

Seventh Annual

Nebraska Conference for **Undergraduate Women** in Mathematics

All talks are open to the entire UNL Community

The Conference will give outstanding undergraduate women the opportunity to discuss their own research and to meet other women who share their interest in the mathematical sciences. Conference activities will occur on the university's city campus, a short walk from downtown Lincoln.

We will regularly update this page as plans for the conference are finalized.

Plenary Speakers:

- [Margaret Wright, New York University](#)
- [Susan Friedlander, University of Illinois at Chicago](#)

Guests:

- Claudia Polini, Notre Dame
- Alissa Crans, Loyola Marymount
- Dora Matache, University of Nebraska-Omaha
- Sandra Speiser, NSA

Invited Graduate Students:

- Dorea Vierling-Claassen, Boston University
- Carina Curto, Duke
- Emiko Dupont, SUNY-Stony Brook
- Ellen Veomett, University of Michigan
- Suanne Au, University of Nebraska

Panel Discussions:

- Going to Graduate School?
- Careers in Mathematics
- Life as a Mathematician

Friday, February 4, 2005

2:30

Welcome and Registration, Burnett 119
There will be soft drinks and snacks at the registration

3:30

Opening Session, Burnett 115
Welcome: Wendy Hines, University of Nebraska-Lincoln
Remarks: Donal Burns, Associate Vice President and Provost, University of Nebraska

3:45 - 4:45

Plenary Session I, Burnett 115
Susan Friedlander, University of Illinois at Chicago
A World of Instabilities

4:45

Break, Burnett 119

5:00

Special Session, Burnett 115

5:00 - 5:15

Sandra Speiser, National Security Agency
NSA Opportunities

5:20-5:40

Sylvia Wiegand, University of Nebraska-Lincoln
NSF Opportunities and AWM Opportunities

5:45-6:00

Murli Gupta, George Washington University
Summer Program for Women in Mathematics

6:45

Group Photo, Embassy Suites Hotel - Regency Room

7:00

Banquet, Embassy Suites Hotel - Regency Room
Remarks: Ellen Weissinger, Executive Associate Dean for Graduate Studies
Panel Discussion: *Life as a Mathematician*

Panelists: Alissa Crans, Loyola Marymount University
Susan Friedlander, University of Illinois at Chicago
Dora Matache, University of Nebraska-Omaha
Claudia Polini, University of Notre Dame
Dorea Vierling-Claasen, Boston University

Judy Walker, University of Nebraska-Lincoln
Moderator: Wendy Hines, University of Nebraska-Lincoln

Saturday, February 5, 2005

8:00

Continental Breakfast, Avery 348

8:30

Session 1 - Presentations by Undergraduate Participants
Mathematical Ecology, Avery 106 (Chair: Brigitte Tenhumberg)
Graph Theory and Coding Theory, Avery 110 (Chair: Claudia Polini)

8:30 - 8:45

Avery 106

Elizabeth Martin, University of Tennessee
Biological competition: a microcosmic view

Avery 110

Katherine Morrison, Swarthmore College
On the optimality of Huffman coding in data compression

8:50 - 9:05

Avery 106

Amber Russell, Mississippi State University
Positive solutions to a diffusive logistic equation with constant yield harvesting

Avery 110

Chloe Epstein, Ithaca College
The nature of path lengths in binary asymmetric fractal trees

9:10 - 9:25

Avery 106

Nancy Newren, University of Utah
A mathematical model of tri-trophic interactions of predator, prey/herbivore, producer

Avery 110

Margaret Doig, University of Notre Dame
Braid groups and right-angled Artin groups

9:30

Short Break, Avery 348

9:40

Panel Discussion: Going to Graduate School?, Burnett 115

Panelists: Alissa Crans, Loyola Marymount University
Carina Curto, Duke University
Susan Friedlander, University of Illinois at Chicago
Roger Wiegand, University of Nebraska-Lincoln

Moderator: Jim Lewis, University of Nebraska-Lincoln

10:40

Break, Avery 348

11:00

Session 2 - Presentations by Undergraduate Participants
Algebra, Avery 106 (Chair: Sylvia Wiegand)
Mathematical Biology, Avery 110 (Chair: Sue Geller)

11:00 - 11:15

Avery 106

Lori McDonnell, University of Akron
Properties and roots of generalized Fibonacci polynomials

Avery 110

Mihaela Krasteva, Mount Holyoke College
Mouse HIV, noisy zeros, and the singular value decomposition

11:20 - 11:35

Avery 106

Zajj Daugherty, Harvey Mudd College
An algebraic approach to voting theory

Avery 110

Jennifer Dieringer, Texas A&M University
Prediction of the first water shell of a protein

11:40 - 11:55

Avery 106

Denise Terry, University of Redlands
Extraction degree of zero sequences of finite Abelian groups

Avery 110

Tanya Kazakova, Marymount University
Mitigation strategies for a smallpox outbreak using optimal control

12:00

Lunch, Wick Alumni Center, 1520 R Street (corner of 16th & R)
Note: The plenary speakers, panelists, invited graduate students, and members of the organizing committee have agreed to sit at assigned tables so that participants can have an opportunity to talk with them informally. Check the packet of bios for table assignments.

1:30 - 2:30

Plenary Session II, Burnett 115
Margaret Wright, New York University
Adventures in Optimization

2:40

Session 3 - Presentations by Undergraduate Participants
Graph Theory and Combinatorics, Avery 106 (Chair: Sandra Speiser)
Miscellaneous, Avery 110 (Chair: Sharon Frechette)

2:40 - 2:55

Avery 106

Jackie Kaminski, Xavier University
Snark embeddings

Avery 110

Amanda Criner, University of Maine
Internet epidemiology

3:00 - 3:15

Avery 106

Gwen Spencer, Harvey Mudd College

Combinatorial consequences of LSB-related theorems

Avery 110

Ellen Gasparovic, College of the Holy Cross

Partition functions and modular forms

3:20 - 3:35

Avery 106

Jenna Hammang, Valparaiso University

The cubed colored cubes problem

Avery 110

Jennifer Leahy, Mount Holyoke College

The movement of periodic points

3:40

Poster Session, Avery 119

Snacks, Avery 348

- Modesty Briggs, California State University, Northridge
Investigating properties of Kneser graphs
- Jennifer Feder, Washington University in St. Louis
Optimizing networks: the expected value polynomial
- Jayne Linstad, Minnesota State University, Moorhead
Nonlinear least-squares analysis: confidence intervals in fluorescent lifetimes
- Abby VanHouten, Muhlenberg College
Bubbles and sprinklers: bifurcation diagrams for one-dimensional dynamical systems

4:45

Session 4 - Presentations by Undergraduate Participants

Knot Theory, Avery 106 (Chair: Alissa Crans)

Recreational Mathematics, Avery 110 (Chair: Dora Matache)

4:45 - 5:00

Avery 106

Sara Fietze, Loyola Marymount University

Knot invariants: the Alexander polynomial

Avery 110

Stephanie Kuenzel, Regis University

Solving the RUBIK'S Cube

5:00 - 5:15

Avery 106

Lucy Spardy, Duquesne University

Describing the shape of ropelength-minimized knots

Avery 110

Jackie Van Ryzin, St. Norbert College

Sumthing special: the N festivals of the season

5:40

Dinner (see Restaurant Guide)

7:30

Game Night, Embassy Suites, Alumni Room

Sunday, February 6, 2005

8:00

Continental breakfast, Avery 348

8:30

Session 5 - Presentations by Undergraduate Participants

Geometry, Avery 106 (Chair?)

Numerical Analysis, Avery 110 (Chair: Margaret Wright)

8:30 - 8:45

Avery 106

Sarah Mall, St. Edward's University

The DNA inequality for a non-convex cell

Avery 110

Laura Lynch, Florida Atlantic University

Numerical integration of linear and nonlinear wave equations

8:50 - 9:05

Avery 106

Amber Anderson, Minnesota State University – Moorhead

Conic sections with the Minkowski metric

Avery 110

Daniela Banu, Hope College

Regularizing the Volterra integral equation of the first kind

9:10 - 9:25

Avery 110

Melissa Ackerman, University of Nebraska – Lincoln

Linear algebra in the ensemble forecast method

9:10 - 9:45

Avery 106

Emily Banks, Laura Hudson, Elizabeth Miller, Carleton College

Spinning a vertex, tracing a point, how circles are made

9:45

Break, Avery 348

10:00

Panel Discussion: *Careers in Mathematics*, Burnett 115

Panelists: Dora Matache, University of Nebraska-Omaha

Claudia Polini, University of Notre Dame

Sandra Speiser, National Security Agency

Margaret Wright, New York University

Moderator: Richard Rebarber, University of Nebraska-Lincoln

11:00

Conference Wrap-up, Burnett 115

Remarks: John Meakin, Chair of the UNL Department of Mathematics