lenhart@math.utk.edu), University of Tennessee Knoxville		

<b>General Session II</b>		
4:30	Brackett 100	Stephen Davis, Chair-Elect, MAA-SE Presiding
<i>RISKY BUSINESS: Investigating the Connection Between Mathematics and Business Concepts</i> Ronald Harshbarger, USC - Beaufort Southeastern Section Teaching Award Winner		
<b>MAA Awards Presentation</b>		
5:30	Brackett 100	Ray Collings, Chair, MAA-SE Presiding
Southeastern Section Award for Distinguished College or University Teaching of Mathematics; Southeastern Section Distinguished Service Award		
<b>SIAM Business Meeting</b>		
5:30	Brackett 111	Jackie Huband, President, SIAM-SEAS Presiding

<b>Social and Dinner</b>		
6:00	Bar-B-Que Dinner	Clemson House

## Program - Saturday

7:30 Continental Breakfast - Sponsored by Atrium  
Addison/Wesley, Brooks/Cole, Prentice Hall, and Houghton Mifflin

8:00 - 3:00 Exhibits Atrium

### MAA Business Meeting

8:00 Brackett 100 Ray Collings, Chair, MAA-SE  
Presiding

### General Session III

9:30 Brackett 100 Patty Monroe, Vice-Chair, MAA-SE  
Presiding

*The Adventure of Mathematical Ideas*  
John Baxley, Wake Forest University  
Section Lecturer

### Concurrent Sessions

#### Mathematics Teacher Development (MT) Brackett 113

10:20 MT.21 *College Algebra Computer Lab - Friend or Foe?*; Cynthia Sikes (cynsikes@gsvms2.cc.gasou.edu) and Deborah Evans, Georgia Southern University

10:40 MT.22 *Breaking the Cycle of Mediocrity: Developing a Profound Understanding of Fundamental Mathematics among Future Teachers*; Betsy Darken (betsy-darken@utc.edu), University of Tennessee at Chattanooga

11:00 MT.23 *An Open, Flexible, Collaborative Web Homework System*; Stephen Kuhn (Stephen-kuhn@utc.edu) and Terry Walters, University of Tennessee at Chattanooga

11:20 MT.24 *Successful and Unsuccessful Proposal Writing Efforts in the East Tennessee State University Mathematics Department*; Anant P. Godbole (godbolea@mail.etsu.edu) and Jeff Randall Knisley, East Tennessee State University

11:40 MT.25 *Using a Coteaching Module in a Mathematics Methods Class for Elementary Preservice Teachers: Reflections on Practice*; Lisa Carnell (lcarnell@highpoint.edu), High Point University

12:00 MT.26 *A Mixed Approach to Teaching Linear Algebra*; Skip Allis (clyde@math.elon.edu), Elon University

#### Differential Equations, Dynamical Systems Brackett 121 and Numerical Methods (DE)

10:20 DE.21 *Continuous Gauss-Newton-type Algorithm for Nonlinear Ill-posed Operator Equations with Simultaneous Updates of the Regularized Frechet Derivative*; Alexandra Smirnova (matabs@suez.cs.gsu.edu), Georgia State University

10:40 DE.22 *Interactive Generation of Orbits in the Restricted Circular Planar Three-body Problem*; Jack R. Pace (jpace@spsu.edu), Southern Polytechnic State University

11:00 DE.23 *A Summary of Results Pertaining to Multicomponent, Viscoelastic Fluid Flow*; Will Miles (wmiles@clemson.edu), Clemson University

11:20 DE.24 *Regularisation and Control of Self-focusing in the 2D Cubic Schrödinger Equation by Attractive Potentials*; Brenton leMesurier (lemesurierb@cofc.edu), College of Charleston, Peter Christiansen, Technical University of Denmark, Yuri Gaididei, Bogolyubov Institute for Theoretical Physics, Ukraine, and Jens Juul Rasmussen, Risø National Laboratory, Denmark

11:40 DE.25 *Optimal Harvesting in an Integro-difference Population Model*; Hem Raj Joshi (joshi@math.utk.edu), Suzanne Lenhart and Holly Gaff, University of Tennessee Knoxville

12:00 DE.26 *Summing Formal Power Series Solutions to Advanced and Delayed Differential Equations*; Michael J. Spurr (spurrm@mail.ecu.edu) and David W. Pravica, East Carolina University

#### The Teaching of Mathematics (TM) Brackett 114

10:20 TM.21 *Maple Illustrations of Selected Topics from Undergraduate Analysis*; John Ziegler (jziegler@spsu.edu), Southern Polytechnic State University

10:40 TM.22 *Visualization of an Affine Transformation*; Subhash Saxena (scsaxen@yahoo.com), Coastal Carolina University

11:00 TM.23 *Introductory Analysis: Synthesizing  $R$ ,  $R^n$ , Metric Spaces and Topological Spaces*; Robert Gardner (robert\_gardner2@yahoo.com), East Tennessee State University

11:20 TM.24 *An Online Multivariable Calculus Course*; Jeff Knisley (knisleyj@etsu.edu), East Tennessee State University

11:40 TM.25 *Summing  $k$ -th powers of Consecutive Positive Integers: An Elementary and Generalizable Approach for the Calculus I Classroom*; Gregory M. Boudreaux (gboudreaux@unca.edu), University of North Carolina at Asheville

12:00 TM.26 *Addressing the Issue of Retention of Mathematics Majors: Seminar for Freshmen and New Mathematics Majors. Preliminary Report*; Patricia Shelton (sheltonp@ncat.edu) and Janis Oldham, North Carolina Agricultural and Technical State University

<b>Statistics and Probability (SP)</b>		<b>Brackett 111</b>
10:20	SP.21	<i>Needed: A Standard Measure for Comparing Distributions</i> ; James Kropa (jkropa@spsu.edu), Southern Polytechnic State University
10:40	SP.22	<i>The Multivariate Local Time Intensities of Regenerative Sets</i> ; Hussain Elalaoui-Talibi (talibi@tuskegee.edu), Tuskegee University
11:00	SP.23	<i>Half Way Through <math>e^x</math></i> ; Donald Francis Young (dyoung@spsu.edu), Southern Polytechnic State University
11:20	SP.24	<i>Inequalities for Renewal-Type Integrals with Applications</i> ; Broderick O. Oluyede (boluyede@gasou.edu), Georgia Southern University
11:40	SP.25	<i>The Singled Out Game</i> ; Kennan Shelton (shelton@rhodes.edu), Rhodes College
12:00	SP.26	<i>Boogie Baby Bounce: A Game of Chance</i> ; Dennis Walsh (dwalsh@mtsu.edu), Middle Tennessee State University

<b>Undergraduate Student Poster Session (PS)</b>		<b>Second-floor Hallway</b>
Organized by Bob Bernhardt (bernhardtr@mail.ecu.edu) and Gretchen Matthews (gmatthe@clemson.edu)		
PS.1	<i>Spaceships: A Look at Video Games and Student Motivation</i> ; Susan Edwards, Meredith College	
PS.2	<i>Checking for Substructures in Graphs of Fixed Pathwidth</i> ; Jarrett Walsh (elsewhereman@hotmail.com), Armstrong Atlantic State University	
PS.3	<i>A Small Cover for Convex Unit Arcs</i> ; Joseph A. Johnson (zjaj14@imail.etsu.edu), East Tennessee State University	
PS.4	<i>An Examination of a Queuing Model</i> ; Evelyn Thomas (evyland@yahoo.com), Spelman College	
PS.5	<i>A Comparison of Centrality Estimators</i> ; Jamie McCreary (jkm5933@tntech.edu), Tennessee Tech	
PS.6	<i>The Parameter Space for the Iteration of Cubic Polynomials</i> ; Jack Senechal (jssenech@bulldog.unca.edu), University of North Carolina at Asheville	
PS.7	<i>The Dynamics of <math>F_c(x) = cx(1-x)</math></i> ; Tammeca Rochester (tammeca930@yahoo.com), Spelman College	
PS.8	<i>The Relationship Between Primes and Perfect Squares</i> ; Charles N. Glover, Morehouse College	
PS.9	<i>The Hamming (7,4) Code</i> ; Aminah Perkins (aminahfp@yahoo.com) and Andrea Warren, Spelman College	
PS.10	<i>A Relationship Between General and Second Order Linear Recurrences</i> ; Daniel C. Morton (mortdc0@wfu.edu), Wake Forest University	
PS.11	<i>Missile Launching: A Simplified Statistical Model</i> ; Jamie Chatman (jeceve@hotmail.com), Spelman College	
PS.12	<i>An Algorithm for Counting Finite Topologies</i> ; Sean Rae (raes@ruby.winthrop.edu), Winthrop University	

<b>Undergraduate Student Poster Session (PS) [Cont.]</b>		<b>Second-floor Hallway</b>
Organized by Bob Bernhardt (bernhardtr@mail.ecu.edu) and Gretchen Matthews (gmatthe@clemson.edu)		
PS.13	<i>Error-Correcting Codes</i> ; Hatshepsitu Tull (h_tull@hotmail.com) and Kamilah Mooney, Spelman College	
PS.14	<i>The Effect of Academic Achievement on Self-Esteem of an Early Adolescent</i> ; Christy DeWees (deweesc@meredith.edu), Meredith College	
PS.15	<i>Mathematical Models of HIV Disease Pathogenesis</i> ; Karen Herman (kh_7091@yahoo.com), North Carolina Agricultural and Technical State University	
PS.16	<i>On the Difference Equation: <math>X_{n+1} = p + X_{n-1}/X_n</math></i> ; Allison Carter (carter1881@hotmail.com), Coastal Carolina University	
PS.17	<i>Numerical Solutions to the 1-D Schrodinger Equation</i> ; Shaun Wood (spwood@edisto.cofc.edu), College of Charleston	
PS.18	<i>KdV 2-Solitons</i> ; Kevin Young (kcyoung1@edisto.cofc.edu), College of Charleston	
PS.19	<i>Computations of the Partition Function, <math>p(n)</math></i> ; Elizabeth Perez (pereea03@wfu.edu), Wake Forest University, and Jimena Davis, Clemson University, Clemson University REU	
PS.20	<i>Analyzing the Contractions of <i>Vorticella sp.</i></i> ; Karoline Pershell (karppers@mars.utm.edu), University of Tennessee-Martin and Florida State University REU	
PS.21	<i>2002 Penn State Erie REU in Mathematical Biology</i> ; Meghan O'Malley (msomalle@unity.ncsu.edu), North Carolina State University and Penn State Erie REU	
PS.22	<i>Infinite Dimensional Lagrangian Reduction</i> ; Luke Cherveney (lecherve@unity.ncsu.edu), North Carolina State University and REU at Trinity University, San Antonio	
PS.23	<i>Applications of Algebra to Knot Theory</i> ; Nancy Lin (deiphobe@cwru.edu), Case Western Reserve University and University of Tennessee REU	
PS.24	<i>A Predator-Prey Model with Disease Dynamics</i> ; Chris Flake (jcflake@unity.ncsu.edu), North Carolina State University and University of Nebraska-Lincoln REU	

<b>Undergraduate Student Papers III (U3)</b>			<b>Brackets 213</b>
10:20	U3.21	<i>Random Growth Of Caterpillar Graphs</i> ; Gabriel Zimmer (ElGringoAmable@netscape.net), East Tennessee State University	
10:40	U3.22	<i>Fibonacci Vectors</i> ; Ena Salter (enasalter@hotmail.com), Georgia Southern University	
11:00	U3.23	<i>Colors, Clusters and Approximating the SVD</i> ; Nick Orłowski (nrorlows@unity.ncsu.edu), North Carolina State University	
11:20	U3.24	<i>Normalized Circular Bernstein-Bezier Curves</i> ; Mary Beth Cole (mecole@samford.edu), Samford University	

<b>Undergraduate Student Papers IV (U4)</b>			<b>Brackets 224</b>
10:20	U4.21	<i>Homothetic Triangles with Coincident Euler and Nagel Lines</i> ; Robert Davis (rdavis@elon.edu), Elon University	
10:40	U4.22	<i>Flipping Geometry</i> ; Shaun Lynott (slynott@elon.edu), Elon University	
11:00	U4.23	<i>Upside-Down Numbers...Upside-Down</i> ; Chaska Mendoza (cmendoza@elon.edu), Elon University	
11:20	U4.24	<i>A Rate Dependent Preisach Operator for Modeling a Piezoelectric Stack Actuator</i> ; Jeremy Poling (jpoling@ferrum.edu), Ferrum College	

<b>Special Session on Discrete Mathematics II (D2)</b>			<b>Brackets 120</b>
Organized by Robert Jamison (rejam@clemson.edu) and Renu Laskar (rclsk@clemson.edu)			
10:20	D2.21	<i>Domination in Triangulated Chessboard Graphs</i> ; Charles Wallis (cwallis@wpoff.wcu.edu), Western Carolina University	
10:50	D2.22	<i>Total k-Subdominating Functions on Graphs</i> ; Johannes H. Hattingh (jhattingh@gsu.edu), Georgia State University	
11:20	D2.23	<i>Locally Restricted Compositions</i> ; Rodney Canfield (erc@cs.uga.edu), University of Georgia	
11:50	D2.24	<i>Long Cycles in 3-connected Graphs</i> ; Guantao Chen (gchen@cs.gsu.edu), Georgia State University	

<b>Special Session on the History of Mathematics II (H2)</b>			<b>Brackets 122</b>
Organized by Robert Jamison (rejam@clemson.edu)			
10:20	H2.21	<i>Euclid's Elements, How Should We Approach the Text?</i> ; John Poole (john.poole@furman.edu), Furman University	
10:50	H2.22	<i>Transformational Geometry in Art and Architecture of Pre-Columbian Latin America</i> ; Elizabeth C. Rogers (b.rogers@prodigy.net), Piedmont College	
11:20	H2.23	<i>H.S.M. Coxeter: His Life and His Romance with Symmetry</i> ; F. Arthur Sherk (sherk@ces.clemson.edu), University of Toronto and Clemson University	
11:50	H2.24	<i>History of Topology</i> ; Artur Gorka (agorka@ces.clemson.edu), Clemson University	

<b>Graduate Student Papers II (G2)</b>			<b>Brackets 220</b>
10:20	G2.21	<i>Orthogonal Quadruple Systems and 3-frames</i> ; Brian Muse (musewib@mallard.duc.auburn.edu), Auburn University	
10:40	G2.22	<i>Maximal Sets of Hamilton Cycles</i> ; Sasha Logan (logansl@mallard.duc.auburn.edu), Auburn University	
11:00	G2.23	<i>Periodic Solutions in an Elastoplastic Model for Granular Flow</i> ; Bob Wieman (rewieman@eos.ncsu.edu), North Carolina State University	
11:20	G2.24	<i>Performance-based Decisions under Uncertainty for Complex Systems</i> ; Sundeep Samson (ssamson@clemson.edu), Clemson University	
11:40	G2.25	<i>The Ship Captain's Problem</i> ; Sarah Holliday (heusssh@auburn.edu), Auburn University	
12:00	G2.26	<i>Green's Function for an Equivalent Cable Model</i> ; Scott La Voie (zsl19@imail.etsu.edu), East Tennessee State University	

<b>Special Session on Integrating Applied Problems into the Undergraduate Curriculum II (A2)</b>			<b>Brackets 214</b>
Organized by Angela Shiflet (shifletab@wofford.edu)			
10:20	A2.21	<i>Internships for Undergraduates: Opportunities and Resources</i> ; Angela B. Shiflet (shifletab@wofford.edu), Wofford College	
10:50	A2.22	<i>Environmental Mathematics</i> ; Bernard A. Fusaro (fusaro@math.fsu.edu), Florida State University	
11:20	A2.23	<i>A Second-year Course on an Introduction to Applied Mathematics</i> ; R. E. White (white@math.ncsu.edu), North Carolina State University	
11:50	A2.24	<i>Solving a Social Problem with the Transportation Algorithm</i> ; Laurie Heyer (lahey@ davidson.edu), Davidson College	

## Lunch

12:20 Boxed Lunch Atrium

## General Session IV

1:00 Brackett 100 Theresa Early, Governor, MAA-SE  
Presiding

*Guessing Secrets*  
Ronald Graham, University of California at San Diego  
President of the MAA

### Presentation of SIAM Awards to Student Presenters

2:00 Brackett 100 Jackie Huband, President, SIAM-SEAS  
Presiding



## Concurrent Sessions

### Geometry (GE) Brackett 111

- 2:20 GE.31 *Sums of Squares and Cubes: Proofs Without Many Words*; Stephen Curry (scurry@gcsu.edu), Georgia College and State University
- 2:40 GE.32 *Tangent Sweeps and Tangent Clusters on the Sphere and in the Hyperbolic Plane*; Irl Bivens (irbivens@davidson.edu), Davidson College
- 3:00 GE.33 *A Generalization of Kasner's Theorem*; John Zerger (jzerger@catawba.edu), Catawba College

### Graph Theory (GT) Brackett 113

- 2:20 GT.31 *Decompositions of the Complete Digraph into Orientations of Cycles*; Gary Coker (gcoker@fmarion.edu), Francis Marion University
- 2:40 GT.32 *Hamiltonicity of 2-Connected Quasi-Claw-Free Graphs*; Rao Li (raol@usca.edu), University of South Carolina Aiken

### Applied Mathematics (AM) Brackett 114

- 2:20 AM.31 *The Green's Function Alternative in Industrial and Applied Mathematics*; Pascal Roubides (roubides@netscape.net), Georgia Tech
- 2:40 AM.32 *A Maple Application of Splines and the Function  $x^p + y^p = 1$ ,  $1 < p < 2$  in the Determination of the Quality of Coal*; Lyndell Kerley (kerleylm@mail.etsu.edu), East Tennessee State University
- 3:00 AM.33 *Pricing American Options via Monte Carlo: A Variance Reduction Technique*; Tracey Tullie (tatullie@ncat.edu), North Carolina Agricultural and Technical State University

### Miscellaneous I (M1) Brackett 121

- 2:20 M1.31 *Crash Course in Context-Oriented Mathematical Logic*; Damon Scott (dscott@fmarion.edu), Francis Marion University
- 2:40 M1.32 *Inverse Iteration of Elliptic Functions*; Mark McClure (mcmclur@bulldog.unca.edu), University of North Carolina at Asheville
- 3:00 M1.33 *Weighted Weak Type Inequalities for Hardy Operator When  $p = 1$* ; Tieling Chen (TielingC@usca.edu), University of South Carolina Aiken

### Miscellaneous II (M2) Brackett 214

- 2:20 M2.31 *Paper Folding and an Angle Limit: A Surprising Result*; Scotty Fairbairn (dfair@clemson.edu), Clemson University
- 2:40 M2.32 *Hesiod's Falling Anvil*; Andrew Simoson (ajsimoso@king.edu), King College
- 3:00 M2.33 *Light Beam Switching at the Interface of Two Nonlinear Optical Media*; Rajah P. Varatharajah (rajah@ncat.edu), North Carolina Agricultural and Technical State University

### Special Session on Discrete Mathematics III (D3) 120

Organized by Robert Jamison (rejam@clemson.edu) and Renu Laskar (rclsk@clemson.edu)

- 2:20 D3.31 *Real Number Channel Assignments with Distance Conditions*; Jerrold R. Griggs (griggs@math.sc.edu), University of South Carolina
- 2:50 D3.32 *Real Number Graph Labeling for Paths and Cycles*; Teresa Xiaohua Jin (jin2@math.sc.edu), University of South Carolina

### Special Session on the History of Mathematics III (H3) 122

Organized by Robert Jamison (rejam@clemson.edu)

- 2:20 H3.31 *Comparing the van Hiele Model to the Piaget Model*; Rachel Keller (rachelk@clemson.edu), Clemson University
- 2:50 H3.32 *Reflections on Zeno's Paradoxes*; Dan Slougher (dan.slougher@furman.edu), Furman University

Refreshments have been provided by

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Special Thanks to

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Doug Shier and Joe Wimbish

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