



MathFest Program

August 3-5, 2007
San Jose, CA

*The Annual Summer Meeting of the
Mathematical Association of America*

PUBS #1 AD

Contents

Dear Colleagues,

Welcome to San Jose. Many MAA members and committees worked hard to put together a program that has something for everyone.

MathFest 2007 marks 20 years since the first MAA student paper sessions began at summer meetings. To celebrate this 20th anniversary, there will be special student lectures and programs, and the MAA Committee on Student Activities and Chapters will host an ice cream social on Saturday night, following the ever-popular Pi Mu Epsilon Frame Lecture.

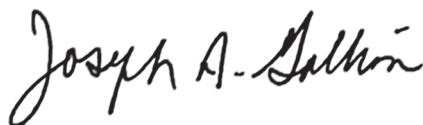


MAA is celebrating 2007 as the Year of Euler, in honor of the tercentennial of his birth. To mark this exciting occasion, the Euler Society is meeting with us and has organized a variety of special events at this year's MathFest.

The Society for Mathematical Biology is meeting with us, and a number of special events focusing on biology are scheduled throughout the program, highlighted by the MAA-SMB Joint Invited Address by Carlos Castillo-Chavez, Arizona State University, "On the Dynamics and Evolution of Emergent and Re-emergent Diseases: From Tuberculosis to SARS to the Flu."

We are glad you are joining us for MathFest 2007, and hope that you have a great meeting.

Sincerely,



Joseph A. Gallian
President

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On the cover: The San Jose Art Museum
Photo courtesy of the San Jose
Convention and Visitor's Bureau

Policy for Recording or Broadcasting of MAA Events

The recording or broadcasting of any MAA sponsored events, including but not limited to proceedings at sectional and national meetings, workshops, mini-courses, short-courses, and colloquia, is strictly forbidden without the explicit written permission of the Mathematical Association of America.

MathFest Sudoku

M			T	E	O		F			S	O
	A			2	O			M		7	F
		T				M			2		
E			H				0	7		A	
A	S			F			2	E			T
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		2				S				E	A
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	F		O	M				2			O
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T	T		S			F	M			0	
2	M			O		E	T	S			7

MathFest 2007 Sudoku is courtesy of Brainfreeze Puzzles, the name under which Philip Riley and Laura Taalman publish puzzles. Phil is a software engineer at Rosetta Stone and Laura is an Associate Professor at James Madison University. Their book *Color Sudoku* (Sterling Publishing) is now available in stores. Visit brainfreezepuzzles.com for more information. Solution will appear on MAA Online immediately after MathFest.

Addison Wesley

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Schedule of Events

TUESDAY, JULY 31

11:00 am – 5:00 pm	Project NExT Registration	Second Floor Hallway San Jose State University MacQuarrie Hall
1:30 pm – 9:00 pm	Project NExT Workshop (for 2007-2008 Fellows)	Second Floor San Jose State University MacQuarrie Hall

WEDNESDAY, AUGUST 1

8:00 am – 5:00 pm	Project NExT Registration	Second Floor Hallway San Jose State University MacQuarrie Hall
8:30 am – 5:25 pm	Project NExT Workshop (for 2007-2008 Fellows)	Second Floor San Jose State University MacQuarrie Hall
9:00 am – 5:00 pm	Part 1: Two-Day Short Course Implementing Biology Across the Mathematics Curriculum John R. Jungck, Beloit College	Gold Room The Fairmont San Jose

THURSDAY, AUGUST 2

8:00 am – 5:00 pm	MAA Board of Governors	Regency Ballroom The Fairmont San Jose
8:00 am – 5:00 pm	Project NExT Registration	Second Floor Hallway San Jose State University MacQuarrie Hall
8:15 am – 5:30 pm	Project NExT Workshop (for 2007-2008 Fellows)	Second Floor San Jose State University MacQuarrie Hall
9:00 am – 5:00 pm	Part 2: Two-Day Short Course Implementing Biology Across the Mathematics Curriculum John R. Jungck, Beloit College	Gold Room The Fairmont San Jose
9:30 am – 4:30 pm	Highlights of San Francisco Spouse and Guest Tour	Main Entrance The Fairmont San Jose
5:00 pm – 6:00 pm	MAA/PME Student Reception	California Room The Fairmont San Jose
6:00 pm – 6:45 pm	Public Interview with The Apples in Stereo's Robert Schneider	Club Regent The Fairmont San Jose
6:30 pm – 7:30 pm	Opening Reception	Regency Foyer The Fairmont San Jose

7:30 pm – 9:30 pm

Opening Banquet
Speaker: Noam Elkies, Harvard University
Emcee: Don Albers, MAA Books Editorial Director

Regency Ballroom
The Fairmont San Jose

FRIDAY, AUGUST 3

8:00 am – 10:30 am

Contributed Paper Session
Mathematics of Sports and Games
Howard Lewis Penn, United States Naval Academy
E. Lee May, Salisbury University

Hillsborough Room
The Fairmont San Jose

8:10 am – 8:25 am

Does Jim Rice Belong in Baseball's Hall of Fame? An Application of Z-Scores
E. Lee May, Salisbury University

8:30 am – 8:45 am

The Baseball Simulator: Accurately Simulating
Major League Games with a Minimum Number of Statistics
Robert Franzosa, University of Maine

8:50 am – 9:05 am

Mathematics and Collegiate Wrestling Tournaments
T. Michael, United States Naval Academy

9:10 am – 9:25 am

When the "Best" Strategy Fails: Variance Trumps the Mean
Brian Hollenbeck, Emporia State University

9:30 am – 9:45 am

Monopoly in the Classroom
Charles Rocca, Western Connecticut State University

9:50 am – 10:05 am

Statistical Analysis of Popular Rubik's
Cube Solution Systems
Morley Davidson, Kent State University
Joseph Miller, Kent State University

10:10 am – 10:25 am

Experiential Learning in the Mathematics of Games
Jacob Heidenreich, Loras College

8:30 am – 9:20 am

Joint MAA-SMB Invited Address
On the Dynamics and Evolution of Emergent
and Re-emergent Diseases: From Tuberculosis
to SARS to the Flu
Carlos Castillo-Chavez, Arizona State University

Regency Ballroom
The Fairmont San Jose

8:30 am – 10:30 am

Euler Society Invited Paper Session
Leonard Euler Tercentenary: 1707 - 2007
Robert Bradley, Adelphi University
Edward Sandifer, Western Connecticut State University

Atherton Room
The Fairmont San Jose

8:30 am – 9:20 am

Euler's Analytic Geometry
Robert E. Bradley, Adelphi University

9:30 am – 10:20 am

The Rise and Evolution of the Function Concept
in 18th Century Analysis
Ruediger Thiele, University of Leipzig

8:30 am – 10:30 am

Contributed Paper Session
Attracting and Retaining Students to
Mathematics Programs Via Outreach
Sangeeta Gad, University of Houston-Downtown

Sacramento Room
The Fairmont San Jose

Schedule of Events

FRIDAY, AUGUST 3 CONTINUED

8:30 am – 8:45 am	Session Introduction Sangeeta Gad, University of Houston-Downtown	
8:50 am – 9:05 am	Assessing a Collegiate Summer Academy for Students Rising to Grades 8-10 David Boliver, University of Central Oklahoma Rocky Bargas, University of Central Oklahoma	
9:10 am – 9:25 am	Bringing Students to Mathematics with Art and Animation Cinnamon Hillyard, University of Washington Bothell	
9:30 am – 9:45 am	Discovering Mathematics Through the Elon Traveling Science Center Crista Arangala, Elon University	
9:50 am – 10:05 am	Outreach – Planting Seeds for the Future and Retaining Students in Mathematics Through Mentoring and Tutoring Sangeeta Gad, University of Houston-Downtown	
10:10 am – 10:25 am	The University of California, Davis Explore Math Program Eva Strawbridge, University of California, Davis	
8:30 am – 10:30 am	General Contributed Paper Session #1 Linda Becerra, University of Houston-Downtown Ron Barnes, University of Houston-Downtown	Valley Room The Fairmont San Jose
8:30 am – 8:45 am	Theoretical Considerations of Control Design for the Klein-Gordon Relativistic Wave Equation Katie Evans, Louisiana Tech University Belinda Batten, Oregon State University	
8:50 am – 9:05 am	Using a Genetic Algorithm to Improve Finite Element Solutions of Differential Equations via Mesh Rearrangement Will Miles, Stetson University Daniel Plante, Stetson University Matt Deyo-Svendsen, Stetson University	
9:10 am – 9:25 am	Capstone Projects for Senior Mathematics Majors Jason Moliterno, Sacred Heart University	
9:30 am – 9:45 am	Some Remarks on Convergence of Maximum Roots of a Fibonacci-type Polynomial Sequence Akililu Zeleke, Michigan State University Robert Molina, Alma College	
9:50 am – 10:05 am	A Spreadsheet Learning Environment (SLE) Jack Narayan, SUNY at Oswego Robert Schell, SUNY at Oswego	
10:10 am – 10:25 am	Recent Developments in Solving the Generalized Collatz Problem John Simons, University of Groningen, Netherlands	
8:30 am - 10:30 am	MAA Student Paper Session #1	Fairfield Room The Fairmont San Jose
8:30 am - 10:30 am	MAA Student Paper Session #2	Glen Ellen Room The Fairmont San Jose

9:00 am – 10:20 am	Panel: What They Think is Good Teaching Frank Morgan, Williams College Diana Davis, Williams College	Crystal Room The Fairmont San Jose
9:00 am – 10:20 am	Panel: Mathematics Outreach for Underrepresented Groups Elizabeth (Betsy) Yanik, Emporia State University	Gold Room The Fairmont San Jose
9:00 am – 10:20 am	Panel: Quantitative Literacy, Mathematics, and Civic Engagement: Teaching the Importance of Quantitative Literacy for a Healthy Democracy in a General Education Course Robert G. Root, Lafayette College Kira Hamman, Hood College Maura B. Mast, University of Massachusetts Boston	Club Regent The Fairmont San Jose
9:00 am – 5:00 pm	Exhibits and Book Sales	Imperial Ballroom The Fairmont San Jose
9:00 am – 5:00 pm	Student Hospitality Center Richard and Araceli Neal, American Society for the Communication of Mathematics	Imperial Ballroom The Fairmont San Jose
9:30 am – 10:20 am	MAA Invited Address Managing Natural Resources: Mathematics Meets Politics, Greed, and the Army Corps of Engineers Louis J. Gross, University of Tennessee	Regency Ballroom The Fairmont San Jose
10:30 am – 11:20 am	The Hedrick Lecture Series Mathematics of Dynamic Random Networks Lecture 1: Models of the Internet and the World Wide Web Jennifer Tour Chayes, Microsoft	Regency Ballroom The Fairmont San Jose
1:00 pm – 1:50 pm	MAA Student Lecture Splitting the Rent: Fairness Problems, Fixed Points, and Fragmented Polytopes Francis Edward Su, Harvey Mudd College	Regency 1 The Fairmont San Jose
1:00 pm – 2:20 pm	Panel: Calculus in High School: What is Happening? What Do We Need to Know? David Bressoud, Macalester College Dan Teague, North Carolina School of Science and Mathematics	Club Regent The Fairmont San Jose
1:00 pm – 2:20 pm	Panel: MAA-Summa: National Research Experiences for Undergraduates Program William Hawkins, MAA and University of D.C. Robert Megginson, University of Michigan	Empire Room The Fairmont San Jose
1:00 pm – 3:00 pm	Minicourse #1 Part 1: A Novel Approach to Problem Solving in Discrete Mathematics Andy Liu, University of Alberta	California Room The Fairmont San Jose
1:00 pm – 3:00 pm	Minicourse #4 Part 1: More Music and Mathematics Leon Harkleroad, Wilton, Maine	Garden Room The Fairmont San Jose

Schedule of Events

FRIDAY, AUGUST 3 CONTINUED

1:00 pm – 3:00 pm	Contributed Paper Session Emerging Technologies for Mathematics Teaching Lila F. Roberts, Georgia College & State University Amy F. Kelley, Georgia College & State University	Sacramento Room The Fairmont San Jose
1:00 pm - 1:15 pm	Storytelling, Mathematics, and the Digital Tradition: A Historical Context for Conveying Mathematics Mike Martin, Johnson County Community College	
1:20 pm - 1:35 pm	Using a Wiki to Encourage Collaborative Learning in Linear Algebra Murphy Waggoner, Simpson College	
1:40 pm - 1:55 pm	Strategies on Teaching Mathematics to Students of the e-Generation Chen-Han Sung, Texas A&M International University	
2:00 pm - 2:15 pm	Using Iclickers to Enhance Student Engagement in Calculus Adam Lucas, Saint Mary's College of California	
2:20 pm - 2:35 pm	Podcasts, Video "Tutors" and More in Introductory Statistics Patricia B. Humphrey, Georgia Southern University	
2:40 pm - 2:55 pm	A Pocket Full of Mathematics Lila F. Roberts, Georgia College & State University	
1:00 pm - 3:00 pm	General Contributed Paper Session #2 Jay Schiffman, Rowan University Daniel Birmajer, Nazareth College	Valley Room The Fairmont San Jose
1:00 pm – 1:15 pm	Fortunatus's Purse: A Many-Colored Story Susan Goldstine, St. Mary's College of Maryland	
1:20 pm – 1:35 pm	Pappus, Guldin, and James Gregory Too Andrew Leahy, Knox College	
1:40 pm – 1:55 pm	The Historical Development of the Secant Method in 1-D Joanna Papakonstantinou, Rice University	
2:00 pm – 2:15 pm	Mathematical Curiosities Linda Becerra, University of Houston- Downtown Ron Barnes, University of Houston- Downtown	
2:20 pm – 2:35 pm	Exploring Binary Expansions with a Number Game Azar Khosravani, Columbia College Chicago	
1:00 pm – 4:00 pm	Invited Paper Session Manifolds with Density and Partitioning Problems Frank Morgan, Williams College	Gold Room The Fairmont San Jose
1:00 pm - 1:15 pm	Manifolds with Density, Partitioning Problems, and the SMALL undergraduate research project Frank Morgan, Williams College	
1:20 pm - 1:35 pm	The Story Behind the Proof of the Double Bubble Conjecture Michael Hutchings, University of California, Berkeley	
1:40 pm - 1:55 pm	Double Bubbles in Spheres and Gauss Space Neil Hoffman, The University of Texas, Austin	

2:00 pm - 2:15 pm	Optimal Partitions of the Sphere Anthony Marcuccio, Williams College	
2:20 pm - 2:35 pm	Isoperimetric Inequalities Max Engelstein, Yale University	
2:40 pm - 2:55 pm	The Geometry of Manifolds with Density Quinn Maurmann, Brown University	
3:00 pm - 3:15 pm	Perimeter-minimizing Regions in Surfaces with Density Taryn Pritchard, Williams College	
3:20 pm - 3:35 pm	PlanetMath.org and the Hyperreal Dictionary Project Joseph Corneli, PlanetMath.org	
3:40 pm - 4:00 pm	Surprise	
1:00 pm – 4:00 pm	Invited Paper Session Mathematical Questions in Bioinformatics Jennifer Galovich, St. John's University Laurie Heyer, Davidson College	Regency 2 The Fairmont San Jose
1:00 pm - 1:25 pm	Phylogenetics Meets Genomics: Challenges in Inferring Evolutionary Relatedness Using Genome-Scale Data Laura Kubatko, The Ohio State University	
1:30 pm- 1:55 pm	Microarray Data Analysis Stephen Billups, University of Colorado at Denver	
2:00 pm - 2:25 pm	Distribution of Segment Lengths in Genome Rearrangements Glenn Tesler, Univeristy of California at San Diego	
2:30 pm - 2:55 pm	DNA Codewords and De Bruijn Sequences Stephen Hartke, University of Illinois	
3:00 pm - 3:25 pm	Living Hardware: Solving the Hamiltonian Path Problem with DNA Laurie Heyer, Davidson College	
3:30 pm	(Discussion led by organizers)	
1:00 pm – 5:30 pm	Contributed Paper Session Current Issues in Mathematics Education Carol Vobach, University of Houston-Downtown Nancy Leveille, University of Houston-Downtown	Hillsborough Room The Fairmont San Jose
1:00 pm - 1:15 pm	Integrating Math and Secondary Math Education Majors in a Freshman and Sophomore Level Curriculum Jenna Carpenter, Louisiana Tech University Galen Turner, Louisiana Tech University	
1:15 pm - 1:30 pm	Using Oral Exams to Help Prepare Future Elementary Mathematics Teachers Russell Goodman, Central College	
1:30 pm - 1:45 pm	The Use of Alternate Base Systems in the Preparation of Pre-Service Elementary Teachers Sharon Siegel, Francis Marion University	
1:45 pm - 2:00 pm	Global Experiences in Mathematics Education Elana Epstein, St. Joseph's College - New York	

Schedule of Events

FRIDAY, AUGUST 3 CONTINUED

2:00 pm - 2:15 pm	How High School Mathematics Teachers are Produced in Japan Kazuko West, Keio Academy of New York	
2:15 pm - 2:30 pm	Ethnomathical Activities in the Post-Secondary Classroom: Linking Curriculum Standards to Practice Yvette d'Entremont, University of Alberta	
2:30 pm - 2:45 pm	A Student Exploration of the Texas State Standards for Mathematics Education Meg Huddleston, Schreiner University	
2:45 pm - 3:00 pm	Integrating the TI-84 Plus Silver Edition in a Calculus Concept Course for Teachers Sandra Richardson, Lamar University	
3:00 pm - 3:15 pm	Mathematics In Pre-Service Elementary School Teacher Programs In China And The US Hong Yuan, Shanghai Normal University; and Annie Han, Borough of Manhattan Community College	
3:15 pm - 3:30 pm	Evaluation Of A MSP-Professional Development Project Gulden Karakoki, Oregon State University	
3:30 pm - 3:45 pm	How To Improve Middle School Mathematics Teacher Quality: Lessons Learned From 2005-2007 Texas TQGP Grants Chen-Han Sung, Texas A & M International University	
3:45 pm - 4:00 pm	Mathematics Minors for Elementary Education Majors: Followup Report Robert Buck, Slippery Rock University	
4:00 pm - 4:15 pm	Probability And Statistics For Elementary Teachers At Western Oregon University Scott Beaver, Western Oregon University	
4:15 pm - 4:30 pm	Mathematics Knowledge And Fluency Inservice Teachers Need To Create Technology-Enhanced Mathematical Tasks James Epperson, University of Texas at Arlington	
4:30 pm - 4:45 pm	Mathematical (Pro)Logic: More Is Less Is More Robert McGrail, Bard College	
4:45 pm - 5:00 pm	The History And Influence Of Women In Mathematics Education Joan DeBello, St. Johns University	
5:00 pm - 5:15 pm	To Be, Or Not To Be Satish Bhatnager, University of Nevada Los Vegas	
1:00 pm – 6:00 pm	Euler Society Invited Paper Session Leonard Euler Tercentenary: 1707 - 2007 Robert Bradley, Adelphi University Edward Sandifer, Western Connecticut State University	Atherton Room The Fairmont San Jose
1:00 pm – 1:50 pm	Euler on the Principles of Elasticity Stacy Langton, University of San Diego	
2:00 pm – 2:50 pm	Geometry and Calculus in Euler's Mechanics Dieter Suisky, Humboldt University, Berlin	
3:00 pm – 3:50 pm	Euler's New Theory of Music Mark McKinzie, St. John Fisher College	

4:00 pm – 4:50 pm	A Potpourri from Euler Maria Clara Nucci, University of Perugia	
5:00 pm – 5:50 pm	How Euler Almost Did It Lawrence D'Antonio, Ramapo College	
2:00 pm - 6:15 pm	MAA Student Paper Session #3	TBD San Jose State University
2:00 pm - 6:15 pm	MAA Student Paper Session #4	TBD San Jose State University
2:00 pm - 6:15 pm	MAA/Pi Mu Epsilon Student Paper Session	TBD San Jose State University
2:00 pm - 6:15 pm	Pi Mu Epsilon Student Paper Session #1	TBD San Jose State University
2:00 pm - 6:15 pm	Pi Mu Epsilon Student Paper Session #2	TBD San Jose State University
2:30 pm – 3:50 pm	Panels: Beyond Email: Using Web-Based Tools for Collaborative Work Magnhild Lien, California State University Northridge Michael Pearson, Director of Programs and Services, MAA Ivars Peterson, Director of Publications for Journals and Communications, MAA	Club Regent The Fairmont San Jose
2:30 pm – 4:30 pm	Mathematical and Theoretical Biology Institute Poster Session	Imperial Ballroom The Fairmont San Jose
2:30 pm – 5:00 pm	MAA Section Officers Meeting Moderator: Nancy L. Hagelgans, Ursinus College	Crystal Room The Fairmont San Jose
3:15 pm - 5:15 pm	General Contributed Paper Session #3 John Simons, University of Groningen, Netherlands James Fulmer, University of Arkansas at Little Rock	Valley Room The Fairmont San Jose
3:15 pm – 3:30 pm	A Brief History of the Genus Concept Azar Khosravani, Columbia College Chicago	
3:35 pm – 3:50 pm	Arithmetic in the Ring of Integer Formal Power Series Daniel Birmajer, Nazareth College	
3:55 pm – 4:10 pm	Mentoring Students for Success in STEM Tingxiu Wang, Oakton Community College Gloria Liu, Oakton Community College Joe Kotowski, Oakton Community College Bob Sompolski, Oakton Community College	
4:15 pm – 4:30 pm	Multi-Ordered Posets Kendra Killpatrick, Pepperdine University	
4:35 pm – 4:50 pm	Computation of the Jacobsthal Function for $n \leq 50$ Thomas R. Hagedorn, The College of New Jersey	
4:55 pm – 5:10 pm	An Alternative Evaluation of $\lim_{x \rightarrow \infty} \sum_{n=1}^{\infty} \frac{(-1)^{n+1}}{n!} (\ln x)^n$ by an Alternative Technique to Integration by Parts Rahim Karimpour, Prince Mohammad Bin Fahd University	

Schedule of Events

FRIDAY, AUGUST 3 CONTINUED

3:15 pm – 6:15 pm	Contributed Paper Session Session 1: Innovative Ideas for Teaching Concepts in an Introductory Statistics Course Murray H. Siegel, South Carolina Governor School for Science and Mathematics	Sacramento Room The Fairmont San Jose
3:15 pm - 3:30 pm	Our Students: Calculators, Thinkers or Both? Magdalena Luca, Massachusetts College of Pharmacy & Health Sciences	
3:35 pm - 3:50 pm	Interactive Tools for Exploring Statistics Sarah Mabrouk, Framingham State College	
3:55 pm - 4:10 pm	Manual Labor: Developing a Laboratory Manual for an Introductory Statistics Course Christopher Barat, Villa Julie College	
4:15 pm - 4:30 pm	Feasible Inferential Statistics Projects for Introductory Statistics Kenneth Brown, College of San Mateo Cheryl Gregory, College of San Mateo	
4:35 pm - 4:50 pm	Developing Statistical Concepts: Simulating Type I and Type II Errors Penelope Dunham, Muhlenberg College	
4:55 pm - 5:10 pm	Is this an English Course? A Case Study Approach to Statistics for Non-Majors Ayesha Delpish, Elon University	
5:15 pm - 5:30 pm	Sampling + Simulation = Statistical Understanding: Dynamic Graphical Simulations in Excel Florence Gordon, New York Institute of Technology Sheldon Gordon, Farmingdale State College	
5:35 pm - 5:50 pm	Stimulating Statistics: Engaging Students in an Introductory Statistics Course Darlene Olsen, Norwich University	
5:55 pm - 6:10 pm	Using Captivate to Produce Tutorials for Statistics Packages Erin Hodgess, University of Houston - Downtown	
3:30 pm – 5:30 pm	Minicourse #3 Part 1: Teaching a Proof-Based Course as the Gateway to the Mathematics Major James Sandefur, Georgetown University	California Room The Fairmont San Jose
3:30 pm – 5:30 pm	Minicourse #6 Part 1: Using the History of Calculus to Enrich Our Teaching David Bressoud, Macalester College Paul Zorn, St. Olaf College	Garden Room The Fairmont San Jose
4:00 pm – 5:00 pm	Special MathFest Screening Flatland: The Movie Thomas Banchoff, Brown University	Regency 1 The Fairmont San Jose
4:00 pm – 5:30 pm	SIGMAA on Teaching Advanced High School Mathematics Business Meeting and Reception	Empire Room The Fairmont San Jose

4:30 pm – 5:30 pm	MAA-SMB Reception	Club Regent The Fairmont San Jose
5:00 pm – 6:00 pm	Graduate Student Reception	Regency 2 The Fairmont San Jose
7:00 pm – 9:00 pm	Euler Society Reading from Original Sources Robert Bradley, Adelphi University Edward Sandifer, Western Connecticut State University	Atherton Room The Fairmont San Jose
8:00 pm – 9:30 pm	Math Jeopardy John Harris, Furman University Mike Berry, University of Tennessee Mike Mossinghoff, Davidson College	Club Regent The Fairmont San Jose
9:00 pm – 11:00 pm	AWM-MAA Reception	Gold Room The Fairmont San Jose

SATURDAY, AUGUST 4

8:30 am – 9:20 am	MAA Invited Address Revenge of the Twin Prime Conjecture Daniel Goldston, San Jose State University	Regency Ballroom The Fairmont San Jose
8:30 am – 10:30 am	Invited Paper Session Gems in Applied Mathematics Kay Somers, Moravian College	Gold Room The Fairmont San Jose
8:30 am - 8:55 am	Size Matters Annalisa Crannell, Franklin & Marshall College	
9:00 am - 9:25 am	A Voting Theory Approach to Golf Scoring Michael A. Jones, Montclair State University	
9:30 am - 9:55 am	Unsolved Gems in Random Graphs Nathan Shank, Moravian College	
10:00 am - 10:30 am	Algebraic Models in Kinship Systems Jennifer Wilson, Eugene Lang College, The New School for Liberal Arts	
8:30 am – 10:30 am	Contributed Paper Session Session 1: Biomathematics in the First Two Years Timothy D. Comar, Benedictine University	Sacramento Room The Fairmont San Jose
8:30 am - 8:45 am	Biomathematics: Desegregating Mathematics and Biology Raina Robeva, Sweet Briar College	
8:50 am - 9:05 am	Application Bases that Span the Curriculum: Pharmacology and Cardiology Mike Martin, Johnson County Community College	
9:10 am - 9:25 am	Science One: Integrating Mathematical Biology into a First-Year Science Program Marc MacLean, University of British Columbia	
9:30 am - 9:45 am	Biocalculus and Beyond at Benedictine University and College of DuPage: Reaching Biology Students Timothy D. Comar, Benedictine University	

Schedule of Events

SATURDAY, AUGUST 4 CONTINUED

- 9:50 am - 10:05 am Mathematical Biology and Computational Algebra at the Sophomore Level
Kapila Attele, Chicago State University
Dan Hrozencik, Chicago State University
- 10:10 am - 10:30 am BIO2020: Looking Ahead
Bruce Carpenter, University of Illinois at Urbana Champaign
Debra Woods, University of Illinois at Urbana Champaign
- 8:30 am - 10:30 am Contributed Paper Session
Session 1: Graph Theory and Applications
Raluca Michelle Gera, Naval Postgraduate School
Richard M. Low, San Jose State University
Hillsborough Room
The Fairmont San Jose
- 8:30 am - 8:45 am Optimal Weighted and Stable Matchings on Graphs for
Increasing Live Donor Kidney Transplantation
Sommer Gentry, United States Navy Academy
- 8:50 am - 9:05 am Dynamic Domination in Graphs
Steve Horton, United States Military Academy
- 9:10 am - 9:25 am On Graphs with Optimal Non-Surjective $L(2,1)$ Labelings
David Mauro, Trinity College (CT)
- 9:30 am - 9:45 am Graph Classes Characterized both by Forbidden Subgraphs and Degree Sequences
Stephen Hartke, University of Illinois
- 9:50 am - 10:05 am Characterization of Randomly P_k -Decomposable Graphs, $2 \leq k \leq 11$
Robert Molina, Alma College
- 10:10 am - 10:25 am Graph Energy Change Due to Edge Deletion
Wasin So, San Jose State University
- 8:30 am - 10:30 am **MAA Student Paper Session #5**
Fairfield Room
The Fairmont San Jose
- 8:30 am - 10:30 am MAA Student Paper Session #7
Glen Ellen Room
The Fairmont San Jose
- 8:30 am - 11:30 am Euler Society Invited Paper Session
Leonard Euler Tercentenary: 1707 - 2007
Robert Bradley, Adelphi University
Edward Sandifer, Western Connecticut State University
Atherton Room
The Fairmont San Jose
- 8:30 am - 9:00 am Cataloging and Publishing Euler's Works: A History
Lee Stemkoski, Adelphi University
- 9:10 am - 9:40 am Euler and the English
Erik Tou, Carthage College
- 9:50 am - 10:20 am Euler, Lunar Theory, and the Calculus
Kim Plofker, Brown University
- 10:30 am - 11:20 am Partitions, Divisor Sums, and the Pentagonal Number Theorem
Brian Hopkins, Saint Peter's College

8:30 am – 11:30 am	Invited Paper Session Mathematical and Theoretical Biology Institute/Institute for Strengthening the Understanding of Mathematics and Science (MTBI/SUMS) Undergraduate Research Program Carlos Castillo-Chavez, Arizona State University	Empire Room The Fairmont San Jose
9:00 am – 10:20 am	Panel: Starting and Maintaining a Student Industrial Research Program in the Mathematical Sciences Maria Cayco, San Jose State University Tim Hsu, San Jose State University	Club Regent The Fairmont San Jose
9:00 am – 10:20 am	Special Session for Graduate Students How to Apply for Jobs David Manderscheid, University of Iowa	Valley Room The Fairmont San Jose
9:00 am – 5:00 pm	Exhibits and Book Sales	Imperial Ballroom The Fairmont San Jose
9:00 am – 5:00 pm	Student Hospitality Center	Imperial Ballroom The Fairmont San Jose
9:30 am – 10:20 am	The Hedrick Lecture Series Mathematics of Dynamic Random Networks Lecture 2: Mathematical Behavior of Random Scale-Invariant Networks Jennifer Tour Chayes, Microsoft	Regency Ballroom The Fairmont San Jose
10:30 am – 11:20 am	MAA Invited Address James R. Leitzel Lecture On Being a Mathematical Citizen: The Natural NExT Step Lynn A. Steen, St. Olaf College	Regency Ballroom The Fairmont San Jose
11:30 am - 12:00 pm	MAA Prize Session Moderator: Martha J. Siegel, Towson University	Regency Ballroom The Fairmont San Jose
1:00 pm - 1:50 pm	NAM David Blackwell Lecture Puzzling Probabilities Featuring the Street Game of Craps Jack Alexander, Miami Dade College	Regency 1 The Fairmont San Jose
1:00 pm – 1:50 pm	MAA Undergraduate Student Activities Session Origami, Polyhedra, and Mathematics Eve Torrence, Randolph-Macon College	Club Regent The Fairmont San Jose
1:00 pm – 2:20 pm	Panel: The Department Self-Study: How to Ensure That it is Purposeful Donna Beers, Simmons College Kyle Riley, South Dakota School of Mines and Tech.	Crystal Room The Fairmont San Jose
1:00 pm – 2:30 pm	Graduate Student Poster Session Organizer: James Freeman, Cornell College	Imperial Ballroom The Fairmont San Jose
1:00 pm – 2:30 pm	Special Workshop Session 1: Essential Reasoning Abilities and Conceptual Foundations for Beginning Calculus, Marilyn Carlson, Arizona State University	Empire Room The Fairmont San Jose

Schedule of Events

SATURDAY, AUGUST 4 CONTINUED

1:00 pm – 3:00 pm	Contributed Paper Session Session 1: Mathematics and the Arts Douglas E. Norton, Villanova University	Hillsborough Room The Fairmont San Jose
1:00 pm – 1:15 pm	Physical Aesthetics: Scientific Metaphors in the Visual Arts Steven Zides, Wofford College	
1:20 pm – 1:35 pm	Symmetry, Sewing, and Service: Quilt Design in a Symmetry Course Murphy Waggoner, Simpson College	
1:40 pm – 1:55 pm	Symmetry Groups, Subgroups, and Cosets in Counted Cross Stitch Mary Shepherd, Northwest Missouri State University	
2:00 pm – 2:15 pm	Three-dimensional Finite Point Groups and the Symmetry of Beaded Beads Gwen Fisher, California Polytechnic State University	
2:20 pm – 2:35 pm	How Does a Course in the Mathematics of Symmetry Affect Students in the Liberal Arts? Blake Mellor, Loyola Marymount University	
2:40 pm – 2:55 pm	Mathematics, Music, and the Guitar (Preliminary Report) Martin Flashman, Humboldt State University	
1:00 pm – 3:00 pm	Contributed Paper Session Session 2: Biomathematics in the First Two Years Timothy D. Comar, Benedictine University	Valley Room The Fairmont San Jose
1:00 pm - 1:15 pm	Integrating College Algebra and Statistics to Meet Students' Mathematical Needs in Biology Sheldon Gordon, Farmingdale State College	
1:20 pm - 1:35 pm	Discretion is the Better Part of Valine: Why Biology Majors Should Take Discrete Mathematics David Hunter, Westmont College	
1:40 pm - 1:55 pm	Fish Populations in the South San Francisco Bay, 1972--2002 Susan Diesel, Norwich University	
2:00 pm - 2:15 pm	Integrating Mathematics and Biology Through Storytelling: Some Insights into the SYMBIOSIS Project Jeff Knisley, Eastern Tennessee State University Istvan Karsai, Eastern Tennessee State University	
2:20 pm - 2:35 pm	Integrating Math and Biology through Storytelling: The Salmon Example Istvan Karsai, Eastern Tennessee State University Thomas Schmickl, Eastern Tennessee State University Jeff Knisley, Eastern Tennessee State University	
2:40 pm - 2:55 pm	Integrating Mendelian Genetics with Probability and Statistics: A Teaching Module of SYMBIOSIS Karl Jopin, Eastern Tennessee State University	
1:00 pm – 3:00 pm	Minicourse #1 Part 2: A Novel Approach to Problem Solving in Discrete Mathematics Andy Liu, University of Alberta	California Room The Fairmont San Jose

1:00 pm – 3:00 pm	Minicourse #2 Part 1: Infusing Connections into Core Courses for Secondary Teachers Steve Benson, Education Development Center Al Cuoco, Education Development Center Karen Graham, University of New Hampshire Neili Portnoy, University of New Hampshire	Garden Room The Fairmont San Jose
1:00 pm – 3:30 pm	Invited Paper Session Research with Undergraduates Mario Martelli, Claremont McKenna College	Regency 2 The Fairmont San Jose
1:00 pm - 1:25 pm	Eigenvalues of Random Matrices Estelle Basor, Cal Poly San Luis Obispo	
1:30 pm - 1:55 pm	The Double Bubble Theorem Frank Morgan, Williams College	
2:00 pm - 2:25 pm	An Inverse Theorem in Additive Number Theory Mike O'Neill, Claremont McKenna College	
2:30 pm - 3:00 pm	Solvability of Semi-Linear, Two-Point Boundary Value Problems Adolfo Rumbos, Pomona College	
1:00 pm – 4:00 pm	Invited Paper Session Prime Numbers – New Developments on Ancient Problems Dan Goldston, San Jose State University Carl Pomerance, Dartmouth College	Gold Room The Fairmont San Jose
1:00 pm - 1:40 pm	Primal Screens Carl Pomerance, Dartmouth College	
1:45 pm - 2:25 pm	The Riemann Hypothesis, Random Matrices, And Primes Brian Conrey, American Institute of Mathematics	
2:30 pm - 3:10 pm	Progressions Of Primes Kannan Soundararajan, Stanford University	
3:15 pm - 3:55 pm	Primes, Research, Academic Freedom, And How the NSA Got What It Wanted (But Not What It Asked For) Susan Landau, Sun Microsystems	
1:00 pm – 5:15 pm	Contributed Paper Session Getting Students to Discuss and to Write About Mathematics Murphy Waggoner, Simpson College	Sacramento Room The Fairmont San Jose
1:00 pm – 1:10 pm	Poster Projects: Mathematics In Context Sharon Brown, Humboldt State University Beth Burroughs, Humboldt State University	
1:15 pm – 1:25 pm	Seeing The Forest Through The Trees: How to Stop Students From Memorizing Advanced Calculus Proofs Scott Beaver, Western Oregon University	
1:30 pm – 1:40 pm	Assessing Student Presentations of New Material in Advanced Calculus Scott Beaver, Western Oregon University	
1:45 pm – 1:55 pm	Preparing Students for a Senior Seminar Research Project Darlene Olsen, Norwich University	

Schedule of Events

SATURDAY, AUGUST 4 CONTINUED

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| 2:00 pm – 2:10 pm | Reflecting, Writing, and Presenting Mathematics in a Senior Capstone Course
Sarah A Stewart, Belmont University | |
| 2:15 pm – 2:25 pm | Writing about Applications in Linear Algebra
David Hartz, College Of St Benedict | |
| 2:30 pm – 2:40 pm | Writing as an Effective Teaching and Assessment Tool
Anna Davis, Ohio Dominican University | |
| 2:45 pm – 2:55 pm | Non-Euclidean Geometry: A Writing Intensive Course
Teviaan Dray, Oregon State University | |
| 3:00 pm – 3:10 pm | Thinking, Speaking, Writing: The Hamilton Senior Seminar
Sally Cockburn And Richard Bedient, Hamilton College | |
| 3:15 pm – 3:25 pm | Let's Discuss It – Online!
Sarah L Mabrouk, Framingham State College | |
| 3:30 pm – 3:40 pm | Using Classroom Voting to Promote Discussions
Kelly Cline, Carroll College | |
| 3:45 pm – 3:55 pm | My Talk Is Better Than Yours
Tracey Mcgrail, Marist College | |
| 4:00 pm – 4:10 pm | How Do You Know What You Know? (And Other Big Questions)
Stephanie Salomone, University Of Portland | |
| 4:15 pm – 4:25 pm | Oral And Written Communication of Mathematics
In An Introduction To Analysis Course
Thomas Read, Western Washington University | |
| 4:30 pm – 4:40 pm | Where Are We From? - An Entire Class Project
Jeff Johannes, Suny Geneseo | |
| 4:45 pm – 4:55 pm | Using an Inquiry Based Approach to Improve Student Proofs
Feryal Alayont, Grand Valley State University | |
| 5:00 pm – 5:10 pm | Discussing and Writing in an Online Course
Margaret Morrow, Suny Plattsburgh | |
| 1:00 pm – 5:30 pm | Euler Society: Contributed Paper Session
Leonhard Euler: Life, Work, and Legacy
Robert Bradley, Adelphi University
Edward Sandifer, Western Connecticut State University | Atherton Room
The Fairmont San Jose |
| 1:00 pm – 1:35 pm | On Euler's Partition Theorem Relating Odd-Part Partitions
and Distinct-Part Partitions
James Sellers, Pennsylvania State University | |
| 1:45 pm - 2:20 pm | Why Wasn't There an Eighth Bridge?
Thomas Drucker, University of Wisconsin-Whitewater | |
| 2:30 pm – 2:50 pm | Classroom Activities from Elementa Doctrinae Solidorum (E230)
John Bukowski, Juniata College | |
| 3:00 pm – 3:20 pm | Teaching a Liberal Arts Seminar on Leonhard Euler
Robert E. Bradley, Adelphi University | |
| 3:30 pm – 3:50 pm | Euler's Contribution to Rational Fluid Mechanics and Naval Science
Axel Mainzer Koenig, Koenig & Associates, Inc. | |

4:00 pm – 4:20 pm	On Euler's 1770 Paper Problema Algebraicum (E407) Johan Mebius, Delft University of Technology	
4:30 pm – 4:50 pm	Euler and Analytic Number Theory Jordan Bell, Carleton University	
5:00 pm – 5:20 pm	Please Pass the Pi: Euler and the Digit Race Ed Sandifer, Western Connecticut State University	
2:00 pm – 3:00 pm	MAA/Pi Mu Epsilon Student Paper Session	Piedmont Room The Fairmont San Jose
2:00 pm – 3:30 pm	MAA Alder Awards Session Joe Gallian, University of Minnesota, Duluth	Regency 1 The Fairmont San Jose
2:00 pm – 5:00 pm	MAA Student Paper Session #6	Fairfield Room The Fairmont San Jose
2:00 pm – 5:00 pm	MAA Student Paper Session #8	Glen Ellen Room The Fairmont San Jose
2:00 pm – 5:00 pm	Pi Mu Epsilon Student Paper Session #3	Cupertino Room The Fairmont San Jose
2:00 pm – 5:00 pm	Pi Mu Epsilon Student Paper Session #4	Belvedere Room The Fairmont San Jose
2:30 pm – 3:50 pm	Panel: Curriculum Development and Research By Undergraduates in Mathematical Biology Jason Miller, Truman State University K. Renee Fister, Murray State University	Crystal Room The Fairmont San Jose
2:30 pm – 4:30 pm	Panel: Learning to Prove: Strategies to Improve Students' Proof Writing Skills Cheryl Olsen, Shippensburg University	Club Regent The Fairmont San Jose
3:00 pm – 4:00 pm	Exhibit Hall Reception Sponsored by Addison Wesley	Imperial Ballroom The Fairmont San Jose
3:15 pm – 4:35 pm	Panel: Administering the American Mathematics Competitions at a College or University Steve Dunbar, MAA American Mathematics Competitions	Empire Room The Fairmont San Jose
3:15 pm – 5:30 pm	Contributed Paper Session Fun and Innovative Teaching Techniques for an Abstract Algebra Class Sharon Clarke, Pepperdine University Andrew Hetzel, Tennessee Tech University	Hillsborough Room The Fairmont San Jose
3:15 pm – 3:30 pm	You "Can" Hold a Group in Your Hand Ezra Brown, Virginia Tech University	
3:35 pm – 3:50 pm	More Group Tables and Subgroup Diagrams John Jones, Arizona State University	
3:55 pm – 4:10 pm	A Colorful Introduction to Group Theory Amber Rosin, Cal Poly Pomona University	

Schedule of Events

SATURDAY, AUGUST 4 CONTINUED

4:15 pm – 4:30 pm	Groups Unlimited: A New Software Program Nancy Rodgers, Hanover College Doug Anewalt, Hanover College Paul Lee, Hanover College	
4:35 pm – 4:50 pm	Maple and Flash Animations for Abstract Algebra Dorothy Zeiser, Gwynedd-Mercy College	
4:55 pm – 5:10 pm	Exploring the Composition Laws of Small Groups with a Pack of Cards Colm Mulcahy, Spelman College	
5:15 pm – 5:30 pm	Activities in Abstract Algebra: Advantages and Challenges Jerry Morris, Spelman College Brigitte Lahme, Spelman College	
3:30 pm – 5:30 pm	MAA Video Session Porridge, Pulleys, and Pi/Two Mathematical Journeys	Valley Room The Fairmont San Jose
3:30 pm – 5:30 pm	Minicourse #4 Part 2: More Music and Mathematics Leon Harkleroad, Wilton, Maine	Garden Room The Fairmont San Jose
3:30 pm – 5:30 pm	Minicourse #5 Part 1: Some Deterministic Models in Mathematical Biology and Their Simulation James Selgrade, North Carolina State University Hüseyin Koçak, University of Miami	California Room The Fairmont San Jose
3:40 pm – 5:00 pm	Panel: The Psychology of the Mathematician Steve Krantz, Washington University	Regency 1 The Fairmont San Jose
3:40 pm – 5:00 pm	Panel: The San Francisco Bay Area Math Circles a Decade Later Hugo Rossi, University of Utah	Regency 2 The Fairmont San Jose
4:15 pm – 5:15 pm	SIGMAA on the Philosophy of Mathematics Guest Lecture The Meaning of Existence in Mathematics Michael Beeson, San Jose State University	Crystal Room The Fairmont San Jose
4:15 pm – 6:15 pm	SIGMAA on Environmental Mathematics Business Meeting and Guest Lecturer	Gold Room The Fairmont San Jose
5:15 pm – 6:15 pm	SIGMAA on the Philosophy of Mathematics Reception	Crystal Room The Fairmont San Jose
6:00 pm – 7:45 pm	Pi Mu Epsilon Banquet and Awards Ceremony	San Jose State University
7:00 pm – 9:00 pm	Euler Society Reading from Original Sources Robert Bradley, Adelphi University Edward Sandifer, Western Connecticut State University	Atherton Room The Fairmont San Jose
8:00 pm – 8:50 pm	Pi Mu Epsilon J. Sutherland Frame Lecture NegaFibonacci Numbers and the Hyperbolic Plane Donald E. Knuth, Stanford University	Regency Ballroom The Fairmont San Jose

9:00 pm – 10:00 pm

MAA Celebration: 20 Years of Student Papers

Crystal Room
The Fairmont San Jose

SUNDAY, AUGUST 5

8:30 am – 9:20 am

AWM-MAA Etta Z. Falconer Lecture
Comparing Evolutionary Trees
Katherine St. John, City College of New York

Regency Ballroom
The Fairmont San Jose

8:30 am – 10:30 am

Euler Society Invited Paper Session
Leonard Euler Tercentenary: 1707 - 2007
Robert Bradley, Adelphi University
Edward Sandifer, Western Connecticut State University

Atherton Room
The Fairmont San Jose

8:30 am – 9:20 am

The End of His Triumph: Euler's Second St. Petersburg Years
Edward Sandifer, Western Connecticut State University

9:30 am – 10:20 am

Euler Can't Resist Ballistics
Shawnee McMurrin, California State University, San Bernardino

8:30 am – 10:30 am

Contributed Paper Session
Student Research in Industrial Mathematics
Bem Cayco, San Jose State University
Tim Hsu, San Jose State University

Piedmont Room
The Fairmont San Jose

8:30 am – 8:45 am

Camcos: Challenges and Rewards
Bem Cayco, San Jose State University

8:50 am – 9:05 am

Increasing Productivity at Staples Inc.
Mary Servatius, Worcester Polytechnic Institute

9:10 am – 9:25 am

Mathematical And Statistical Consulting
At Wheaton College
Michael Kahn and Thomas Ratliff, Wheaton College

9:30 am – 9:45 am

Maximizing Information From Accumulating Data
Through Bayesian Adaptive Sampling
Marian Hofer, California State University, East Bay

9:50 am – 10:05 am

Senior Clinic Projects: Capstone Experience
For Students, Exercise In Self-Restraint For Faculty
Susan Martonosi, Harvey Mudd College

10:10 am – 10:25 am

Student Research in Applied Mathematics at San Jose State
Slobodan Simic, San Jose State University

8:30 am – 10:30 am

Contributed Paper Session
Teaching Calculus in High School: Ideas that Work
Dan Teague, North Carolina School of Science and Mathematics
Susan Schwartz Wildstrom, Walt Whitman HS

Sacramento Room
The Fairmont San Jose

8:30 am – 8:45 am

Teaching Mathematics: Majors Vs. Users
Bradley Stoll, The Harker School

8:50 am – 9:05 am

Discover the FTC Via Numerical Integration
Doug Kuhlmann, Andover Academy

9:10 am – 9:25 am

Unmasking Implicitly Defined Functions in Calculus
Dave Renfro, ACT

Schedule of Events

SUNDAY, AUGUST 5 CONTINUED

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|---------------------|---|--|
| 9:30 am – 9:45 am | Mental Substitution: A Powerful Tool in Doing Integration and Integration By Parts
Qibo Jing, Saint Anthony High School | |
| 9:50 am – 10:05 am | California Gold from an Old Timer
Brad Huff, Edison High School & University High School, retired | |
| 10:10 am – 10:25 am | Using Average Velocity to Illustrate FTC
Dan Lotesto, Milwaukee Public Schools | |
| 8:30 - 10:30 am | General Contributed Paper Session #4
Vincent van Joolen, United States Navy Academy
Monika Vo, Saint Leo University | Valley Room
The Fairmont San Jose |
| 8:30 am – 8:45 am | Symbolic Dynamics and Irrational Rotations on the Circle
David Richeson, Dickinson College | |
| 8:50 am – 9:05 am | A Mean Value Theorem for a Number Field
Behailu Mammo, Hofstra University | |
| 9:10 am – 9:25 am | Putting Differentials Back into Differential (and Integral) Calculus
Tevian Dray, Oregon State University | |
| 9:30 am – 9:45 am | Exploring Prime Distances with MATHEMATICA and the VOYAGE 200 CAS
Jay Schiffman, Rowan University | |
| 9:50 am – 10:05 am | Pascal's Square: Determinants, Bernoulli Polynomials, and the Arithmetical Triangle
Hieu D. Nguyen, Rowan University
Robert Booth, Rowan University | |
| 10:10 am – 10:25 am | The Interassociates of the Semigroup of Injective Functions on the Natural Numbers
Berit Givens, Cal Poly Pomona
Amber Rosin, Cal Poly Pomona | |
| 8:30 - 10:30 am | General Contributed Paper Session #5
Jonathan Lambright, Savannah State University
Gloria Liu, Oakton Community College | Glen Ellen Room
The Fairmont San Jose |
| 8:30 am – 8:45 am | On a Combinametric Approach to Goldbach Conjecture
Balu Balasundaram, Harvard Institute for Learning in Retirement | |
| 8:50 am – 9:05 am | Financial Planning Using Spreadsheets: A Discrete Application of Calculus
Maijian Qian, California State University, Fullerton | |
| 9:10 am – 9:25 am | ELL Students and their Counterparts: An Analysis of TAKS Data
Kumer Das, Lamar University | |
| 9:30 am – 9:45 am | Patterns on Pascal's Triangle
Jim Fulmer, University of Arkansas at Little Rock
Tom McMillan, University of Arkansas at Little Rock | |
| 9:50 am – 10:05 am | Lost in Translation: A Reflection on the Ballot Problem and André's Original Method
Marc Renault, Shippensburg University | |
| 10:10 am – 10:25 am | Numbers with a Large Prime Factor
Roger Baker, Brigham Young University | |

8:30 am – 10:30 am Contributed Paper Session
 Session 3: Biomathematics in the First Two Years
 Timothy D. Comar, Benedictine University Belvedere Room
 The Fairmont San Jose

8:30 am - 8:45 am Mathematics in Genomic Analysis -- A Module for Biology Students
Vera Cherepinsky, Fairfield University

8:50 am - 9:05 am Sequence Alignment
 Bruce Torrence, Randolph-Macon College

9:10 am - 9:25 am Creating and Analyzing cDNA Microarrays:
 Building Collaborative Undergraduate Research Projects
 Consuelo Alvarez, Longwood University
 Myrtis Lunsford, Longwood University

9:30 am - 9:45 am A Calculus Module for Modeling Bioaccumulation,
Biomagnification, and Elimination of Mercury
 Frederick Adkins, Indiana University of Pennsylvania

9:50 am - 10:05 am A New Approach to Phyllotaxis
 Pau Atela, Smith College

10:10 am - 10:25 am Introducing Modeling Through Calculus Labs
 Gary De Young, Dordt College

8:30 am – 10:30 am Contributed Paper Sessions
 Session 1: Teaching a History
 of Mathematics Course
 Joel Haack, University of Northern Iowa
Amy Shell-Gellasch, Pacific Lutheran University Hillsborough Room
 The Fairmont San Jose

8:30 am – 8:45 am History for the Masses
 Charles Rocca, Western Connecticut State University

8:50 am – 9:05 am History of Mathematics for the Non-Mathematician
 Stan Schmidt, State University Of New York At New Paltz
 Robert Vivona, Marist College

9:10 am – 9:25 am Integrating Ancient Numeral Systems into a History of Mathematics Course
 Jim Fulmer, University Of Arkansas At Little Rock
 Tom Mcmillan, University Of Arkansas At Little Rock

9:30 am – 9:45 am Math History without Prerequisites
 Charlie Smith, Park University

9:50 am – 10:05 am Paradigms and Myths: A New Approach to Teaching the History of Mathematics
 William Fuller, Ohio Northern University

10:10 am – 10:25 am Using History in the Teaching of Mathematics: A Course for
 Pre-Service Secondary Mathematics Teachers
 Kathleen Clark, Florida State University

8:30 am – 11:15 am Contributed Paper Session
 Challenges and Successful Strategies in
 Teaching a Numerical Analysis Course
 Olga Brezneva, Miami University, Ohio Cupertino Room
 The Fairmont San Jose

8:30 am - 8:45 am Numerical Differential Equations
 at Northern Illinois University
 Gerard Awanou, Northern Illinois University

Schedule of Events

SUNDAY, AUGUST 5 CONTINUED

8:50 am - 9:05 am	A Very Applied Numerical Methods Project Michelle Ghrist, United States Air Force Academy	
9:10 am - 9:25 am	Assigning a "Toy Version" of the Google Page-Rank Matrix Problem as a Final Project Ilie Ugarcovici, DePaul University	
9:30 am - 9:45 am	Making Connections With Interpolation Kyle Riley, South Dakota School of Mines & Technology	
9:50 am - 10:05 am	A Divided-Difference Algorithm for Multivariable Interpolation Richard Neidinger, Davidson College	
10:10 am - 10:25 am	The Perfect Numerical Computing Environment Mark Gruenwald, University of Evansville	
10:30 am - 10:45 am	Computer Error is Not a Contradiction in Terms Anthony Tongen, James Madison University	
10:50 am - 11:05 am	Designing a Numerical Analysis Course: Key Elements, Ideas and Strategies That Work Olga Brezhneva, Miami University	
9:00 am – 10:30 am	MAA Mathematical Contest in Modeling (MCM) Winners Ben Fusaro, Florida State University	Gold Room The Fairmont San Jose
9:30 am – 10:20 am	The Hedrick Lecture Series Mathematics of Dynamic Random Networks Lecture 3: Convergent Sequences of Networks Jennifer Tour Chayes, Microsoft	Regency Ballroom The Fairmont San Jose
9:00 am – 11:00 am	Panel: Math Circles Tom Davis, Silicon Graphics Tatiana Shubin, San Jose State University Joshua Zucker, Castilleja School	Fairfield Room The Fairmont San Jose
9:00 am – 1:00 pm	Student Hospitality Richard and Araceli Neal, American Society for the Communication of Mathematics	Imperial Ballroom The Fairmont San Jose
9:00 am – 2:00 pm	Exhibits and Book Sales	Imperial Ballroom The Fairmont San Jose
10:30 am – 11:20 am	MAA Invited Address Why Did LaGrange "Prove" the Parallel Postulate? Judith V. Grabiner, Pitzer College	Regency Ballroom The Fairmont San Jose
11:30 am – 12:00 pm	MAA Business Meeting	Regency Ballroom
1:00 pm - 1:50 pm	Invited Address Euler in Three Acts William Dunham, Muhlenberg College	Regency 1 The Fairmont San Jose
1:00 pm – 2:20 pm	Panel: Developing Content-Based Masters Programs	Gold Room The Fairmont San Jose

	for In-Service Mathematics Teachers Karen Marrongelle, Portland State University Marjorie Enneking, Portland State University	
1:00 pm – 2:30 pm	Special Workshop Session 2: Essential Reasoning Abilities and Conceptual Foundations for Beginning Calculus Marilyn Carlson, Arizona State University	Empire Room The Fairmont San Jose
1:00 pm – 3:00 pm	Minicourse #2 Part 2: Infusing Connections into Core Courses for Secondary Teachers Steve Benson, Education Development Center Al Cuoco, Education Development Center Karen Graham, University of New Hampshire Neili Portnoy, University of New Hampshire	Garden Room The Fairmont San Jose
1:00 pm – 3:00 pm	Minicourse #3 Part 2: Teaching a Proof-Based Course as the Gateway to a Mathematics Major James Sandefur, Georgetown University	California Room The Fairmont San Jose
1:00 pm - 3:00 pm	General Contributed Paper Session #6 Carol Whyzmuzis, St. John's University Patricia Kiihne, Illinois College	Valley Room The Fairmont San Jose
1:00 pm – 1:15 pm	Getting Students to Learn from their Mistakes Vera Cherepinsky, Fairfield University	
1:20 pm – 1:35 pm	Classroom Voting in Linear Algebra and Differential Equations Kelly Cline, Carroll College	
1:40 pm – 1:55 pm	Culture Points: Engaging Students Outside the Classroom Kevin Hartshorn, Moravian College	
2:00 pm – 2:15 pm	Insights and Observations: Mathematics Education in Russia Helen Cloherty, St. John's University	
2:20 pm – 2:35 pm	Global Alliance Partitions in Graphs Ralucca Gera, Naval Postgraduate School Linda Eroh, University of Wisconsin Oshkosh	
2:40 pm – 2:55 pm	Lying Oracles and Misguided Tourists Marcus Pendergrass, Hampden-Sydney College	
1:00 pm - 3:00 pm	General Contributed Paper Session #7 Roger Baker, Brigham Young University Sarah Mabrouk, Framingham State College	Glen Ellen Room The Fairmont San Jose
1:00 pm – 1:15 pm	An Experience for On-line Quizzes Using Blackboard Kathy Zhong, University of Detroit Mercy	
1:20 pm – 1:35 pm	To My Mathlab or Not in College Algebra Monika Vo, Saint Leo University	
1:40 pm – 1:55 pm	Contemporary College Algebra: A Pilot Project For New Teaching Techniques in College Algebra Jonathan Lambright, Savannah State University	
2:00 pm – 2:15 pm	A New Day in Algebra Instruction: Implementation of a Computer-Assisted Learning Program in Algebra Mike Hall, Arkansas State University	

Schedule of Events

SUNDAY, AUGUST 5 CONTINUED

2:20 pm – 2:35 pm	Active Learning to Improve Student Performance in Remedial Mathematics Amy Wheeler, University of Cincinnati	
2:40 pm – 2:55 pm	Training Effective Tutors within Remedial Mathematics Bella Zamansky, University of Cincinnati Amy Wheeler, University of Cincinnati	
1:00 pm - 3:00 pm	General Contributed Paper Session #8 Balu Balasundaram, Harvard Institute for Learning in Retirement Behailu Mammo, Hofstra University	Belvedere Room The Fairmont San Jose
1:00 pm – 1:15 pm	The m th Ratio Test: New Convergence Tests For Series Sayel Ali, Minnesota State University, Moorhead and The Petroleum Institute/Abu Dhabi	
1:20 pm – 1:35 pm	Dynamical Systems on the Riemann Sphere Morgan Sherman, California State University, Channel Islands	
1:40 pm – 1:55 pm	Leximorphic Spaces Ellen Mir, Elon University	
2:00 pm – 2:15 pm	Six Pretabular Relevance Logics John Mersch, Northwestern State University of Louisiana	
2:20 pm – 2:35 pm	From Taylor to Cramer to Vandermonde to Schur: Finite Difference Approximations of Derivatives Random Grids Vincent van Joolen, United States Navy Academy	
2:40 pm – 2:55 pm	Mathematical Model for Myocyte Function David Blackman, UC Berkeley, Retired	
1:00 pm – 3:00 pm	Contributed Paper Session Session 2: Innovative Ideas for Teaching Concepts in an Introductory Statistics Class II Murray H. Siegel, South Carolina's Governor's School for Science & Mathematics, Hartsville, South Carolina	Piedmont Room The Fairmont San Jose
1:00 pm - 1:15 pm	Clicker Questions for Conceptual Understanding Teri Murphy, University of Oklahoma	
1:20 pm - 1:35 pm	Using Newspaper, Web, and Journal Articles in an Introductory Statistics Class Connie Campbell, Millsaps College	
1:40 pm - 1:55 pm	Using Simulations to Discover the Truth About Sampling Distributions Murray Siegel, SC Governor's School for Science & Mathematics	
2:00 pm - 2:15 pm	Basic Statistics via Elementary Geometry Pat Touhey, College Misericordia	
2:20 pm - 2:35 pm	Some More Lab Experiences in Introductory Statistics Patricia Humphrey, Georgia Southern University	
2:40 pm - 2:55 pm	Misconceptions About Statistics and Probability Kumer Das, Lamar University	

1:00 pm – 3:00 pm **Contributed Paper Session**
 Session 2: Mathematics and the Arts
 Douglas E. Norton, Villanova University **Belvedere Room**
 The Fairmont San Jose

1:00 pm – 1:15 pm Making Mathematics Dance
 Karl Schaffer, DeAnza College

1:20 pm – 1:35 pm A New Class of Fibonacci Tilings
 Pau Atela, Smith College

1:40 pm – 1:55 pm 4-Square Challenge
 Brian Hollenbeck, Emporia State University

2:00 pm – 2:15 pm Reading Flatland
 Scott Taylor, University of California, Santa Barbara

2:20 pm – 2:35 pm Linear Recurrence Relations in Music
 Carla Martin, James Madison University

2:40 pm – 2:45 pm Reflections on Spheres
 Annalisa Crannell, Franklin and Marshall College

1:00 pm – 3:45 pm **Contributed Paper Session**
 Advances in Recreational Mathematics
 Paul R. Coe, Dominican University
 Kristen Schemmerhorn, Dominican University **Sacramento Room**
 The Fairmont San Jose

1:00 pm – 1:15 pm Mathematical Problems from the Maine Farmer's Almanac
 Bruce Burdick, Roger Williams University

1:20 pm – 1:35 pm Arithmetic Combinations
 Bruce Torrence, Randolph-Macon College

1:40 pm – 1:55 pm Fibonacci Magic
 Colm Mulcahy, Spelman College

2:00 pm – 2:15 pm Circling the (Magic) Square
 Colm Mulcahy, Spelman College

2:20 pm – 2:35 pm Symmetry and Sudoku
 Lisa Mantini, Oklahoma State University

2:40 pm – 2:55 pm Solving Triangular Peg Solitaire
 George Bell, Tech - X Corporation

3:00 pm – 3:15 pm Let Us Teach Nim
 Jonathan Sadler, Capital University

3:20 pm – 3:35 pm Equally Likely Standard Dice Sums
 Amber Rosin, Cal Poly Pomona

1:00 pm - 3:00 pm Contributed Paper Session
 Session 2: Graph Theory and Applications
 Ralucca Michelle Gera, Naval Postgraduate School
 Richard M. Low, San Jose State University **Fairfield Room**
 The Fairmont San Jose

1:00 pm – 1:15 pm Hamiltonian Cycles Avoiding Sets of Edges in a Graph
 Michael Ferrara, University of Colorado, Denver

1:20 pm – 1:35 pm Linking in Straight-edge Embeddings of Complete Graphs

Schedule of Events

SUNDAY, AUGUST 5 CONTINUED

	Lew Ludwig, Denison University	
1:40 pm – 1:55 pm	A Note on Graphically Abelian Groups Kathryn Weld, Manhattan College	
2:00 pm – 2:15 pm	Minimum k-total Weights of Graphs Ji Young Choi, Shippensburg University	
2:20 pm – 2:35 pm	Strongest Monotone Lower Bound for the Independence Number of a Graph Nathan Kahl, Seton Hall University	
2:40 pm – 2:55 pm	Coloring the Generalized Tower of Hanoi Graphs Suzanne Doree, Augsburg College	
1:00 pm – 4:00 pm	Invited Paper Session Graph Theory Ideas for Undergraduate Research Aparna Higgins, University of Dayton	Crystal Room The Fairmont San Jose
1:05 pm - 1:35 pm	Minimum Tile Types for Self-Assembled DNA Graphs Joanna Ellis-Monaghan, Saint Michael's College	
1:40 pm - 2:10 pm	Iterated Line Graphs Stephen Hartke, University of Illinois at Urbana-Champaign	
2:15 pm - 2:45 pm	Small-world Networks Pallavi Jayawant, Bates College	
2:50 pm - 3:20 pm	Distance Properties of Graphs Steve Winters, University of Wisconsin Oshkosh	
1:00 pm – 4:30 pm	Special Workshop Sustaining Webwork a Web Based Interactive Homework System Michael E. Gage, University of Rochester Arnold K. Pizer, University of Rochester Vicki Roth, University of Rochester	Cupertino Room The Fairmont San Jose
1:30 pm – 4:30 pm	Geology Field Trip Ben Fusaro, Florida State University	Leaving from: The Fairmont San Jose
2:00 pm – 3:15 pm	Student Problem-Solving Competition Richard Neal, American Society for the Communication of Mathematics	Club Regent The Fairmont San Jose
2:00 pm – 5:00 pm	Contributed Paper Session Session 2: Teaching a History of Mathematics Course Joel Haack, University of Northern Iowa Amy Shell-Gellasch, Pacific Lutheran University	Hillsborough Room The Fairmont San Jose
2:00 pm – 2:15 pm	Teaching a 17 Day History of Mathematics Class - An Exercise in Prioritization Michael Reynolds, Mcpherson College	
2:20 pm – 2:35 pm	A History of Mathematics Course that Emphasizes the History of Calculus Daniel Kemp, South Dakota State University	
2:40 pm – 2:55 pm	Student Engagement in History of Mathematics	

	Pam Crawford, Jacksonville University	
3:00 pm – 3:15 pm	A Locally Compact REU in the History of Mathematics Kimber Tysdal, Hood College Betty Mayfield, Hood College	
3:20 pm – 3:35 pm	A Course in the History of Mathematics with Student Presentations and Some Original Sources John Bukowski, Juniata College	
3:40 pm – 3:55 pm	History of Mathematics at Ohio State: Web Resources Bostwick F. Wyman, Ohio State University Daniel W. Dotson, Ohio State University	
4:00 pm – 4:15 pm	Problem Solving and the History of Mathematics Lisa Mantini, Oklahoma State University	
4:20 pm – 4:35 pm	Teaching a History of Mathematics Course? – Enjoy! Sharon O'Donnell, Chicago State University	
4:40 pm – 4:55 pm	A Mathematical Journey Through Space and Time Maria Clara Nucci, University Of Perugia	
2:30 pm – 3:50 pm	Panels and Other Sessions Technically Speaking: Fostering the Communication Skills of Mathematics Students Lew Ludwig, Denison University	Gold Room The Fairmont San Jose
3:15 pm -5:15 pm	General Contributed Paper Session #9 Helen Cloherty, St. John's University Kevin Hartshorn, Moravian College	Valley Room The Fairmont San Jose
3:15 pm – 3:30 pm	Visualizing Mappings with Technology (Preliminary Report) Martin Flashman, Humboldt State University	
3:35 pm – 3:50 pm	How to Incorporate Mathematics into a General Biology Course Carol Whyzmuzis, St. John's University	
3:55 pm – 4:10 pm	Multiplication and Division Algorithms from a Historical Context Patricia Kihne, Illinois College	
4:15 pm – 4:30 pm	Enabling Student Success Across the Disciplines Through a Lab-Based Math Class. Derek Webb, Bemidji State University	
4:35 pm – 4:50 pm	Maxima and Minima Through Geometry Anand Kumar, Ramanujan School of Mathematics	
4:55 pm – 5:10 pm	Discovering Derivatives and Derivative Rules including Product, Quotient and Chain Rule Susan Wildstrom, Montgomery County Public Schools	
3:15 pm -5:15 pm	General Contributed Paper Session #10 Mike Hall, Arkansas State University Amy Wheeler, University of Cincinnati	Glen Ellen Room The Fairmont San Jose
3:15 pm – 3:30 pm	Sublimital Analysis Thomas Sibley, St. John's University	
3:35 pm – 3:50 pm	Hecke Algebras and Support Varieties for Algebraic Groups Weiping Li, Walsh University	
3:55 pm – 4:10 pm	Writing in a Pre-Calculus: "Why Does an Exponential Model Make Sense?" Murray H. Siegel, South Carolina Governor's School for Science and Mathematics	

Schedule of Events

SUNDAY, AUGUST 5 CONTINUED

4:15 pm – 4:30 pm	2X More Littlewood Oscillations Compared to MathFest2005 Gengmun Eng	
4:35 pm – 4:50 pm	Doctorate of Mathematics Education Programs in China - A Bright Future Annie Han, The City University of New York, BMCC Michael Sunderland, The City University of New York, CCNY Hong Yuan, Shanghai Normal University Chunxia Qi, Beijing Normal University, P.R.China	
4:55 pm – 5:10 pm	Rationale for History of Mathematics course Satish C Bhatnagar, University of Nevada, Las Vegas	
3:15 pm - 5:15 pm	General Contributed Paper Session #11 David Blackman, UC Berkeley, Retired Sayel Ali, Minnesota State University Moorhead and The Petroleum Institute/Abu Dhabi	Piedmont Room The Fairmont San Jose
3:15 pm – 3:30 pm	Four Dimensional Tic-Tac-Toe on a Torus - the Game of Set Jeff Johannes, SUNY Geneseo	
3:35 pm – 3:50 pm	Edge Nets of the Cube Vincent J. Matsko, Illinois Mathematics and Science Academy	
3:55 pm – 4:10 pm	On the Integer-magic Spectra of Tessellation Graphs Richard M. Low, San Jose State University	
4:15 pm – 4:30 pm	Using Tornadoes to Prove Regularity for PDEs Alex Meadows, St. Mary's College of Maryland	
4:35 pm – 4:50 pm	The Fascinating Perfect Numbers Mulatu Lemma, Savannah State University	
4:55 pm – 5:10 pm	Computational Studies of a Model of Signaling Pathways in Embryonic <i>Xenopus laevis</i> Edwin Tecarro, University of Houston-Downtown	
3:30 pm – 5:00 pm	Panels and Other Sessions Creating Geometric Islamic Patterns B. Lynn Bodner, Monmouth University	Club Regent The Fairmont San Jose
3:30 pm – 5:30 pm	Minicourse #5 Part 2: Some Deterministic Models in Mathematical Biology and Their Simulation James Selgrade, North Carolina State University Huseyin Kocak, University of Miami	California Room The Fairmont San Jose
3:30 pm – 5:30 pm	Minicourse #6 Part 2: Using the History of Calculus to Enrich our Teaching David Bressoud, Macalester College Paul Zorn, St. Olaf College	Garden Room The Fairmont San Jose
6:00 pm – 9:00 pm	MAA Silver and Gold Reception and Banquet	Adobe Lodge Santa Clara University



KEY COLLEGE AD

Invited Addresses

EARLE RAYMOND HEDRICK LECTURE SERIES THE MATHEMATICS OF DYNAMIC RANDOM NETWORKS

Jennifer Tour Chayes, Microsoft

During the past decade, dynamic random networks have become increasingly important in communication and information technology. Vast, self-engineered networks, such as the Internet, the World Wide Web, and Instant Messaging Networks, have facilitated the flow of information and served as media for social and economic interaction. I will present simple mathematical models that allow us to explain many observed properties of these networks, e.g., the scale-free nature of their degree distribution and the ease of information transmission (including transmission of viruses), and the first-to-market advantage for early nodes on these networks. I will also present a new general theory of limits of sequences of networks and discuss what this theory may tell us about dynamically growing networks.

LECTURE 1: MODELS OF THE INTERNET AND THE WORLD WIDE WEB

Friday, August 3, 10:30 am – 11:20 am

Regency Ballroom, The Fairmont San Jose

Although the Internet and the World Wide Web have many distinct features, both have a self-organized structure rather than the engineered architecture of previous networks, such as phone or transportation systems. As a consequence of this self-organization, the Internet and the World Wide Web have a host of properties that differ from those encountered in engineered structures: a broad power-law distribution of connections (so-called “scale-invariance”), short paths between two given points (so-called “small world phenomena” like “six degrees of separation”), strong clustering (leading to so-called “communities and subcultures”), robustness to random errors, but vulnerability to malicious attack, etc. During this lecture, I will first review some of the distinguishing observed features of these networks and then review the recent models that have been devised to explain these features. The basic models have their origins in graph theory and statistics.

LECTURE 2: MATHEMATICAL BEHAVIOR OF RANDOM SCALE-INVARIANT NETWORKS

Saturday, August 4, 9:30 am – 10:20 am

Regency Ballroom, The Fairmont San Jose

This lecture will be devoted to a mathematical analysis of some of the standard models of random scale-invariant networks, including models of the Internet, the World Wide Web, and social networks. I will show how these models can be rewritten in terms of a Polya urn representation, which will allow us to prove that the models exhibit some of the observed properties of real-world networks, including scale-invariance and vulnerability to attacks by viruses. Using these models, I will also examine various strategies for containment of viruses and epidemics in technological and social networks.

LECTURE 3: CONVERGENT SEQUENCES OF NETWORKS

Sunday, August 5, 9:30 am – 10:20 am

Regency Ballroom, The Fairmont San Jose

In the final lecture of this series, I will abstract some of the lessons of the previous lectures. Inspired by dynamically growing networks, I will ask how we can characterize general sequences of graphs in which the number of nodes grows without bound. In particular, I will define various natural notions of convergence for a sequence of graphs and show that, in the case of dense graphs, many of these notions are equivalent. I will also give a construction for a function representing the limit of a sequence of graphs. I'll review examples of some simple growing network models and illustrate the corresponding limit functions.

JOINT MAA-SMB INVITED ADDRESS ON THE DYNAMICS AND EVOLUTION OF EMERGENT AND RE-EMERGENT DISEASES: FROM TUBERCULOSIS TO SARS TO THE FLU

Carlos Castillo-Chavez, Arizona State University

Friday, August 3, 8:30 am – 9:20 am

Regency Ballroom, The Fairmont San Jose

The role of mass transportation, immigration, tourism, demographic growth, and bioterrorism are but some of the engines behind disease dynamics and disease evolution. Examples using recent epidemic outbreaks will be used to highlight the role of mathematics in the evaluation of the impact of these epidemic drivers. Mathematics will also be used to highlight the relevance of “borderless” health policy perspectives.

MAA INVITED ADDRESS MANAGING NATURAL RESOURCES: MATHEMATICS MEETS POLITICS, GREED, AND THE ARMY CORPS OF ENGINEERS

Louis J. Gross, University of Tennessee

Friday, August 3, 9:30 am – 10:20 am

Regency Ballroom, The Fairmont San Jose

The availability of satellite-based remote sensing, computers capable of handling large databases, rapid communication networks, and small radio sensors able to transmit details on individual animals has fostered the development of computational ecology. By combining mathematical and computer models of natural systems with geographically explicit details of the biotic and abiotic components of the environment, we can compare alternative virtual futures to better plan sustainable ecosystems. Opportunities exist for mathematicians to develop and apply models for harvest regulation, control of invasive species, fire management, and disease and pest control. This optimistic view of the potential for computational methodologies to aid in managing natural systems is tempered by the reality that factors other than scientific best practices are involved. I will discuss a range of applications from relatively simple models for invasive plant control to models applied to long-term planning of an immense restoration effort in the Everglades of South Florida.

MAA STUDENT LECTURE

SPLITTING THE RENT: FAIRNESS PROBLEMS, FIXED POINTS, AND FRAGMENTED POLYTOPES

Francis Edward Su, Harvey Mudd College

Friday, August 3, 1:00 pm – 1:50 pm

Regency 1, The Fairmont San Jose

“How do you divide the rent among roommates fairly?” My friend’s dilemma was a question that mathematics could answer, both elegantly and constructively. We show how it and other fair division questions — the most famous of which is the problem of Steinhaus: how do you cut a cake fairly? — motivate a host of combinatorial fixed point theorems and problems about polytopes. They provide excellent examples of how mathematics can address an old class of problems in new ways and, conversely, how problems in the social sciences can motivate new mathematics—where topology, geometry, and combinatorics meet social applications and where research by undergraduates has played a big role.

MAA INVITED ADDRESS

REVENGE OF THE TWIN PRIME CONJECTURE

Daniel Goldston, San Jose State University

Saturday, August 4, 8:30 am – 9:20 am

Regency Ballroom, The Fairmont San Jose

Two years ago Janos Pintz, Cem Yildirim, and I proved that there always exist primes that are very close together — very close meaning much closer than the average distance between neighboring primes. Our method also proves that if the primes are well distributed in arithmetic progressions, then one can obtain results not too far from the twin prime conjecture. For example, if the Elliott-Halberstam conjecture is true then there are infinitely many pairs of primes with difference 16 or less. With these successes, I was hopeful that before too long our method could be pushed to unconditionally show that there are infinitely often pairs of primes closer than some fixed bounded distance, that is, bounded gaps, a giant step towards the twin prime conjecture. In this talk I will discuss the method and why perhaps further progress towards bounded gaps and the twin prime conjecture may be difficult, although I will be delighted to be proved wrong.

JAMES R. LEITZEL LECTURE

ON BEING A MATHEMATICAL CITIZEN: THE NATURAL NExT STEP

Lynn A. Steen, St. Olaf College

Saturday, August 4, 10:30 am – 11:20 am

Regency Ballroom, The Fairmont San Jose

As public concerns about education and competitiveness evolve, so, too, must the responsibilities of collegiate mathematicians, including especially the participants and alumni of Project NExT. No longer can we afford to focus only on our students, our department, our college, or our research. Mathematics at all levels and of all kinds is at the center of major challenges to the nation’s education and economy. These issues challenge us all to be good mathematical citizens in this evolving national landscape.

NAM DAVID BLACKWELL LECTURE

PUZZLING PROBABILITIES FEATURING THE STREET GAME OF CRAPS

Jack Alexander, Miami Dade College

Saturday, August 4, 1:00 pm – 1:50 pm

Regency 1, The Fairmont San Jose

The study of probability has, for some time now, been quite intriguing to me. Part of this fascination is fueled by the fact that some probability challenges require strategies that employ various aspects of mathematics to obtain a solution. This presentation uses calculus, algebra, geometry, and graphing, as well as probability theory. To illustrate this contention, this presentation will give analytic solutions and computer simulations for three probability problems that I find quite interesting. These problems are: Count Buffon’s Needle Problem; The Triangle from a Line Segment Problem; and The Street Game of Craps. The Street Game of Craps was detailed in a problem from a book entitled Introduction to the Theory of Statistics, 3rd Edition, 1963. This text was written by Alexander M. Mood, Franklin A. Graybill, and Duane C. Boes. It was edited by David Blackwell and Herbert Solomon. The book was part of a series of probability and statistics texts published by McGraw-Hill.

PME J. SUTHERLAND FRAME LECTURE

NEGAFIBONACCI NUMBERS AND THE HYPERBOLIC PLANE

Donald E. Knuth, Stanford University

Saturday, August 4, 8:00 pm – 8:50 pm

Regency Ballroom, The Fairmont San Jose

All integers can be represented uniquely as a sum of zero or more “negative” Fibonacci numbers $F_{-1} = 1$, $F_{-2} = -1$, $F_{-3} = 2$, $F_{-4} = -3$, provided that no two consecutive elements of this infinite sequence are used. The NegaFibonacci representation leads to an interesting coordinate system for a classic infinite tiling of the hyperbolic plane by triangles, where each triangle has one 90° angle, one 45° angle, and one 36° angle.

AWM-MAA ETTA Z. FALCONER LECTURE

COMPARING EVOLUTIONARY TREES

Katherine St John, City College of New York

Sunday, August 5, 8:30 am – 9:20 am

Regency Ballroom, The Fairmont San Jose

Evolutionary histories, or phylogenies, form an integral part of much work in biology. In addition to the intrinsic interest in the interrelationships between species, phylogenies are used for drug design, multiple sequence alignment, and even as evidence in a recent criminal trial. A simple representation for a phylogeny is a rooted, binary tree, where the leaves represent the species, and internal nodes represent their hypothetical ancestors. This talk will focus on some of the elegant, combinatorial questions that arise from assembling, summarizing, and visualizing phylogenetic trees

Join us at the...

Exhibit Hall Friday, August 3
Reception 3:00 pm - 4:00 pm
Imperial Ballroom
The Fairmont San Jose



Join us on a
**MathFest Scavenger
Hunt**

win great prizes!

- Book Collection
- AMEX Gift Card
- TI-89 Titanium
- Fractal T-Shirts
- San Jose Gift Basket
- FireLITE Portable
 - Hard Drive
- Sketchpad Software

and much more!
The Grand Prize will be
announced on site.

MAA INVITED ADDRESS

**WHY DID LAGRANGE "PROVE"
THE PARALLEL POSTULATE?**

Judith V. Grabiner, Pitzer College
Sunday, August 5, 10:30 am – 11:20 am
Regency Ballroom, The Fairmont San Jose

In 1806, Joseph-Louis Lagrange began to read a memoir "proving" Euclid's parallel postulate to the Académie des Sciences in Paris, but stopped, saying, as the story goes, "I have to think about this some more." We'll look at Lagrange's (still unpublished) Paris manuscript on this subject and place this activity in the context of his mathematical career. We'll also look at how the ideas in this manuscript are related to Lagrange's philosophy of mathematics, Newtonian mechanics, and Leibniz's Principle of Sufficient Reason. Finally, we'll reflect on what this episode tells us about eighteenth-century attitudes toward geometry and space.

EULER IN THREE ACTS

William Dunham, Muhlenberg College
Sunday, August 5, 1:00 pm - 1:50 pm
Regency 1, The Fairmont San Jose

In this talk, we recognize Euler's tercentenary with a three-part examination of his remarkable output. Act I provides an overview of his work to suggest the depth and diversity of his life's achievement. Act II considers the 1737 derivation of the "Euler product-sum formula" and its use in proving the divergence of the reciprocals of the primes – arguably the birth of analytic number theory. Finally, in Act III we see Euler's evaluation of a non-trivial integral in which he cleverly enlisted the aid of two illustrious predecessors. Taken together, these results indicate why Euler's 300th birthday is so worthy of a mathematical celebration.

Invited Paper Sessions

MANIFOLDS WITH DENSITY AND PARTITIONING PROBLEMS

Frank Morgan, Williams College
Friday, August 3, 1:00 pm – 4:00 pm
Gold Room, The Fairmont San Jose

Perelman's stunning 2006 proof of the million-dollar Poincaré Conjecture needed to consider not just manifolds but "manifolds with density" (like the density in physics you integrate to compute mass). Yet much of the basic geometry of such spaces remains unexplored. Partitioning problems provide a good place to start.

MATHEMATICAL QUESTIONS IN BIOINFORMATICS

Jennifer Galovich, St. John's University
Laurie Heyer, Davidson College
Friday, August 3, 1:00 pm – 4:00 pm
Regency 2, The Fairmont San Jose

Sponsored by the MAA SIGMAA on Mathematical and Computational Biology.

GEMS IN APPLIED MATHEMATICS

Kay Somers, Moravian College
Saturday, August 4, 8:30 am – 10:30 am
Gold Room, The Fairmont San Jose

RESEARCH WITH UNDERGRADUATES

Mario Martelli, Claremont McKenna College
Saturday, August 4, 1:00 pm – 3:30 pm
Regency 2, The Fairmont San Jose

The speakers will present research in Mathematics completed in collaboration with undergraduates and, possibly, submitted for publication to a professional journal. In some cases, the articles may have already been accepted. Each speaker will describe in detail how the research was done and will highlight the undergraduates' participation.

PRIME NUMBERS – NEW DEVELOPMENTS ON ANCIENT PROBLEMS

Dan Goldston, San Jose State University
Carl Pomerance, Dartmouth College
Saturday, August 4, 1:00 pm – 4:00 pm
Gold Room, The Fairmont San Jose

GRAPH THEORY IDEAS FOR UNDERGRADUATE RESEARCH

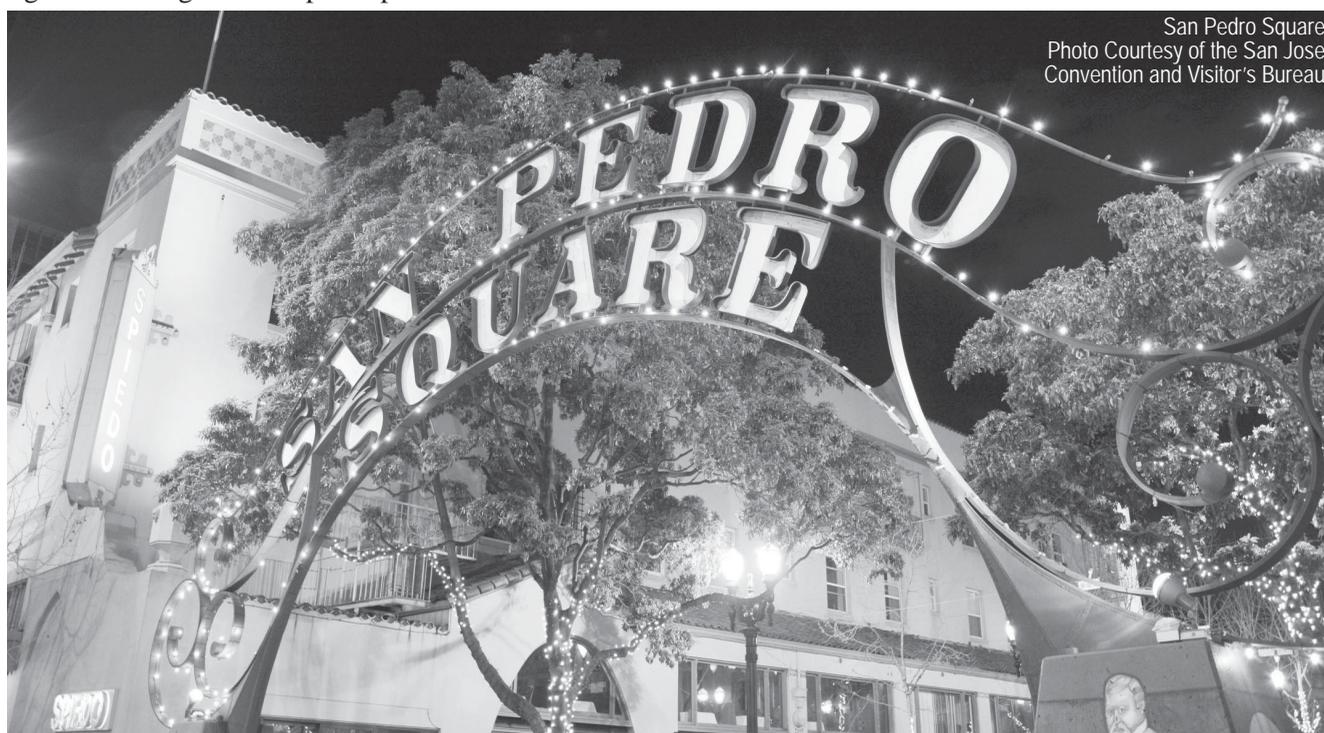
Aparna Higgins, University of Dayton
Sunday, August 5, 1:00 pm – 4:00 pm
Crystal Room, The Fairmont San Jose

This session will highlight some topics in graph theory that are intriguing to undergraduate researchers. The speakers have successfully guided undergraduate students in research by directing undergraduate research in intensive summer experiences or in undergraduate thesis activities. The session will provide insight into what makes a topic in graph theory suitable for investigations by undergraduates and will provide additional avenues of research.

EULER SOCIETY

Robert Bradley, Adelphi University
Edward Sandifer, Western Connecticut State University

Friday, August 3, 8:30 am – 10:30 am
Atherton Room, The Fairmont San Jose
Friday, August 3, 1:00 pm – 6:00 pm
Atherton Room, The Fairmont San Jose
Saturday, August 4, 8:30 am – 11:30 am
Atherton Room, The Fairmont San Jose
Sunday, August 5, 8:30 am – 10:30 am
Atherton Room, The Fairmont San Jose



San Pedro Square
Photo Courtesy of the San Jose
Convention and Visitor's Bureau

Contributed Paper Sessions

ATTRACTING AND RETAINING STUDENTS TO MATHEMATICS PROGRAMS VIA OUTREACH

Sangeeta Gad, University of Houston-Downtown
Friday, August 3, 8:30 am – 10:30 am
Sacramento Room, The Fairmont San Jose

MATHEMATICS OF SPORTS AND GAMES

Howard Lewis Penn, United States Naval Academy
E. Lee May, Salisbury University
Friday, August 3, 8:30 am – 10:30 am
Hillsborough Room, The Fairmont San Jose

EMERGING TECHNOLOGIES FOR MATHEMATICS TEACHING

Lila F. Roberts, Georgia College & State University
Amy F. Kelley, Georgia College & State University
Friday, August 3, 1:00 pm – 3:00 pm
Sacramento Room, The Fairmont San Jose

CURRENT ISSUES IN MATHEMATICS EDUCATION

Carol Vobach, University of Houston-Downtown
Nancy Leveille, University of Houston-Downtown
Friday, August 3, 1:00 pm – 5:30 pm
Hillsborough Room, The Fairmont San Jose

INNOVATIVE IDEAS FOR TEACHING CONCEPTS IN AN INTRODUCTORY STATISTICS COURSE

Murray H. Siegel, South Carolina Governor's School for Science & Mathematics,
Hartsville, South Carolina
Friday, August 3, 3:15 pm – 6:15 pm
Sacramento Room, The Fairmont San Jose
Sunday, August 5, 1:00 pm – 3:00 pm
Piedmont Room, The Fairmont San Jose

BIOMATHEMATICS IN THE FIRST TWO YEARS

Timothy D. Comar, Benedictine University
Saturday, August 4, 8:30 am – 10:30 am
Sacramento Room, The Fairmont San Jose
Saturday, August 4, 1:00 pm – 3:00 pm
Valley Room, The Fairmont San Jose
Sunday, August 5, 8:30 am – 10:30 am
Belvedere Room, The Fairmont San Jose

GRAPH THEORY AND APPLICATIONS

Ralucca Michelle Gera, Naval Postgraduate School
Richard M. Low, San Jose State University
Saturday, August 4, 8:30 am – 10:30 am
Hillsborough Room, The Fairmont San Jose
Sunday, August 5, 1:00 pm – 3:00 pm
Fairfield Room, The Fairmont San Jose

GETTING STUDENTS TO DISCUSS AND TO WRITE ABOUT MATHEMATICS

Murphy Waggoner, Simpson College
Saturday, August 4, 1:00 pm – 5:15 pm
Sacramento Room, The Fairmont San Jose

MATHEMATICS AND THE ARTS

Douglas E. Norton, Villanova University
Saturday, August 4, 1:00 pm – 3:00 pm
Hillsborough Room, The Fairmont San Jose

Sunday, August 5, 1:00 pm – 3:00 pm
Belvedere Room, The Fairmont San Jose

FUN AND INNOVATIVE TEACHING TECHNIQUES FOR AN ABSTRACT ALGEBRA CLASS

Sharon Clarke, Pepperdine University
Andrew Hetzel, Tennessee Tech University
Saturday, August 4, 3:15 pm – 5:30 pm
Hillsborough Room, The Fairmont San Jose

TEACHING CALCULUS IN HIGH SCHOOL: IDEAS THAT WORK

Dan Teague, North Carolina School of Science and Mathematics
Susan Schwartz Wildstrom,
Walt Whitman High School
Sunday, August 5, 8:30 am – 10:30 am
Sacramento Room, The Fairmont San Jose

STUDENT RESEARCH IN INDUSTRIAL MATHEMATICS

Bem Cayco, San Jose State University
Tim Hsu, San Jose State University
Sunday, August 5, 8:30 am – 11:15 am
Cupertino Room, The Fairmont San Jose

CHALLENGES AND SUCCESSFUL STRATEGIES IN TEACHING A NUMERICAL ANALYSIS COURSE

Olga Brezhneva, Miami University, Ohio
Sunday, August 5, 8:30 am – 10:30 am
Fairfield Room, The Fairmont San Jose

TEACHING A HISTORY OF MATHEMATICS COURSE

Joel Haack, University of Northern Iowa
Amy Shell-Gellasch, Pacific Lutheran University
Sunday, August 5, 8:30 am – 10:30 am
Hillsborough Room, The Fairmont San Jose
Sunday, August 5, 2:00 pm – 5:00 pm
Hillsborough Room, The Fairmont San Jose

ADVANCES IN RECREATIONAL MATHEMATICS

Paul R. Coe, Dominican University
Kristen Schemmerhorn, Dominican University
Sunday, August 5, 1:00 pm – 3:45 pm
Sacramento Room, The Fairmont San Jose

GENERAL CONTRIBUTED PAPER SESSIONS

Sarah J. Mabrouk, Framingham State College
#1 Friday, Aug. 3, 8:30 - 10:30 am, Valley Room
#2 Friday, August 3, 1:00 - 3:00 pm, Valley Room
#3 Friday, August 3, 3:15 - 5:15 pm, Valley Room
#4 Sunday, August 5, 8:30 - 10:30 am, Valley Room
#5 Sunday, August 5, 8:30 - 10:30 am, Glen Ellen Room
#6 Sunday, August 5, 1:00 - 3:00 pm, Valley Room
#7 Sunday, August 5, 1:00 - 3:00 pm, Glen Ellen Room
#8 Sunday, August 5, 1:00 - 3:00 pm, Belvedere Room
#9 Sunday, August 5, 3:15 - 5:15 pm, Valley Room
#10 Sunday, August 5, 3:15 - 5:15 pm, Glen Ellen Room
#11 Sunday, August 5, 3:15 - 5:15 pm, Piedmont Room

Panels and Other Sessions

PUBLIC INTERVIEW WITH THE APPLES IN STEREO'S ROBERT SCHNEIDER

Thursday, August 2, 6:00-6:45

Club Regent, The Fairmont San Jose

Robert Schneider, the singer, songwriter and producer for The Apples in Stereo, cites musical influences from the Beach Boys to the Velvet Underground, which comes through on their latest CD, "New Magnetic Wonder." But Robert's love of music is superseded by his love of mathematics. MAA President Joe Gallian will conduct this public interview. Come learn how Robert's interest in mathematics was sparked, and how it has led him to develop new music based on a logarithmic musical scale as well as some very interesting results related to the prime number theorem. Notice of special event: Robert Schneider will perform a few of his songs at the Social at 9:00 Saturday night following the Frame lecture.

WHAT THEY THINK IS GOOD TEACHING

Frank Morgan, Williams College

Diana Davis, Williams College

Friday, August 3, 9:00 am – 10:20 am

Crystal Room, The Fairmont San Jose

A panel of undergraduates talk about what makes for good teaching. The session will be moderated by Frank Morgan and is sponsored by the Committee on the Undergraduate Program in Mathematics.

MATHEMATICS OUTREACH FOR UNDERREPRESENTED GROUPS

Elizabeth (Betsy) Yanik, Emporia State University

Friday, August 3, 9:00 am – 10:20 am

Gold Room, The Fairmont San Jose

This forum will focus on specific outreach programs that have been successful in encouraging students from underrepresented groups to continue studying mathematics. The programs provide students with role models from numerous, exciting careers that are mathematically based. Various program formats will be presented (e.g., after school clubs, one-day conferences, summer camps, etc.). The session is sponsored by the Committee on the Participation of Women.

QUANTITATIVE LITERACY, MATHEMATICS, AND CIVIC ENGAGEMENT: TEACHING THE IMPORTANCE OF QUANTITATIVE LITERACY FOR A HEALTHY DEMOCRACY

Robert G. Root, Lafayette College

Kira Hamman, Hood College

Maura B. Mast, University of Massachusetts Boston

Friday, August 3, 9:00 am – 10:20 am

Club Regent, The Fairmont San Jose

This panel session will consist of presentations on pedagogy associated with courses investigating the interaction between quantitative literacy/mathematics and civic engagement. Potential topics include voting rights, voting fraud, gerrymandering, and one person/one vote; the impact of opinion polls on the democratic process; financial exploita-

tion of the quantitatively illiterate; statistical misconceptions and their consequences in politics and policy; mathematics education as a determinant of economic status; and statistics and health policy. Panelists will be encouraged to share with the interested public curricular materials for units in a general education course linking mathematics to social justice, including reading lists, study guides, discussion guidelines, and assignments. The session is sponsored by the SIGMAA on Quantitative Literacy.

CALCULUS IN HIGH SCHOOL: WHAT IS HAPPENING? WHAT DO WE NEED TO KNOW?

David Bressoud, Macalester College

Dan Teague, North Carolina School of Science and Mathematics

Friday, August 3, 1:00 pm – 2:20 pm

Club Regent, The Fairmont San Jose

New data is in on dual-enrollment programs in calculus, on relative numbers of students taking calculus in high school versus college, on the number of students taking calculus before their senior year of high school, and on what mathematics they take in their remaining time in high school. This panel will present what we know and solicit suggestions for what we need to know and how we can learn it if we are to meet the challenges of the movement of calculus instruction into the high school curriculum. Panelists will include David Bressoud, Macalester College; David Lutzer, College of William & Mary; Dan Teague, North Carolina School of Science and Mathematics; and Ann Watkins, California State University Northridge. The session is sponsored by the SIGMAA on Teaching Advanced High School Mathematics.

MAA-SUMMA: NATIONAL RESEARCH EXPERIENCES FOR UNDERGRADUATES PROGRAM

William Hawkins, MAA and

the University of the District of Columbia

Robert Megginson, University of Michigan

Friday, August 3, 1:00 pm – 2:20 pm

Empire Room, The Fairmont San Jose

The MAA has supported small research teams of a faculty member and four minority undergraduates at 33 sites since summer 2004 with funds from NSF, NSA, and The Moody's Foundation. Site directors will give presentations about their projects and their students' research. There will be ample time for discussion and questions. More information about the MAA National Research Experiences for Undergraduates Program (NREUP) can be found at <http://www.maa.org/nreup>. Sponsored by the CMPM (Committee on Minority Participation) and MAA-SUMMA (Strengthening Underrepresented Minority Mathematics Achievement).

MAA SECTION OFFICERS MEETING

Friday, August 3, 2:30 pm – 5:00 pm

Crystal Room, The Fairmont San Jose

This session will be moderated by Nancy L. Hagelgans, Ursinus College, chair of the MAA Committee on Sections.

**BROOKS COLE
B&W FULL
PAGE AD**

BEYOND EMAIL: USING WEB-BASED TOOLS FOR COLLABORATIVE WORK

Magnhild Lien,
California State University Northridge
Michael Pearson,
Director of Programs and Services, MAA
Ivars Peterson, Director of Publications for Journals and Communications, MAA
Friday, August 3, 2:30 pm – 3:50 pm
Club Regent, The Fairmont San Jose

Ten years ago, simply having a Web page with links to some print materials and perhaps homework assignments for your classes was cutting edge. The times, they are a-changing. New tools such as wikis and Web-based document-sharing services allow multiple contributors to not only view but participate in the construction of Web sites, proposals, class projects, etc. Using such tools requires that we rethink our work habits and develop appropriate protocols and etiquette that foster productive collaboration. This session will encourage the audience to participate in an examination of some successful and perhaps some not-so-successful, efforts, and to help envision possible strategies for improvement. Panelists will include Mike May, St. Louis University, and Ramit Sethi, cofounder and VP of Marketing for PBwiki. This session is sponsored by the MAA Committee on Professional Development.

FLATLAND: THE MOVIE

Thomas Banchoff, Brown University
Friday, August 3, 4:00 pm – 5:00 pm
Regency 1, The Fairmont San Jose

Flatland: The Movie is a half-hour animated film produced in 2007. It was inspired by Edwin A. Abbott's classic novel, *Flatland: A Romance of Many Dimensions*. Set in a world of only two dimensions inhabited by sentient geometrical shapes, the story follows Arthur Square and his ever-curious granddaughter Hex. When a mysterious visitor arrives from Spaceland, Arthur and Hex must come to terms with the truth of the third dimension, risking dire consequences from the evil Circles that have ruled Flatland for a thousand years. A discussion will follow concerning the movie's use in classroom teaching.

HOW TO APPLY FOR JOBS

David Manderscheid, University of Iowa
Saturday, August 4, 9:00 am – 10:20 am
Valley Room, The Fairmont San Jose

This session is aimed at Ph.D. students and recent Ph.D.s. An overview of the employment process will be given with ample opportunity for participants to ask questions. Questions that will be addressed include: How do you find the jobs that are available? How do you choose the jobs for which you want to apply? What are academic and other employers looking for in the materials that you send? What should you be doing now? How do schools conduct interviews? How can you best prepare for these interviews? How do employers choose to whom they will make offers? How do you negotiate once you have an offer? Panelists will include Sha-

ron Clarke, Pepperdine University; James Freeman, Cornell College; David Manderscheid, University of Iowa; Joanne Peeples, El Paso Community College; and Sarah Ann Stewart, Belmont University. The session is sponsored by the MAA Committee on Graduate Students and is cosponsored by The Young Mathematicians' Network.

STARTING AND MAINTAINING A STUDENT INDUSTRIAL RESEARCH PROGRAM IN THE MATHEMATICAL SCIENCES

Maria Cayco, San Jose State University
Tim Hsu, San Jose State University
Saturday, August 4, 9:00 am – 10:20 am
Club Regent, The Fairmont San Jose

In recent years, several colleges and universities have started programs to give students the opportunity to do research on problems in the mathematical sciences coming from industry, government agencies, and businesses. In these programs, students see how the mathematics they learn in the classroom can make a difference in the real world. Also, by getting real-world experience, learning practical job skills, and working in teams, students gain an edge in finding good jobs after they graduate. In this panel discussion, directors of mathematical student industrial research programs from a variety of institutions (public, private, small, and large) will talk about their experiences in starting and maintaining their programs. We hope that neophytes will become interested in starting a program at their institutions; that people who are about to start a program will pick up concrete pointers; and that current program directors will gain valuable know-how and contacts. Panelists will include Robert Borrelli, Harvey Mudd College; Tim Hsu, San Jose State University; Michael Moody, Olin College of Engineering; Michael O'Leary, Towson University; and Michael Raugh, The Research in Industrial Projects (RIPS) Program at the Institute for Pure and Applied Mathematics, UCLA.

MAA PRIZE SESSION

Saturday, August 4, 11:30 am – Noon
Regency Ballroom, The Fairmont San Jose

This session will be moderated by Martha J. Siegel, Towson University, MAA secretary.

THE DEPARTMENT SELF-STUDY: HOW TO ENSURE THAT IT IS PURPOSEFUL

Donna Beers, Simmons College
Kyle Riley, South Dakota School of Mines and Technology

Saturday, August 4, 1:00 pm – 2:20 pm
Crystal Room, The Fairmont San Jose

Self-study is a process that accompanies and is central to the departmental cycle of program review. It is used by central administration to help it analyze the role of the department within the institution; assess the content and quality of departmental programs, pedagogy, scholarship, and service; analyze potential curricular development and new opportunities for growth and contribution; and ensure academic excellence. For departments, common stumbling blocks to

undertaking self-study include time constraints; the feeling that nothing will come of it; fear of assessment; inertia; and difficulties in accessing needed data. In this panel, we consider how a department can turn an administrative mandate into an opportunity for renewal. Panelists include leaders of two recent PREP workshops on self-study and outside consultants, plus participants in those workshops who will share their perspectives. Panelists include Donna Beers, Simmons College; Kyle Riley, South Dakota School of Mines and Technology; Tommy Ratliff, Wheaton College; and Klay Kruczek, Western Oregon University. The session is sponsored by the MAA Professional Enhancement Program (PREP)

WORKSHOP ON ESSENTIAL REASONING ABILITIES AND CONCEPTUAL FOUNDATIONS FOR BEGINNING CALCULUS

Marilyn Carlson, Arizona State University

**Session 1: Saturday, August 4, 1:00 pm – 2:30 pm
Empire Room, The Fairmont San Jose**

Participants will discuss videos of students completing tasks from the Precalculus Assessment Instrument that assess their understandings of function concepts that are essential for successful completion of first semester calculus. Focused discussions of select research data will reveal these foundational understandings and reasoning abilities. The modules will be shared with workshop participants. The workshop is sponsored by the SIGMAA on Research in Undergraduate Mathematics Education.

MAA ALDER AWARDS SESSION

**Saturday, August 4, 2:00 pm – 3:30 pm
Regency 1, The Fairmont San Jose**

The session will be moderated by Joseph Gallian, University of Minnesota at Duluth, MAA President. Presentations will be given by the 2007 Alder Award recipients:

Darren Narayan of Rochester Institute of Technology

Motivating Student Learning through Real World Applications of Higher Mathematics.

A good teacher inspires and motivates students to tap into the tremendous energy that can be derived from learning and doing mathematics, as well as prepare them for the world that will enter after graduation. Students perk up when they can apply the mathematics that they have learned. Traditional curricula seldom offer students concrete examples of cutting-edge, real world applications of higher mathematics. As a result students finish their undergraduate mathematics career asking themselves the question, “What else can I do with a mathematics degree besides teach?” To address this need, we launched the STEM Real World Applications Modules Project funded by an NSF-CCLI grant. Topics included in this project include applications of graph theory to reconstruction of three-dimensional images (Microsoft Research), analysis of flight route maps for airlines (JetBlue Airways), mathematical analysis of telecommunication networks (Lev-

el 3 Communications), and identification of WWW cyber communities (Google). The goal of the STEM Real World Applications Modules Project is to better prepare faculty to answer the question, “What else can mathematics graduates do besides teach?” A student completing these modules will already know.

Timothy P. Chartier of Davidson College
Engaging Students Mathematically - Pitch by Pitch

Pitching can play an important role in engaging students—pitching ideas, that is. This talk will reflect on my experiences (both successful and challenging) in presenting students with ideas that engage them in and out of the classroom. We will discuss student work that includes scholarly research, expository writing and service to the community.

Satyan L. Devadoss of Williams College
Reclaiming Da Vinci: Visualization and Mathematics

The Renaissance exemplified a natural unity of the sciences and the arts. Leonardo da Vinci epitomized this unity in his paintings, sculptures, inventions, and scientific study, bringing together artistic creativity and systematic rigor. For me, his mindset has been a driving force, motivating and directing my own work. This talk portrays my struggles and successes in visualization, most notably in designing new courses and fostering undergraduate research. The topics range from particle collisions and polyhedra in mathematics, to origami design and cartography in computer science, to manufacturing and modeling in studio art.

CURRICULUM DEVELOPMENT AND RESEARCH BY UNDERGRADUATES IN MATHEMATICAL BIOLOGY

Jason Miller, Truman State University
K. Renee Fister, Murray State University
**Saturday, August 4, 2:30 pm – 3:50 pm
Crystal Room, The Fairmont San Jose**

Information technology is revolutionizing the way life scientists choose questions to tackle and the way they seek answers. This so-called “New Biology,” which relies on mathematical tools and ways of thinking, now drives economic sectors of national importance, supports important governmental agencies, and is responsible for many important medical advances. As a result, there are pressures on the mathematical community to prepare today’s students to contribute to this interdisciplinary, team-oriented workforce. This panel will discuss this issue and how curricular change and undergraduate research are being used to meet this national need. The panelists will include Amitahba Bose, New Jersey Institute of Technology; Meghan Burke, Kennesaw State University; Vincent Cassone, Texas A&M University; Eric Marland, Appalachian State University; John Milton, Claremont Colleges; and Lori Stevens, University of Vermont. The session is sponsored by the SIGMAA on Mathematical and Computational Biology.

LEARNING TO PROVE: STRATEGIES TO IMPROVE STUDENTS' PROOF-WRITING SKILLS

Cheryl Olsen, Shippensburg University
Saturday, August 4, 2:30 pm – 4:30 pm
Club Regent, The Fairmont San Jose

This session will focus on what works. There will be brief descriptions from several presenters, and then participants will choose from several small group discussions. The topics addressed will include Outlining the proof. The genre of proof. getting students to use definitions; and assessment of proofs, including the use of multiple drafts and peer review. The session is sponsored by the MAA Committee on the Teaching of Undergraduate Mathematics.

ADMINISTERING THE AMERICAN MATHEMATICS COMPETITION AT A COLLEGE OR UNIVERSITY

Steve Dunbar, MAA American Mathematics Competitions
Saturday, August 4, 3:15 pm – 4:35 pm
Empire Room, The Fairmont San Jose

Panelists will describe their experiences administering the American Mathematics Competitions on their campus, what the competitions did for the students, and what worked well, as well as obstacles and problems encountered. Panelists will include Dan Geba, University of Rochester, and Daniel Kemp, South Dakota State University. The session is sponsored by the MAA Committee on the American Mathematics Competitions.

MAA VIDEO SESSION

“Porridge, Pulleys, and Pi / Two Mathematical Journeys”
Peter Ross, Santa Clara University

Saturday, August 4, 3:30 pm – 4:00 pm
Saturday, August 5, 5:00 pm – 5:30 pm
Valley Room, The Fairmont San Jose

This half-hour MSRI video was produced in 2004 by director George Csicsery and shows Hendrik Lenstra and Vaughan Jones of University of California at Berkeley at work and play and with their families. It gives an excellent view of these two well-known but very different mathematicians and their lives and work.

Saturday, August 4, 4:10 pm – 4:50 pm
Valley Room, The Fairmont San Jose
“Infinite Acres” and “The Theorem of Pythagoras”

The first of these two videos is a cartoon illustrating properties of improper integrals. It is followed by Tom Apostol's video which shows several engaging animated proofs of the theorem, along with some extensions to three dimensions.

THE SAN FRANCISCO BAY AREA MATH CIRCLES A DECADE LATER

Hugo Rossi, University of Utah
Saturday, August 4, 3:40 pm – 5:00 pm
Regency 2, The Fairmont San Jose

In 1997-1998, the Math Circles for middle and high school students in Berkeley and San Jose were started; another was started in Palo Alto a few years later, and two years ago, another in San Francisco, this one toward middle and high school teachers as well as students. Last summer, the American Institute of Mathematics in Palo Alto hosted an initial phase of a math circle for middle school teachers. All these circles are doing well, as are some 20 or so nationwide. The main themes to be discussed by the panel are: recruitment and training of Math Circle Instructors, and finding suitable math circle materials and resources for new Math Circle instructors. The Mathematical Sciences Research Institute has created a “set-up” kit, Circle-in-a-box, including collected notes and sample sessions, both in text and video. These will be available at the session. The panelists for this session will be Gerald Alexanderson, Santa Clara University; Joe Gallian, University of Minnesota Duluth; Steven Krantz, Washington University in St. Louis and ARCC, Palo Alto; Harold Reiter, University of North Carolina, Charlotte; Hugo Rossi, University of Utah (moderator); Mark Saul, Bronxville Schools; Tatiana Shubin, San Jose State University; Zvezdelina Stankova, Mills College; and Paul Zeitz, University of San Francisco.

THE PSYCHOLOGY OF THE MATHEMATICIAN

Steve Krantz, Washington University
Saturday, August 4, 3:40 pm – 5:00 pm
Regency 1, The Fairmont San Jose

The mathematician is something of an anomaly among modern professionals. We spend our lives thinking about problems that we cannot solve. As a result, we perhaps develop some eccentricities and some habits and features that are particular to the profession. These observations affect the way that we perceive ourselves and the way that others perceive us. The purpose of this panel is to discuss the place of the mathematician in society and the role that we play. Panelists will include Frank Morgan, Williams College; Rob Kirby, University of California at Berkeley; Jim Milgram, Stanford; Bill McCallum, University of Arizona; and Pete Casazza, University of Missouri.

MATH CIRCLES

Tom Davis, Silicon Graphics
Tatiana Shubin, San Jose State University
Joshua Zucker, Castilleja School.
Sunday, August 5, 9:00 a.m. – 11:00 a.m.
Fairfield Room, The Fairmont San Jose

Our mathematical circles are modeled after those in Eastern Europe and are as successful here as they were there. Circles bring mathematicians into direct contact with middle or high school students who work together on problems that require deep thinking rather than rote solutions. Circles give students who enjoy studying mathematics a social context for doing so. This demonstration will be an actual math circle run by Tom Davis and Josh Zucker.

MAA BUSINESS MEETING

Sunday, August 5, 11:30 am – Noon
Regency Ballroom, The Fairmont San Jose

DEVELOPING CONTENT-BASED MASTERS PROGRAMS FOR IN-SERVICE MATHEMATICS TEACHERS

Karen Marrongelle, Portland State University
Marjorie Enneking, Portland State University
Sunday, August 5, 1:00 pm – 2:20 pm
Gold Room, The Fairmont San Jose

The CBMS report *The Mathematical Education of Teachers*, the national No Child Left Behind act, and results of national and international mathematics assessment have promoted increased attention to ongoing content development of secondary mathematics teachers. This session will highlight a spectrum of content-based masters programs for in-service secondary and community college mathematics teachers. Panelists will describe features and characteristics of their programs, specifically highlighting the role of mathematics content courses in the degree program. Panelist presentations will be followed by questions and comments from the audience. Panelists include Steve Benson, University of New Hampshire, Trisha Bergthold, San Jose State University, Karen Marrongelle, Portland State University, Chris Rasmussen, San Diego State University, and Joe Yanik, Emporia State University. Those who are developing or renewing graduate degree programs for in-service teachers are especially encouraged to attend. The session is cosponsored by the San Jose Program Committee and the SIGMAA on Research in Undergraduate Mathematics Education.

WORKSHOP ON ESSENTIAL REASONING ABILITIES AND CONCEPTUAL FOUNDATIONS FOR BEGINNING CALCULUS

Marilyn Carlson, Arizona State University
Session 2: Sunday, August 4, 1:00 pm – 2:30 pm
Empire Room, The Fairmont San Jose

Participants will discuss four modules that have been developed in a current research project to promote students' understandings of the concepts of function, limit, derivative and accumulation. Participants will examine video data that reveals students' reasoning abilities as they complete the activities in these modules. Data will also be presented to illustrate students' ways of thinking that have emerged by completing these modules. The modules will be shared with workshop participants. The workshop is sponsored by the SIGMAA on Research in Undergraduate Mathematics Education.

WORKSHOP ON SUSTAINING WEBWORK, A WEB BASED INTERACTIVE HOMEWORK SYSTEM

Michael E. Gage, University of Rochester
Arnold K. Pizer, University of Rochester
Vicki Roth, University of Rochester
Sunday, August 5, 1:00 – 4:30 pm
Cupertino Room, The Fairmont San Jose

WeBWorK is a program that allows students to do their mathematical homework interactively over the Web. It is currently being used by over 100 colleges, universities, and high schools in courses such as college algebra, pre-calculus to vector calculus, differential equations, linear algebra, and statistics. WeBWorK can handle most homework problems typically used in such courses and is distributed with an extensive library of problems. There will be an introduction to WeBWorK for those unfamiliar with the system but most of the session will be devoted to “sustainability” issues, (e.g. how do we keep WeBWorK going over the long haul, both as an open-source community and also at the local level). We will address issues such as using WeBWorK for the first time, both from the point of an institution and an individual professor obtaining local and national support, supporting ongoing assessment; and maintaining the National Library of WeBWorK problems. Further information on WeBWorK and this session can be found at <http://www.maa.org/webwork>.

TECHNICALLY SPEAKING: FOSTERING THE COMMUNICATION SKILLS OF MATHEMATICS STUDENTS

Low Ludwig, Denison University
Sunday, August 5, 2:30 pm – 3:50 pm
Gold Room, The Fairmont San Jose

Panelists will describe how they successfully integrated the instruction of communication skills in their mathematics curriculum. Each takes a unique approach: sophomore-level proofs course, junior-level course co-taught with a member of the communication department, and a senior-level capstone course. One of the programs has evolved into an NSF Course Curriculum and Laboratory Improvement (CCLI) project, and another was featured in an issue of FOCUS. Audience members will have the chance to participate in the evaluation of the materials produced for the CCLI grant. The panelists will include John Thompson, University of Pittsburgh, Johnstown; Russ Goodman, Central College; and Jensen Havill, Denison University.

CREATING GEOMETRIC ISLAMIC PATTERNS

B. Lynn Bodner, Monmouth University
Sunday, August 5, 3:30 pm – 5:00 pm
Club Regent, The Fairmont San Jose

This presentation will briefly describe and illustrate the main characteristics of Islamic art, such as aniconism (except on secular and courtly works of art), Qur'anic calligraphy (considered the highest art form in the Islamic world due to its role in recording the word of God), the tendency to cover entire two-dimensional surfaces with infinitely-repeating elements (usually geometric patterns or vegetal arabesques), and three-dimensional architectural features, such as minarets, pendentives, squinches, muqarnas and ‘fancy’ arches. Next, the historical evidence for the use of various techniques (including grids, zillij, and compass and straightedge procedures) by medieval artisans for generating highly symmetric, infinitely-repeating planar geometric Islamic designs

will be presented. Using each of these methods, (and noting the advantages and limitations of each), we will demonstrate the step-by-step recreation of numerous examples of geometric Islamic patterns found throughout the Islamic world. Lastly, we will show and explain examples of the “nearly perfect, quasi-crystalline” Islamic tilings discussed recently in the February 2007 Science article by Lu and Steinhardt (physicists at Harvard and Princeton Universities, respectively) and previously by Makovicky (University of Copenhagen). The session is sponsored by the MAA SIGMAA on Mathematics and the Arts.

Need a Lunch Break?

Visit the Exhibit Hall in The Fairmont San Jose Imperial Ballroom for a snack.

Hours

Friday, August 3: 9:00 am – 5:00 pm
Saturday, August 4: 9:00 am – 5:00 pm
Sunday, August 5: 9:00 am – 12:00 pm

A lounge area is available for your extended breaks.



San Jose Downtown
Photo Courtesy of the San Jose
Convention and Visitor's Bureau

STUDENT
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Graduate Student Activities

GRADUATE STUDENT RECEPTION

Friday, August 3, 5:00 pm – 6:00 pm
Regency 2, The Fairmont San Jose

HOW TO APPLY FOR JOBS

David Manderscheid, University of Iowa
Saturday, August 4, 9:00 am – 10:20 am
Valley Room, The Fairmont San Jose

This session is aimed at Ph.D. students and recent Ph.D.s. An overview of the employment process will be given with ample opportunity for participants to ask questions. Questions that will be addressed include: How do you find which jobs are available? How do you choose which jobs you want to apply for? What are academic and other employers looking for in the materials that you send? What should you be doing now? How do schools conduct interviews? How can you best prepare for these interviews? How do employers choose to whom they will make offers? How do you negotiate once you have an offer? Panelists will include: Sharon Clarke, Pepperdine University; James Freeman, Cornell College; and David Manderscheid, University of Iowa. The session is sponsored by the MAA Committee on Graduate Students, cosponsored by The Young Mathematicians' Network.

GRADUATE STUDENT POSTER SESSION

Organized by James Freeman,
Cornell College

Saturday, August 4, 1:00 pm – 3:00 pm
Imperial Ballroom, The Fairmont San Jose

Graduate students are invited by MAA Committee on Graduate Students and The Young Mathematicians' Network to submit abstracts for the session. The poster size will be 48" (length) by 36" (height). Posters and materials for posting pages on the posters will be provided on-site. Some funding to cover transportation costs (up to \$600) for poster authors who are members of the MAA is available. At most, one graduate student will be funded per poster, and funded presenters are expected to take full part in the meeting. Up to three posters will receive an award (\$150) for excellence. Information on submitting abstracts and applying for travel support will be available at www.maa.org/students/grad.html on March 1, 2007. Abstracts submitted by Monday, April 30, will be given precedence in considering applications for travel support. Abstracts must be submitted by Friday, June 15, 2007. Questions on this session can be directed to James Freedman at jfreeman@cornellcollege.edu.



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Undergraduate Student Activities

MAA-PME STUDENT RECEPTION

Thursday, August 2, 5:00 pm – 6:00 pm
California Room, The Fairmont San Jose

STUDENT HOSPITALITY CENTER

Richard and Araceli Neal, American Society for the Communication of Mathematics

Friday, August 3, 9:00 am – 5:00 pm

Saturday, August 4, 9:00 am – 5:00 pm

Sunday, August 5, 9:00 am – 1:00 pm

Imperial Ballroom, The Fairmont San Jose

The Student Hospitality Center (SHC) provides a place for students and other MathFest attendees to meet for informal conversation, refreshments, and mathematical diversions. The SHC also provides programs for the MAA and Pi Mu Epsilon student paper sessions, packets for the MAA student presenters, and information on MathFest activities of interest to students.

MAA LECTURE FOR STUDENTS

SPLITTING THE RENT: FAIRNESS PROBLEMS, FIXED POINTS, AND FRAGMENTED POLYTOPES

Francis Edward Su, Harvey Mudd College

Friday, August 3, 1:00 pm – 1:50 pm

Regency 1, The Fairmont San Jose

(See the Invited Address section for details.)

MATH JEOPARDY

John Harris, Furman University

Mike Berry, University of Tennessee

Mike Mossinghoff, Davidson College

Friday, August 3, 8:00 pm – 9:30 pm

Club Regent, The Fairmont San Jose

Answer: A fun undergraduate mathematics contest to lead off MathFest.

Question: What is Mathematics Jeopardy? Four teams of students will provide the questions to go with the mathematical answers in many categories. Come cheer for your favorite team. The session will be emceed by Mike Berry.

MAA STUDENT PAPER SESSIONS

Edward C. Keppelmann, University of Nevada

J. Lyn Miller, Slippery Rock University

Friday, August 3, 8:30 am – 10:30 am

Friday, August 3, 2:00 pm – 6:15 pm

Saturday, August 4, 8:30 am – 10:30 am

Saturday, August 4, 2:00 pm – 5:00 pm

Glen Ellen and Fairfield Rooms, The Fairmont San Jose and at San Jose State University

PI MU EPSILON STUDENT PAPER SESSIONS

Angela Spalsbury, Youngstown State University

Friday, August 3, 2:00 pm – 6:15 pm

Saturday, August 4, 8:30 am – 10:30 am

Saturday, August 4, 2:00 pm – 5:00 pm

Cupertino and Belvedere Rooms, The Fairmont San Jose and at San Jose State University

MAA UNDERGRADUATE STUDENT ACTIVITIES SESSION ORIGAMI, POLYHEDRA, AND MATHEMATICS

Eve Torrence, Randolph-Macon College

Saturday, August 4, 1:00 pm – 1:50 pm

Club Regent, The Fairmont San Jose

Have you ever wondered how to build beautiful geometric structures with paper? Come learn how to build polyhedra using modular origami. Then we'll use graph theory and combinatorics to explore these structures. Paper will be provided for participants in this hands-on workshop.

PI MU EPSILON STUDENT BANQUET AND AWARDS CEREMONY

Saturday, August 4, 6:00 pm – 7:45 pm

San Jose State University

All PME members and their supporters are welcome. See the registration form for more information on this ticketed event.

PI MU EPSILON J. SUTHERLAND FRAME LECTURE NEGAFIBONACCI NUMBERS AND THE HYPERBOLIC PLANE

Donald E. Knuth, Stanford University

Saturday, August 4, 8:00 pm – 9:00 pm

Regency Ballroom, The Fairmont San Jose

(See the "Invited Address" section for details.)

MAA CELEBRATION: 20 YEARS OF STUDENT PAPERS

Saturday, August 4, 9:00 pm – 10:00 pm

Crystal Room, The Fairmont San Jose

Come celebrate 20 years of undergraduate student talks at the summer meetings with an ice cream social. We will also recognize all students who gave talks in the MAA Student Chapters paper sessions and award prizes for the best of them. All are invited. Robert Schneider of The Apples in Stereo will perform a few of his songs at the Social.

MAA MATHEMATICAL CONTEST IN MODELING (MCM) WINNERS

Ben Fusaro, Florida State University

Sunday, August 5, 9:00 am – 10:30 am

Gold Room, The Fairmont San Jose

About 450 teams, each consisting of three undergraduates, took part in the 2007 MCM in February. The contest consists of two real(istic) scenarios (one discrete, one continuous) that call for analysis and resolution. The teams have four days to deal with the challenge during which time they may use or consult anything inanimate — computers, libraries, the Web, etc. MAA judges choose one continuous and one discrete winner from the top contenders. The MAA subsidizes the teams' travel to MathFest, where they will present the results of their four-day challenge.

STUDENT PROBLEM-SOLVING COMPETITION

Richard Neal, American Society for the Communication of Mathematics

Sunday, August 5, 2:00 pm – 3:15 pm

Club Regent, The Fairmont San Jose

This event is the finals of the Problem-Solving Competition. Universities and colleges that participate monthly on their own campuses by holding problem-solving contests are invited to send a contestant. Each contestant will be required to solve a series of mathematical problems. Based upon the outcome, a champion (along with 2nd-through 6th-place awardees) will be named.

The MAA would like to extend a special thank you to those companies that have so graciously contributed prizes towards the Scavenger Hunt.

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Texas Instruments Incorporated

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San Jose CVB




The Mathematical Association of America
 Author signings at the MAA Publications Booth!

MathFest Daily Planner	Friday August 3, 2007	MathFest Daily Planner	Saturday August 4, 2007
11:30 AM-12:30 PM	Robert Bradley, Lawrence D'Antonio, and Edward Sandifer will sign: Euler at 300: An Appreciation	11:00 AM-12:00 PM	Artist and author John dePillis will sign copies of 777 Mathematical Conversation Starters . He'll also create a caricature of anyone who buys the book!
2:00-3:00 PM	Art Benjamin will share his techniques for lightening-quick calculations and amazing number tricks. He'll sign: The Secrets of Mental Math: The Mathematician's Guide to Lightening Calculation and Amazing Math Tricks.	1:00 PM-2:00 PM	William Dunham will sign: The Genius of Euler & Euler: The Master of Us All
		2:00-3:00 PM	C. Edward Sandifer will sign: How Euler Did It & The Early Mathematics of Leonhard Euler

Minicourses

MINICOURSE #1

A NOVEL APPROACH TO PROBLEM SOLVING IN DISCRETE MATHEMATICS

Andy Liu, University of Alberta

Part 1: Friday, August 3, 1:00 pm – 3:00 pm

Part 2: Saturday, August 4, 1:00 pm – 3:00 pm

California Room, The Fairmont San Jose

At the University of Alberta, we have designed a very successful sophomore course on problem solving in discrete mathematics, using as an innovative text a mathematical novel in which the main character, a mathematical version of Sherlock Holmes, solves important, instructive, and interesting problems for his clients. In this minicourse, we will run a simulated class and examine suitable problems from various sources. We will also provide a brief history and discuss the basic philosophy of our course. There are no prerequisites, and sample notes and problems will be distributed to the participants.

MINICOURSE #2

INFUSING CONNECTIONS INTO CORE COURSES FOR SECONDARY TEACHERS

Steve Benson, Education Development Center

Al Cuoco, Education Development Center

Karen Graham, University of New Hampshire

Neil Portnoy, University of New Hampshire

Part 1: Saturday, August 4, 1:00 pm – 3:00 pm

Part 2: Sunday, August 5, 1:00 pm – 3:00 pm

Garden Room, The Fairmont San Jose

National recommendations call for content courses for prospective teachers that make explicit connections between the mathematics that teachers learn and the mathematics they will use as teachers. Most content courses for preservice secondary teachers are core courses for the mathematics major, and texts for these courses do not typically address these connections. Minicourse participants will work with materials that contain the mathematical rigor of an upper-division course and help prospective teachers build connections to secondary mathematics, discuss implementation issues with colleagues who have used such materials, and begin to adapt these materials for the courses they teach.

MINICOURSE #3

TEACHING A PROOF-BASED COURSE AS THE GATEWAY TO THE MATHEMATICS MAJOR

James Sandefur, Georgetown University

Part 1: Friday, August 3, 3:30 pm – 5:30 pm

Part 2: Sunday, August 5, 1:00 pm – 3:00 pm

California Room, The Fairmont San Jose

Many colleges and universities have a gateway course to help mathematics students make the transition to more theoretical courses, with a goal of helping students learn how to understand and construct proofs. The organizer of this course, guided by five years of videotaping his students doing their homework for a proof-based course, will lead participants in an exploration of effective approaches to teaching “proof.” We will discuss appropriate types of problems, the wording of

problems, effective hints and prompts, and a variety of pedagogical approaches. Suggestions and questions from participants will be encouraged.

MINICOURSE #4

MORE MUSIC AND MATHEMATICS

Leon Harkleroad, Wilton, Maine

Part 1: Friday, August 3, 1:00 pm – 3:00 pm

Part 2: Saturday, August 5, 3:30 pm - 5:30 pm

Garden Room, The Fairmont San Jose

We will offer a selection of various points of intersection between math and music. We will explore subjects such as historical geometric methods to approximate equal tempering in instrument design, group theory in contradancing, and music from space-filling curves and fractals.

MINICOURSE #5

SOME DETERMINISTIC MODELS IN MATHEMATICAL BIOLOGY AND THEIR SIMULATION

James Selgrade, North Carolina State University

Hüseyin Koçak, University of Miami

Part 1: Saturday, August 4, 3:30 pm – 5:30 pm

Part 2: Sunday, August 5, 3:30 pm – 5:30 pm

California Room, The Fairmont San Jose

This minicourse will present and analyze discrete and continuous models from physiology (e.g., the Hodgkin-Huxley model), pharmacokinetics, and population biology (e.g., the chemostat model). The class will be conducted in a computer lab where participants will use the software Phaser to simulate model behavior. Each of the four topics will be discussed for 30 minutes, followed by 30 minutes of computer experimentation. The participants will be provided electronic copies of the Web-based notes, simulations, and software. Familiarity with the material in undergraduate courses in ordinary differential equations and linear algebra will be helpful. Participants for this minicourse will be required to bring a laptop equipped with 100MB of disk space, 512K memory, a CD drive and with one of three operating systems: Windows XP, MAC OS 10.4, or Linux.

MINICOURSE #6

USING THE HISTORY OF CALCULUS TO ENRICH OUR TEACHING

David Bressoud, Macalester College

Paul Zorn, St. Olaf College

Part 1: Friday, August 3, 3:30 pm – 5:30 pm

Part 2: Sunday, August 5, 3:30 pm – 5:30 pm

Garden Room, The Fairmont San Jose

This course will explore how the history of mathematics can inform our teaching of calculus, focusing on examples, problems, and projects for deepening and expanding student understanding. In the first session, we will look at the historical development of the concepts of limit and convergence and the difficulties that mathematicians encountered in coming to grips with these ideas. In the second session, we will turn to Newton's Principia and suggest ways to help students investigate some of his insights and results.

Short Course

TWO-DAY SHORT COURSE IMPLEMENTING BIOLOGY ACROSS THE MATHEMATICS CURRICULUM

John R. Jungck, Beloit College

**Part 1: Wednesday, August 1,
9:00 am – 5:00 pm**

**Part 2: Thursday, August 2, 9:00 am – 5:00 pm
Gold Room, The Fairmont San Jose**

Many mathematics educators are faced with the challenge that the majority of students enrolled in their classes are from the broader life sciences (e.g., biology, allied health, environmental sciences, agriculture, etc.), while most mathematicians have very little background in the life sciences themselves. Therefore, the MAA has chosen to meet this year in combination with the joint meeting of the Society for Mathematical Biology and the Japanese Society for Mathematical Biology.

This short course, while preceding MathFest, is concurrent with those joint meetings and has the advantage that participants will not only be able to be involved in the short course, but will also be able to attend the plenary lectures of those societies as guests of the societies at no additional cost. Besides the Society for Mathematical Biology and the SIGMAA on Mathematical Biology, the individual lecturers in the short course also represent several organizations committed to the inclusion of much more mathematics in biology education and much more biology in mathematics education: the BioQUEST Curriculum Consortium (in particular, several of its projects: NUMBERS COUNT! [Numerical Undergraduate Mathematical Biology Education: explorIng with Statistics, Computation, mOdeling, and qUaNtitative daTa]; the Biological ESTEEM Project [Excel® Simulations and Tools for Exploratory, Experiential Mathematics]; the BEDROCK Project [Bioinformatics Education Dissemination: Reaching Out, Connecting, and Knitting-together] <http://www.bioquest.org>); and CoMBiNe: [the Computational and Mathematical Biology Network] <http://muweb.marymount.edu/~eschaefe/combine/welcome.htm>).

Biological subjects will include evolution, ecology, epidemiology, biometrics, genetics, bioinformatics, microbiology, and biochemistry. Mathematical subjects will include probability and statistics, linear algebra, differential equations, combinatorics, number theory, graph theory, and geometry. The examples employed will be appropriate for inclusion in courses aimed at the first two years of the undergraduate curriculum and will serve to introduce mathematicians to many current avenues of research in mathematical biology, as well.

LECTURE 1

Probability and Statistics-based Models Raina Robeva, Sweet Briar College

This part of the course will focus on biological and medical models that utilize methods from the fields of probability and statistics. We will begin with examples from genetics to illustrate the binomial, normal, and Poisson distributions and discuss the underlying biological mechanisms and mathematical connections. More specifically, we will outline the experiments of Nilsson – Ehle and discuss the emergence of quantitative traits based on the Central Limit Theorem. We will examine the Luria-Delbrück experiments and show how using a Poisson distribution to describe the count of resistant bacterial variants allows for statistically distinguishing between the hypothesis of mutation to immunity and the hypothesis of acquired immunity. Next, we will examine some medical models for risk assessment, such as assessing the risk for hypoglycemia in diabetes, quantified from self-monitoring blood glucose data, and the risk for neonatal sepsis, quantified from electrocardiographic (EKG) data.

LECTURE 2

Biological Esteem: Linear Algebra, Population Genetics, and Microsoft Excel Anton E. Weisstein, Truman State University

Population geneticists apply a wide range of mathematical techniques in seeking to understand and predict changes in the genetic makeup of real-world populations. In this session, we will: (1) review the recursion equations for calculating allele frequencies under the assumptions of Hardy-Weinberg Equilibrium, (2) mathematically model the effects of specific evolutionary forces, such as selection and migration, and (3) apply linear algebra to understand why natural selection disfavors a specific genetic variant that provides the best-known resistance to malarial infection. These investigations will introduce some of the Excel tools from the BioQUEST Consortium's Biological ESTEEM collection.

LECTURE 3

Bioinformatics from an Applied Combinatorics Perspective

**Jennifer R. Galovich, St. John's University and
the College of St. Benedict**

RNA folding, Smith-Waterman Sequence Alignment, and other topics will be presented in the context of a new bioinformatics course taught in an undergraduate institution's mathematics department by an applied combinatorist who spent her sabbatical last year at the Mathematical Biosciences Institute at Ohio State University and with the BEDROCK Project (Bioinformatics Education Dissemination: the Reaching Out, Connecting With, and Knitting Together BioQUEST Curriculum Consortium at Beloit College).

LECTURE 4

The Basics of Infectious Disease Modeling

Holly D. Gaff,

University of Maryland School of Medicine

A wide variety of mathematical models have been used to study an equally wide variety of infectious diseases. We will discuss the basics of infectious disease epidemiology, the building blocks for models, the types of mathematical approaches, and the history of epidemiology models. We will walk the examples of disease models, including measles and tick-borne diseases.

LECTURE 5

Teaching Mathematics to Biologists and Biology to Mathematicians

Gretchen A. Koch, Goucher College

When using mathematics to model biology, one must decide the level at which to present the material. In this session, I will present several modules from the BioQUEST Consortium's Biological ESTEEM collection and demonstrate to the audience how each module can be used at varying levels of mathematical and biological ability. The modules will include a logistic growth model, a competing species model, and an SIR epidemiological model. Time permitting, an additional application based in MATLAB will be demonstrated to compare and contrast the ESTEEM competing species model.

LECTURE 6

Biographer: Graph Theory Applied to the Breadth of Biology

John R. Jungck, Beloit College

Graph theory is generally applicable to many areas of biology, including pedigrees and multiple allele genetic graphs in genetics, fate maps in developmental biology, phylogenetic trees in evolution and systematics, metabolic pathways and RNA folding in biochemistry, interactomes in genomics-molecular biology, restriction maps in biotechnology, food webs in ecology, infection contact maps in epidemiology, and Delaunay triangulations in image analysis. Despite this breadth of utility, there has been a lack of easy-to-use tools for entering biological data into graph visualization packages with tools for graph theoretical analysis. BioGrapher is an Excel® and open source graph visualization package for importing, illustrating, and analyzing biological data. Interval graphs, planar graphs, trees, de Bruijn graphs (Euler paths), n-cubes (Hamiltonian paths), and Voronoi tessellations-Delaunay triangulations will be illustrated through biological examples.

LECTURE 7

Number Theory and Genomics

Julius H. Jackson, Michigan State University

Number theory is used in a study of bacterial and archaeal genomes as information systems that determine the physiological states of an organism. The larger goal is to model the dynamics of information evolution and exchange in prokaryotes and to derive the theory base to explain the origin, evolution, and function of genes and chromosomes. Our goal is to discover and model gene-specific and genome-specific information that defines metabolic properties and physiological behavior of prokaryotes in adaptive response to their environment(s). The limits of coding space, protein mobility, and variation space are explored to understand the physiological consequences of such limits. This work utilizes experimental methods for genetic, molecular biological, biochemical, and microbiological studies in combination with mathematical and computational methods for modeling and simulating the function of natural systems. My teaching approach is to prepare students to view organisms and their environments as biological systems, to ask critical questions about how these systems work and interact, and to design experiments that yield quantitative assessments of systems behavior that will lead to construction of mathematical models for simulation.

LECTURE 8:

Beyond Calculus: Integrating Mathematics, Statistics, and Computation into Biology Courses

Claudia Neuhauser, University of Minnesota

"Today, most undergraduate biology majors take quite a bit of basic quantitative coursework early on, but then they never see it again," says Neuhauser. "A few years later, when they're graduate students, they encounter the new world of biology, full of massive amounts of data and analysis—and they're not prepared. We've got to change that." Neuhauser will emphasize the need to train faculty in quantitative techniques and teaching. She envisions adding mathematically themed guest lectures to classes and possibly holding teaching workshops for faculty, as well as working with faculty one-on-one. She believes that this calls for a "logical step" in incorporating quantitative techniques across the curriculum. "For several years, my goal has been to develop at least two solid years of undergraduate quantitative training for our biology majors "Now, we can do so much more."

SIGMAA Sessions

SIGMAA ON ENVIRONMENTAL MATHEMATICS

Business Meeting and Guest Lecturer
Saturday, August 4, 4:15 pm – 6:15 pm
Gold Room, The Fairmont San Jose

Environmental Modeling, Sunday morning (see the “Invited Paper Session” section). Geology Field Trip, Sunday afternoon (See the “Social Events” section for details).

SIGMAA ON THE HISTORY OF MATHEMATICS

Teaching a History of Mathematics Course
Sunday, August 5, 2:00 pm - 5:00 pm
Hillsborough Room, The Fairmont San Jose

(See the “Contributed Paper Session” for more details).

SIGMAA ON MATHEMATICAL AND COMPUTATIONAL BIOLOGY

Mathematical Questions in Bioinformatics
Friday, August 3, 1:00 pm – 4:00 pm
Regency 2, The Fairmont San Jose

(See the “Invited Paper Session” for more details).

Biomathematics in the First Two Years

Saturday, August 4, 8:30 am – 10:30 am
Sacramento Room, The Fairmont San Jose

(See the “Contributed Paper Session” for more details).

Curriculum Development and Research by Undergraduates in Mathematical Biology

Saturday, August 4, 2:30 pm – 3:50 pm
Crystal Room, The Fairmont San Jose

(See the “Panels and Other Sessions” for more details).

SIGMAA ON MATHEMATICS AND THE ARTS

Art Exhibit

Friday, Saturday, and Sunday
Exhibit Hall, Imperial Ballroom

Mathematics and the Arts

Saturday, August 4, 1:00 pm – 3:00 pm
Hillsborough Room, The Fairmont San Jose

(See the “Contributed Paper Session” for more details).

Creating Geometric Islamic Patterns

Sunday, August 5, 3:30 pm - 5:00 pm
Club Regent, The Fairmont San Jose

(See the Panels, Workshops, and Other Sessions” section).

SIGMAA ON QUANTITATIVE LITERACY

Quantitative Literacy, Mathematics, and Civic Engagement: Teaching the Importance of Quantitative Literacy for a Healthy Democracy in a General Education Course

Friday, August 3, 9:00 am -10:20 am
Club Regent, The Fairmont San Jose

(See the “Panels and Other Sessions” for more details).

SIGMAA ON THE PHILOSOPHY OF MATHEMATICS

Guest Lecture

Saturday, August 4, 4:15 pm – 5:15 pm

Crystal Room, The Fairmont San Jose

The Meaning of Existence in Mathematics

Michael Beeson, San Jose State University

Does the number two exist in the same way that electrons exist, or in a different way? What do we mean when we say, “There exists a number having such-and-such properties”? The talk will examine these questions in the light of twentieth-century science: Are we in a better position to answer these questions now than our predecessors were in 1907?

Reception

Saturday, August 4, 5:15 pm – 6:15 pm

Crystal Room, The Fairmont San Jose

SIGMAA ON RESEARCH IN UNDERGRADUATE MATHEMATICS EDUCATION

Developing Content-Based Masters Programs for In-Service Mathematics Teachers

Sunday, August 5, 1:00 pm – 2:20 pm

Gold Room, The Fairmont San Jose

(See the “Panels and Other Sessions” for more details).

Workshop on Essential Reasoning Abilities and Conceptual Foundations for Beginning Calculus

Saturday, August 4, 1:00 pm – 2:30 pm

Sunday, August 5, 1:00 pm – 2:30 pm

Empire Room, The Fairmont San Jose

(See the “Panels and Other Sessions” for more details).

SIGMAA ON STATISTICAL EDUCATION

Innovative Ideas for Teaching Concepts in an Introductory Statistics Course

Friday, August 3, 3:15 pm – 5:15 pm

Hillsborough Room, The Fairmont San Jose

(See the “Contributed Paper Session” for more details).

SIGMAA ON TEACHING ADVANCED HIGH SCHOOL MATHEMATICS

Business Meeting and Reception

Friday, August 3, 4:00 pm – 5:30 pm

Empire Room, The Fairmont San Jose

Calculus in High School: What is Happening? What Do We Need to Know?

Friday, August 3, 1:00 pm – 2:20 pm

Club Regent, The Fairmont San Jose

(See the “Panels and Other Sessions” for more details).

Teaching Calculus in High School: Ideas that Work

Sunday, August 5, 8:30 am – 10:30 am

Sacramento Room, The Fairmont San Jose

(See the “Contributed Paper Session” for more details).

Meetings of other Societies

THE EULER SOCIETY

INVITED SPEAKER

EULER IN THREE ACTS

William Dunham, Muhlenberg College
Sunday, August 5, 1:00 pm – 1:50 pm
Regency 1, The Fairmont San Jose

INVITED PAPER SESSIONS

Leonard Euler Tercentenary: 1707-2007

Robert Bradley, Adelphi University
Edward Sandifer, Western Connecticut State University

Friday, August 3, 8:30 am – 10:30 am

Atherton Room, The Fairmont San Jose

Friday, August 3, 1:00 pm – 6:00 pm

Atherton Room, The Fairmont San Jose

Saturday, August 4, 8:30 am – 11:30 am

Atherton Room, The Fairmont San Jose

Sunday, August 5, 8:30 am – 10:30 am

Atherton Room, The Fairmont San Jose

CONTRIBUTED PAPER SESSION

Leonard Euler: Life, Work, and Legacy

Robert Bradley, Adelphi University

Edward Sandifer, Western Connecticut State University

Saturday, August 4, 1:00 pm – 5:30 pm

Atherton Room, The Fairmont San Jose

READINGS FROM ORIGINAL SOURCES SESSIONS

Robert Bradley, Adelphi University

Edward Sandifer, Western Connecticut State University

Friday, August 3, 7:00 pm – 9:00 pm

Saturday, August 4, 7:00 pm – 9:00 pm

Atherton Room, The Fairmont San Jose

EMAIL LAB INFO

Hours:

Friday, August 3: 9:00 am – 5:00 pm

Saturday, August 4: 9:00 am – 5:00 pm

Sunday, August 5: 9:00 am – 2:00 pm

The Fairmont San Jose
Imperial Ballroom Exhibit Hall

MATHEMATICAL BIOLOGY SESSIONS

MAA-SMB-JSMB JOINT SHORT COURSE, PART I

Implementing Biology Across the Mathematics Curriculum

Organized by John Jungck, Beloit College

Wednesday, August 1, 9am – 5 pm

Gold Room, The Fairmont San Jose

MAA-SMB-JSMB JOINT SHORT COURSE, PART 2

Implementing Biology Across the Mathematics Curriculum

Organized by John Jungck, Beloit College

Thursday, August 2, 9am – 5 pm

Gold Room, The Fairmont San Jose

MAA-SMB JOINT INVITED ADDRESS

On the Dynamics and Evolution of Emergent and Re-emergent Diseases: From Tuberculosis to SARS to the Flu

Carlos Castillo Chavez, Arizona State University

Friday, August 3, 8:30 am – 9:20 am

Regency Ballroom, The Fairmont San Jose

MAA INVITED ADDRESS

Managing Natural Resources: Mathematics Meets Politics, Greed, and the Army Corps of Engineers

Louis Gross, Department of Ecology

Friday, August 3, 9:30 am – 10:20 am

Regency Ballroom, The Fairmont San Jose

MAA SIGMAA ON COMPUTATIONAL AND MATHEMATICAL BIOLOGY

Invited Paper Session

Mathematical Questions in Bioinformatics

Jennifer Galovich, St. John's University

Laurie Heyer, Davidson College

Friday, August 3, 1:00 pm – 4:00 pm

Regency 2, The Fairmont San Jose

JOINT MAA-SMB RECEPTION

Friday, August 3, 4:30 pm – 5:30 pm

Club Regent, The Fairmont San Jose

MAA CONTRIBUTED PAPER SESSION

Biomathematics in the First Two Years

Tim Comar, Benedictine University

Saturday, August 4, 8:30 am – 10:30 am

Sacramento Room, The Fairmont San Jose

Saturday, August 4, 1:00 pm – 3:20 pm

Valley Room, The Fairmont San Jose

Sunday, August 5, 8:30 am – 10:30 am

Belvedere Room, The Fairmont San Jose

PANEL ON "CURRICULUM DEVELOPMENT AND RESEARCH BY UNDERGRADUATES IN MATHEMATICAL BIOLOGY"

Jason Miller, Truman State University

Saturday, August 4, 2:30 pm – 3:50 pm

Crystal Room, The Fairmont San Jose

Social Events

HIGHLIGHTS OF SAN FRANCISCO SPOUSE/GUEST TOUR

Thursday, August 2, 9:30 am - 4:30 pm
Leaving from The Fairmont San Jose

This is the most popular tour for visitors to Northern California. This tour features all of the major highlights of San Francisco, including the Golden Gate Bridge, Fisherman's Wharf, Pier 39, Chinatown, North Beach, Union Square, Nob Hill, and the Civic Center, Pacific Heights, the Castro, Golden Gate Park, and the Haight-Ashbury. There will be plenty of fantastic views and lots of great photo opportunities. A professional tour guide will provide entertaining and informative commentary about the history of San Francisco and the many neighborhoods, including the colorful characters and legends that have made this city so popular with visitors for generations. Lunch will be on your own at one of the many restaurants at Pier 39. This tour departs from the front of The Fairmont San Jose.

MAA-PME STUDENT RECEPTION

Thursday, August 2, 5:00 pm – 6:00 pm
California Room, The Fairmont San Jose

OPENING RECEPTION

Thursday, August 2, 6:30 pm – 7:30 pm
Regency Foyer, The Fairmont San Jose

The Association is pleased to hold a reception with a cash bar for all MathFest participants prior to the Opening Banquet.

OPENING BANQUET

Thursday, August 2, 7:30 pm – 9:30 pm
Regency Ballroom, The Fairmont San Jose

Join new and long-time friends and colleagues for a dinner of Mediterranean Chicken Breast, Cedar Baked Honey Thyme Salmon, or Grilled Vegetable Cornucopia. There will be an after-dinner presentation by Noam Elkies of Harvard University entitled "Canonical forms: A mathematician's view of musical canons." Serving as master of ceremonies will be Don Albers, MAA Books Editorial Director.

MAA-SMB RECEPTION

Friday, August 3, 4:30 pm – 5:30 pm
Club Regent, The Fairmont San Jose

This reception with a cash bar celebrates first joint meeting of the Association and the Society for Mathematical Biology.

GRADUATE STUDENT RECEPTION

Friday, August 3, 5:00 pm – 6:00 pm
Regency 2, The Fairmont San Jose

AWM-MAA RECEPTION

Friday, August 3, 9:00 pm – 11:00 pm
Gold Room, The Fairmont San Jose

Plan to attend this cooperative reception with the Association for Women in Mathematics following the J. Sutherland Frame Lecture. All supporters of women in mathematics are encouraged to attend and meet AWM members.

PI MU EPSILON BANQUET AND AWARDS CEREMONY

Saturday, August 4, 6:00 pm – 7:45 pm
San Jose State University

The banquet and award ceremony will be held at the Student Union on the campus of San Jose State University. After the banquet you are encouraged to attend the popular PME J. Sutherland Frame Lecture, given this year by Donald Knuth of Stanford University, which will be held in The Fairmont San Jose.

MAA CELEBRATION: 20 YEARS OF STUDENT PAPERS

Saturday, August 4, 9:00 pm – 10:00 pm
Crystal Room, The Fairmont San Jose

Come celebrate 20 years of undergraduate student talks at the summer meetings with an ice cream social. We will also recognize all students who gave talks in the MAA Student Chapters paper sessions and award prizes for the best of them. All are invited. Robert Schneider, singer, songwriter and producer for The Apples in Stereo, will perform a few of his songs during the social.

GEOLOGY FIELD TRIP

Ben Fusaro, Florida State University
Sunday, August 5, 1:30 pm – 4:30 pm
Leaving from The Fairmont San Jose
\$10 for Environmental Math SIGMAA members,
\$15 for others.

Dr. Richard Sedlock, Chair of the San Jose State University Geology Department, will take us on a bus tour of the active geology in the surrounding area. San Jose, the 3rd largest city in California, is near the Hayward fault, a major source of earthquake activity. The Pacific oceanic plate is thrusting into and below (subducting) the N.A. plate, and this fault is the boundary between the two. Dr. Sedlock will tell us about tectonic plate theory and other geology formations. Stop by the MAA Membership booth for more information and to purchase tickets.

MAA SILVER AND GOLD RECEPTION AND BANQUET

Sunday, August 5, 6:00 pm – 9:00 pm
Adobe Lodge, Santa Clara University

At this annual banquet, the MAA recognizes individuals who have been long-time members of the Association, with special honors for 25- and 50-year members. All members are welcome to attend. The emcee will be Jerry Alexanderson of Santa Clara University. Frank Farris of Santa Clara University will take us on a leisurely tour of homemade images that illustrate such hard-to-picture things as complex function graphs and hyperbolic wallpaper with his talk "I See Mathematics: Computed Images in Geometry." There will be a cash-bar reception beginning at 6:00 pm, with the banquet following at 6:30 pm. The banquet will be held at the Adobe Lodge on the campus of Santa Clara University. Transportation will be provided from The Fairmont San Jose.

Exhibit Hall

Exhibit Hall Information

Be sure to schedule some time to visit this year's MathFest Exhibit Hall. MathFest attracts a wide variety of exhibitors, from some of the foremost publishers of mathematical and scientific books and journals, to purveyors of cutting-edge software and technology, to companies who provide support for those in the educational community. Whatever your interests may be, the MathFest Exhibit Hall is sure to have something for you.

Scavenger Hunt

Don't miss out on the MathFest Scavenger Hunt. Stop by exhibitor booths to get information that will help you complete the Scavenger Hunt form found in your registration packet. Return it with the correct answers, and you become eligible to win some really great prizes. The drawings will be held in the Exhibit Hall. Who knows? You could end up a winner!

Morning and Afternoon Snack Breaks

The MathFest Exhibit Hall features a lounge area complete with a Snack Bar, Email Center, and a Student Hospitality Center. Take a relaxing break, grab a cup of coffee, pick up lunch, and check your email ... all while visiting the Exhibit Hall!

Reception

Stop by the MathFest Exhibit Hall for a special reception sponsored by Addison-Wesley on Saturday, August 4th at 3:00 pm. While you are there, don't forget to find out "Who created the three-dimensional java applets available within the Thomas' Calculus series MyMathLab course." That answer will get you one step closer to completing the MathFest Scavenger Hunt and winning great prizes!

Location

The Fairmont Hotel Imperial Ballroom, 2nd Floor

Exhibit Hours

Friday, August 3, 2007	9:00 am – 5:00 pm
Saturday, August 4, 2007	9:00 am – 5:00 pm
Sunday, August 5, 2007	9:00 am – 2:00 pm

Exhibitors

Addison Wesley **Sponsor**
A.K. Peters, Ltd.
American Mathematical Society
Birkhauser Boston
Brooks Cole, Thomson
Cambridge University Press
Casio
Frog Publications
Hawkes Learning Systems
Key College Publishing **Sponsor**
Maplesoft
MAA – American Mathematics Competitions
MAA – Development Office
MAA – Member Services
MAA – Publications
National Science Foundation
Personal Tex Inc.
Prentice Hall
Princeton University Press
Robert Carden Art
SIGMAA Arts
Springer
Texas Instruments Incorporated
WebAssign
W.H. Freeman & Company
Wiley
Wolfram Research
Wood Mobius

Poster Sessions

presented in the Exhibit Hall

**Mathematical and Theoretical
Biology Institute**

Friday, 2:30pm – 4:30pm

Graduate Students

Saturday, 1:00pm – 2:30pm

Additional Euler Poster Sessions will be available throughout the meeting.

General Information

REGISTRATION DESK:

The registration desk will be located on the Ballroom level (second floor) of The Fairmont San Jose, outside the Imperial Ballroom. It will be open Thursday, August 2, from noon to 7:00 pm, Friday, August 3, and Saturday, August 4, from 8:00 am to 4:00 pm, and Sunday, August 5 from 8:00 am to 2:00 pm. You may pick up your registration materials, register on-site, and purchase event tickets, when available, at this location.

MATHFEST HOUSING:

Headquarters Hotel: The Fairmont San Jose
170 S. Market St.
San Jose, California 95113

Parking

The Fairmont San Jose garage is located below the hotel. Only valet parking is offered, there is no self parking available. Overflow garages are located throughout the downtown area with close proximity to the Hotel. Parking is \$26 per night including in-and-out privileges for overnight guests.

San Jose State University
One Washington Square
San Jose, CA 95192-0005
408.924.1000

Parking

When you arrive at campus, please park in the temporary visitor parking located on 7th Street, right off of San Salvador Street, by the University Police Department. Walk over to Joe West Residence Hall, located on the corner of 9th Street and San Salvador Street. Come into Joe West Hall, 2nd floor (you can call the conference desk at 5-5604 from the outside call box to get into the building) and go to the Conference desk check in. At check in you will need to purchase a \$15 week-long visitor pass.

Radisson Hotel San Jose Airport
1471 N. 4th St.
San Jose, CA 95112
408.452.0200

Parking

Free parking in a covered garage for the length of your stay.

TRAVEL INFORMATION

DRIVING DIRECTIONS:

From Mineta San Jose International Airport
To The Fairmont San Jose: make a right onto Guadalupe Parkway (HWY 87 South). Continue down Guadalupe Parkway (HWY 87 South) to the Park Avenue Exit. Make a left on Park Avenue and continue down three blocks. Make a right turn onto S. Market Street. Make a U-turn around Plaza de Cesar Chavez Park. The hotel will be on the right side between San Carlos Street and San Fernando Street.

To San Jose State University: take Guadalupe Parkway (HWY 87 South) to I-280 southbound. Exit at 7th Street. Turn left on 7th Street to campus.

CAR RENTAL INFORMATION:

Avis and Budget have been selected as the official car rental companies for MathFest 2007. When making your reservations you must use Avis Meeting Discount Number K019303 or Budget Meeting Discount Number X914201 to get the discounted meeting rate. Reservations can be made by telephone at 1-877-289-2611 for Avis or 1-800-214-6092 for Budget.

PUBLIC TRANSPORTATION:

The Valley Transit Authority services all of San Jose Transit buses and the light rail line connects to downtown San Jose and the campus from throughout the county, the airport and the Amtrak/CalTrain San Jose depot. Call 408-924-7433 for specific route information.

Weekday Service-

Every 20 minutes 5:00 am – 6:00 am
Every 15 minutes 6:00 am – 9:00 pm
Every 30 minutes 9:00 pm – midnight

Weekend and Holiday Service-

Every 20-40 minutes, 5:00 am – 7:00 am
Every 15 minutes, 7:00 am – 9:00 pm
Every 30 minutes, 9:00 pm – midnight

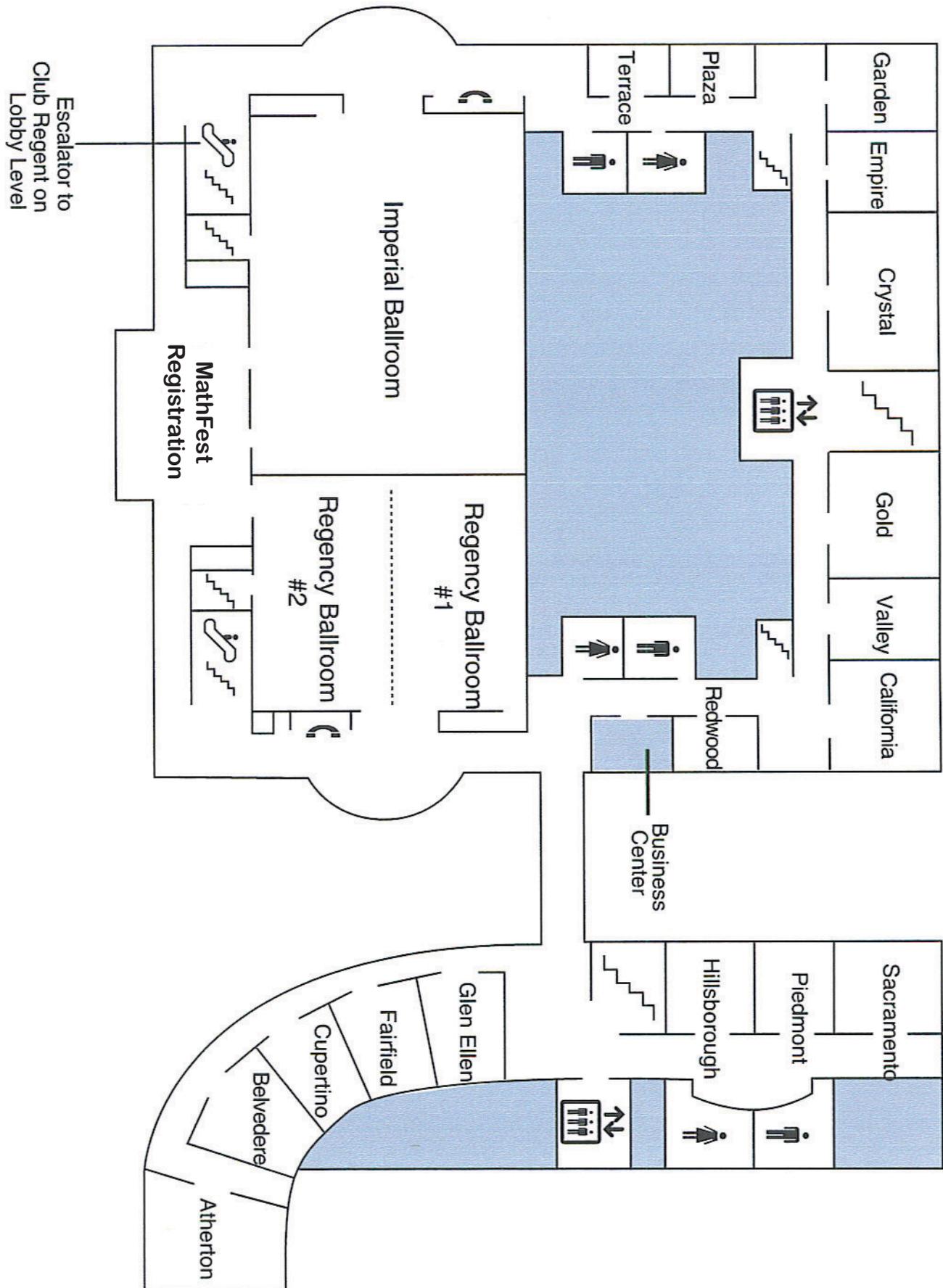
AIRPORT SHUTTLE AND TAXI SERVICE:

Yellow Express Shuttle provides shuttle service from the Mineta San Jose International Airport to The Fairmont San Jose for \$15 for the first two people and \$5 for any additional people. Ticket reservations can be made by calling 1-800-928-2942 or by emailing info@sanjosegroundtransportation.com.

Taxi Service

Taxis to and from Mineta San Jose International Airport cost approximately \$15 to \$20 USD.

The Fairmont Floor Plan



San Jose Map

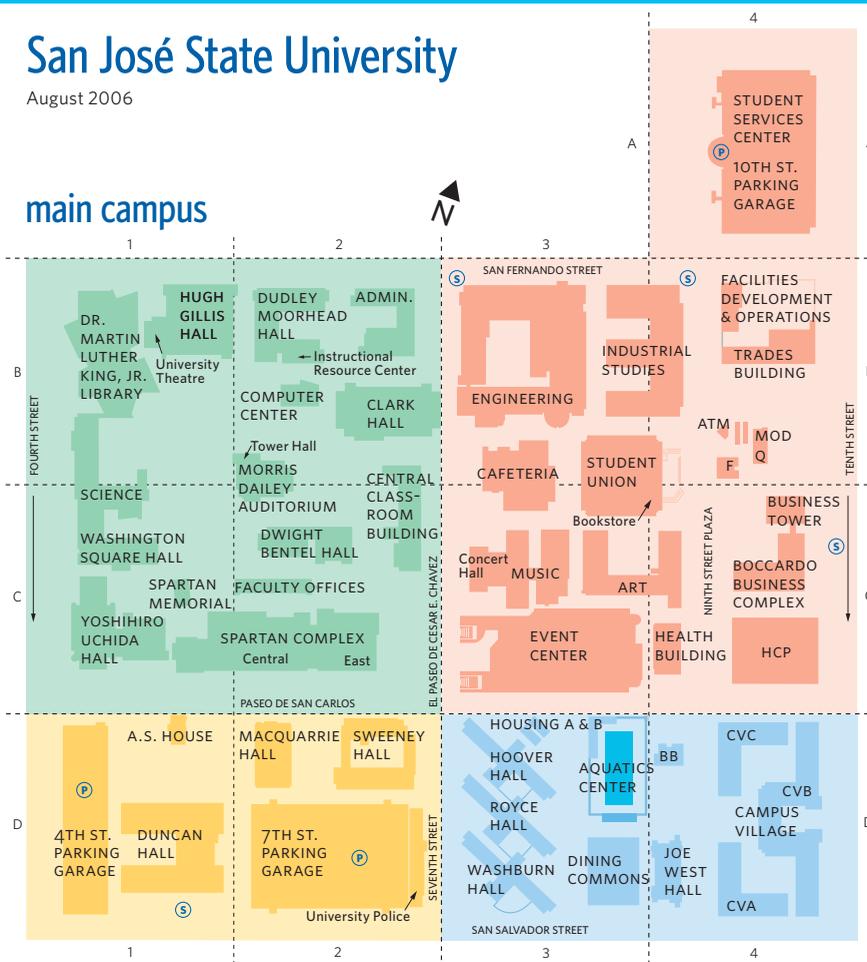


San Jose State University Map

San José State University

August 2006

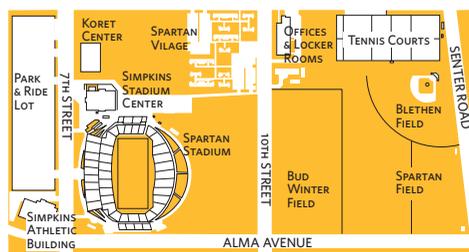
main campus



BUILDING	LOCATION	BUILDING	LOCATION
ADM	Administration.....B-2	IS	Industrial Studies.....B-4
AQX	Aquatics Center.....D-3	IRC	Instructional Resource Center.....B-2
ART	Art Building.....C-3	JWH	Joe West Hall.....D-4
ASH	Associated Students House.....D-1	KING	Dr. Martin Luther King, Jr. Library.....B-1
ATM	Automated Teller Machines.....B-4	MH	MacQuarrie Hall.....D-2
BBC	Boccardo Business Complex.....C-4	MOD	Modular Buildings.....B-4
BB	Building BB.....D-4	MD	Morris Dailey Auditorium.....B-2
BT	Business Tower.....C-4	MUS	Music Building.....C-3
CAF	Cafeteria.....B-3	Parking Garages	
CVA	Campus Village A.....D-4		4th Street.....D-1
CVB	Campus Village B.....D-4		7th Street.....D-2
CVC	Campus Village C.....D-4		10th Street.....A-4
F	Career Center.....B-4	UPD	University Police Department.....D-2
CCB	Central Classroom Building.....C-2	Q	Modular Building Q...B-4
CL	Clark Hall.....B-2	RYC	Royce Hall.....D-3
CC	Computer Center.....B-2	SCI	Science Building.....C-1
CH	Concert Hall.....C-3	SPXC	Spartan Complex Central.....C-2
CY	Corporation Yard.....B-4	SPXE	Spartan Complex East.....C-2
DC	Dining Commons.....D-3	SPM	Spartan Memorial.....C-1
DMH	Dudley Moorhead Hall.....B-2	SSC	Student Services Center.....A-4
DH	Duncan Hall.....D-1	SU	Student Union.....B-3
DBH	Dwight Bentel Hall.....C-2	SH	Sweeney Hall.....D-2
ENG	Engineering Building.....B-3	TH	Tower Hall.....B-2
EC	Event Center.....C-3	YUH	Uchida Hall.....C-1
FOB	Faculty Offices.....C-2	UPD	University Police.....D-2
HB	Health Building.....C-4	UT	University Theatre.....B-1
HCP	Heating & Cooling Plant.....C-4	WSH	Washburn Hall.....D-3
HOV	Hoover Hall.....D-3	WSQ	Washington Sq. Hall...C-1
HGH	Hugh Gillis Hall.....B-1		

P Parking Garage
S SJSU Shuttle Stop

south campus



- KOR Koret Center
- SAB Simpkins Athletic Building
- SIM Simpkins Stadium Center

off-campus facilities

- 210 NORTH 4TH STREET**
- International & Extended Studies administration
 - Global Studies Institute
 - Mineta Transportation Institute
 - Processed Food Institute
 - SJSU Foundation

ART FOUNDRY (AF)
1036 South 5TH St

AS CHILD DEVELOPMENT CENTER
460 South 8TH St
next to University Club

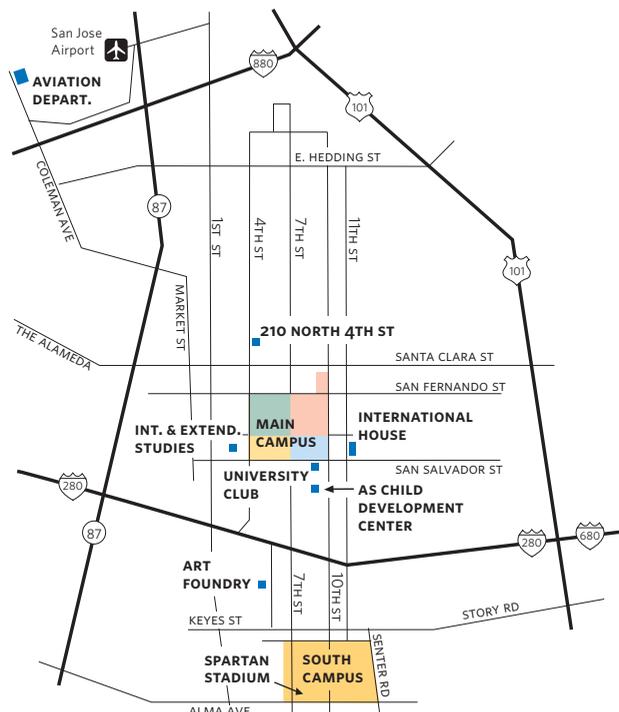
AVIATION DEPARTMENT (AB)
1120 Coleman Ave

INTERNATIONAL HOUSE
360 South 11TH St

MOSS LANDING MARINE LABORATORIES (MLML)
8272 Moss Landing Rd,
Moss Landing
not shown on map

INTERNATIONAL AND EXTENDED STUDIES (IES)
Professional Development Center classroom building
384 South 2ND St

UNIVERSITY CLUB (UC)
408 South 8TH St



Daily Planner

MathFest August 3-5, 2007 Daily Planner

Friday August 3, 2007

AM:

NOON:

PM:

Saturday August 4, 2007

AM:

NOON:

PM:

Sunday August 5, 2007

AM:

NOON:

PM:

PUBS #2 AD



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