

# Friday, August 12

12:30pm  
MW724

## Registration

in Math Tower 7<sup>th</sup> Floor Lounge (231 West 18th Ave)

1:30pm  
MW724

*"Welcome to the Young Mathematicians Conference 2005"*

Peter March (Chair, Dept of Math, OSU)

2:00pm  
EA2x5

### Session I-A

Chair: Prof Joshua Laison. Room:EA265.

2:00pm EA265	<b>Angelo L Chandler Jr.</b> <b>Diane M Lunman</b> (Worcester Polytechnic Institute & Nazareth College of Rochester NY)	<a href="#">Applications of covering maps to spectral theory of graphs</a>
2:30pm EA265	<b>Robert J Marciniak</b> <b>Jordan A Volz</b> (Canisius College & Bard College)	<a href="#">Characteristic Polynomials, the Figure Equation, and Algebra of Graphs</a>
3:00pm EA265	<b>Courtney R Gibbons</b> (Colorado College)	<a href="#">Fixing Sets of Graphs and Groups</a>
3:30pm EA265	<b>Kevin Lin</b> (UC Berkeley)	<a href="#">Uniformly (3,r)-regular graphs</a>
4:00pm EA265	<b>Christopher W Miller</b> <b>Amber C Russell</b> (Fairfield University & Mississippi State University)	<a href="#">Isoperimetric Numbers of Balanced Incomplete Block Design Graphs</a>

### Session I-B

Chair: Prof Paul Baginski. Room:EA275.

2:00pm EA275	<b>Matthew Strom Borman</b> (Reed College)	<a href="#">Investigations in Nonabelian Difference Sets of Order 25</a>
2:30pm EA275	<b>Kathleen G Kennedy</b> (The University of the South)	<a href="#">Factorization and Delta Sets in <math>K[x;S]</math></a>
3:00pm EA275	<b>Matthew R K Wright</b> (Carnegie Mellon)	<a href="#">Accepted Elasticity of Semigroup Rings</a>
3:30pm EA275	<b>Christopher Y Crutchfield</b> (UC Berkeley)	<a href="#">Full Elasticity of Semi-group Rings</a>
4:00pm EA275	<b>Enrique Trevino</b> <b>Yan Zhang</b> (University of Texas at El Paso (UTEP) & Harvard University)	<a href="#">On the Generalization of the Frobenius Problem</a>

### Session I-C

Chair: Prof Cameron Parker. Room:EA285.

2:00pm EA285	<b>Tim E Clem</b> (American University)	<a href="#">Automatic Differentiation: Approaches and Optimizations</a>
2:30pm EA285	<b>Nickolaus J Mueller</b> (University of Illinois Urbana-Champaign)	<a href="#">An Analysis of Algorithms for Solving Phase Retrieval Problems</a>
3:00pm EA285	<b>Michael S Skalak</b> (Northwestern University)	<a href="#">Properties of the Horst Algorithm for the Multivariate Eigenvalue Problem</a>
3:30pm EA285	<b>Walter J Melancon</b> (Louisiana State University)	<a href="#">Rational realization of nonzero eigenvalues for symmetric matrices of trees and tree sign patterns</a>
4:00pm EA285	<b>Daniel A James</b> (University of San Diego)	<a href="#">Finding A Matrix of Given Sign Pattern And Line Sums Using the Revised Simplex Method</a>

5:00pm  
EA160

## Robot Motions and Collisions

**Satyan Devadoss**

Williams College

*Free Evening* See webpage for [Food](#), [Movies](#), [Venues](#)

# Saturday, August 13

Coffee/Breakfast

8:30am  
MW724

9:30am  
EA160

## *The Fractal Geometry of the Mandelbrot Set*

Robert L. Devaney  
Boston University

10:30am  
MW724

## Poster Presentations & Refreshments

<b>Beth E Bower</b> <b>Pamela S Wentz</b> (College of William and Mary & Millersville University)	<a href="#">Portfolio Optimization: MAD vs. Markowitz</a>
<b>Sarah M Karl</b> (Central Michigan University)	<a href="#">The Effects of El Nino on mid-Michigan Climate</a>
<b>Meghan E Kelly</b> (University of Illinois)	<a href="#">Least Squares Inverse Eigenvalue Problems</a>
<b>Yishi P Li</b> (Florida State University / Embry-Riddle Aeronautical University)	<a href="#">Computational Network Survivability</a>
<b>Tracy J McKay</b> (Bowdoin College)	<a href="#">Evaluating the Chi-Square Attack for Steganography Using ROC Curves</a>
<b>Tricia E Profic</b> <b>Jack Wessel</b> (Canisius College)	<a href="#">Covers, Laplacians, and Kesten's Theorem</a>
<b>John Ratanaprasatporn</b> <b>Israel Cabello</b> (Binghamton University & Texas State)	<a href="#">Microarray Data: Dimension Reduction Strategies</a>
<b>Rebecca J Rosenblatt</b> (University of Illinois Urbana/Champaign)	<a href="#">Inverse Problems on Electric Fields</a>
<b>Yan Shen</b> (University of Chicago)	<a href="#">The Sentinel Method and Pollution in an Aquifer</a>
<b>Joanne M Sklodowski</b> (University of Dayton)	<a href="#">A Statistical Investigation of Obese Mice and Link to Diabetes</a>

Noon

Lunch Break

1:00pm  
EA2x5

### Session II-A

Chair: Prof Hasan Hamdan. Room:EA265.

1:00pm EA265	<b>Siddharth Rajaram</b> (Middlebury College)	<a href="#">Mixing Properties in Quantum Walks</a>
1:30pm EA265	<b>Nathanial J Burch</b> (Grand Valley State University)	<a href="#">Statistical Properties of Higher-order Lanczos Derivatives</a>
2:00pm EA265	<b>Amy M Jacks</b> <b>John L Szarka</b> (University of Missouri - Rolla & James Madison University)	<a href="#">Comparing Ratio Estimators Based on Systematic Samples</a>

### Session II-B

Chair: Prof Joseph Rosenblatt. Room:EA275

1:00pm EA275	<b>Michael S Chmutov</b> (The Ohio State University)	<a href="#">The Knight Move in Chromatic Graph Cohomology</a>
1:30pm EA275	<b>Go Fujita</b> (University of Florida)	<a href="#">Robots on Graphs</a>
2:00pm EA275	<b>Brian H Bargh</b> (Messiah College)	<a href="#">Comparing Normal Forms of Artin Braid Groups</a>

# Saturday, August 13 (cont.)

1:00pm  
EA2x5

## Session II-C

Chair: Prof Dinesh Sarvate. Room:EA285

1:00pm EA285	<b>Stacey E Ackerman</b> <b>Cyrus Aghili</b> (Brown University & Columbia University)	<a href="#">Comaprison of Dimension Reduction Strategies Applied to Microarray Data to Predict Survival</a>
1:30pm EA285	<b>Stephanie C Hicks</b> <b>Bethany L Jablonski</b> (Louisiana State University & East Tennessee State University)	<a href="#">A Comparative Study of Sib-Trait Linkage Analysis Methods</a>
2:00pm EA285	<b>Rahul Bansal</b> <b>Justin P Peters</b> (University of Texas at Austin & Wartburg College)	<a href="#">The Importance of Parameter Estimation in the Modeling of Cell Proliferation</a>

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## Refreshments and Posters (see above)

3:30pm  
EA2x5

## Session III-A

Chair: Prof Airat Bekmetjev. Room:EA265

3:30pm EA265	<b>Matthew J Rodrigues</b> <b>Samuel B Williams</b> (UC Berkeley & UNC-Asheville)	<a href="#">Sufficient Conditions for Complete Minors</a>
4:00pm EA265	<b>Rebecca K Lambert</b> (Carnegie Mellon University)	<a href="#">Sorting Problems in Graphs</a>

## Session III-B

Chair: Prof Joseph Rosenblatt. Room:EA275

3:30pm EA275	<b>Ioana R Soran</b> (Georgia Institute of Technology)	<a href="#">Weights whose Biorthogonal Polynomials admit a Rodrigues Formula</a>
4:00pm EA275	<b>James O Sizemore</b> (UC Berkeley)	<a href="#">New Results Concerning C-Groups</a>

## Session III-C

Chair: Prof Dinesh Sarvate. Room:EA285

3:30pm EA285	<b>Michael H Borkowski</b> (Simon's Rock College of Bard / Amherst College)	<a href="#">A Numerical Solution to the Quantum Mechanical Inverse Problem with Rational Scattering Coefficients</a>
4:00pm EA285	<b>Patrick M Corbin</b> (Tulane University)	<a href="#">Global Behavior of Dynamical Systems</a>

5:00pm  
EA160

## *The Art of Computation:* *M.C. Escher in the 21st Century*

**Ellen Gethner**

University of Colorado

6:30pm

## *Banquet at Fawcett Center* 2400 Olentangy River Road *in the Alumni Lounge*

# Sunday, August 14

8:30am  
MW724

Coffee/Breakfast

8:30am  
Blackwell

**Closed Mentor Session & Breakfast**  
at the [Blackwell Inn](#) Breakfast Room

10:00am  
EA2x5

## Session IV-A

Chair: Prof Kristy Meyer. Room:EA265

10:00am EA265	<b>Amy M Reiszl</b> (College of Charleston)	<a href="#">A Rank 6 Alternative to the Plücker Relations</a>
10:30am EA265	<b>Alan M LaMielle</b> (Central Michigan University)	<a href="#">The Computerized Exploration of Graphs</a>
11:00am EA265	<b>Katherine A Soller</b> (Central Michigan University)	<a href="#">Walk-Regular Graphs That are Not Vertex-Transitive</a>
11:30am EA265	<b>Yunjiang Jiang</b> (University of Georgia)	<a href="#">Minimal positive semidefinite rank of matrices associated with bipartite graphs</a>

## Session IV-B

Chair: Prof Dan Kalman. Room:EA275

10:00am EA275	<b>Nancy Ho Jennifer A Jones</b> (Mills College & Colorado State University-Fort Collins)	<a href="#">Classification of Paradromic Rings</a>
10:30am EA275	<b>James A Godzik</b> (University of California, Berkeley)	<a href="#">Colorability of paradromic rings</a>
11:00am EA275	<b>Gabriel E Maybrun</b> (California State University, Chico)	<a href="#">Boundary Slope Diameter and Crossing Number of 2-Bridge Knots</a>
11:30am EA275	<b>Sara K Rezvi</b> (University of Chicago)	<a href="#">Implications of intrinsically <math>S^1</math>-linked graphs in knot theory</a>

## Session IV-C

Chair: Tuncay Aktosun. Room:EA285

10:00am EA285	<b>Briana L McGarry</b> (Central Michigan University)	<a href="#">Cellular Automata: Is Rule 30 Random?</a>
10:30am EA285	<b>Eric Purdy</b> (University of Chicago)	<a href="#">Coin Weighing Problems</a>
11:00am EA285	<b>Tracey D Gunter</b> (College of Charleston)	<a href="#">Group Divisible Design with Two Groups and Block Size Five</a>
11:30am EA285	<b>Samuel J Buelk</b> (College of Charleston)	<a href="#">Pairwise Balanced Designs of Block Sizes Three and Five</a>

Noon  
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*"Wrap-Up Session of YMC 2005"*  
Peter March & Organizers