Fourth Annual
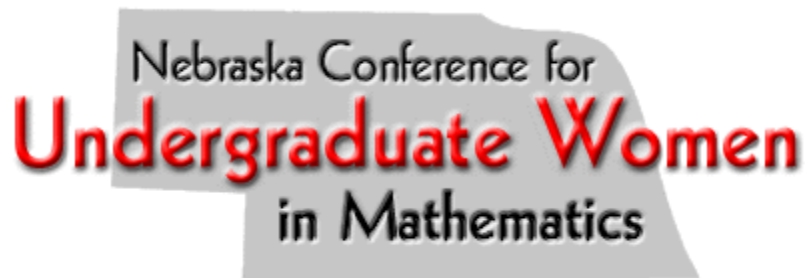
Nebraska Conference for
Undergraduate Women
in Mathematics

Conference Schedule

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.

Plenary Speakers: Dr. Rosemary Chang, Coastcom

Professor Dusa McDuff, SUNY Stony Brook

Guests:

Juliana Berg, Operations Research Analyst, ZS Associates (Chicago)

Dr. Lisa Johnson, Assistant Professor at the University of St. Thomas

Dr. Theresa Strei, National Security Agency

Dr. Amelia Taylor, VIGRE Postdoc at Rutgers University

Angela Vierling, graduate student at Boston University

Panel Discussions:

Choosing a Graduate School

Careers in Mathematics

Friday, February 1, 2002

2:30

 Welcome and Registration, Auditorium, CBA 143
 There will be soft drinks and snacks at the registration

3:30

 Opening Session, Auditorium, CBA 143
 Welcome: Judy Walker, Co-Chair of the Conference Organizing Committee
 Remarks: Harvey Perlman, Chancellor of the University of Nebraska-Lincoln

3:45

 Plenary Session I, Auditorium, CBA 143
 Dusa McDuff, State University of New York at Stony Brook
 ``My Mathematical Life"

4:45

 Break

5:00

 Session 1 - Presentations by Undergraduate Participants

CBA 025 (Chair: Sylvia Wiegand)

5:00 - 5:15

 Sarah Genoway, University of Texas-Austin
 "Integral closure of monomial ideals without embedded primes"

5:20 - 5:35

 Heather McDonough, Muhlenberg College
 ``Structure theory for root groups"

5:40 - 5:55

 Karen Kapur, University of California - Berkeley
 ``The group generated by an n-cycle and a product of two disjoint cycles, each having
 one point in common with the n-cycle"

CBA 128 (Chair: Lisa Johnson)

5:00 - 5:15

 Kelly Dickson, James Madison University
 ``Numerical computation for problems in non-linear solid mechanics with singularities"

5:20 - 5:35

 Janet Braunstein, Providence College
 ``Sequences: Sums of Cubes of Digits"

5:40 - 5:55

 Mary Lee, James Madison University
 ``Asymptotic analysis of an inward point load acting on a half-space: a nonlinearly elastic
 near-load model"

CBA 132 (Chair: Lucinda Zmarzly)

5:00 - 5:15

Amber Lee, University of Texas at Tyler
``Potential paddings for minimum coverings of Kn with fish"

5:20 - 5:35

Yumi Odama, University of California - Berkeley
``Enumeration of (0,1) and integer doubly stochastic matrices"

5:40 - 5:55

Ellen Veomett, University of Nebraska - Lincoln
``Perfect domination in Kneser graphs"

7:00

Banquet, Yankee Hill Room - Third Floor of the Cornhusker Hotel
Keynote Speaker: Theresa Strei, National Security Agency
``Women of Undercover Mathematics"

Saturday, February 2, 2002

8:00

Continental Breakfast, CBA Food Court

8:30

Session 2 - Presentations by Undergraduate Participants

CBA 025 (Chair: Mark Brittenham)

8:30 - 8:45

Jane Holsapple, Bryn Mawr College
``Invariants of Legendrian knots"

8:50 - 9:05

Katrina Keating, San Francisco State University
``The total curvature of knots"

9:10 - 9:25

Bronlyn Wassink, SUNY - Geneseo
``Colorability, Mod-p labelings, and the Alexander polynomial in knot theory"

CBA 128 (Chair: Julie Berg)

8:30 - 8:45

Stacey Stillion, Ohio Northern University
``Covariates of pancreas transplant survival in recipients of combined kidney-pancreas grafts"

8:50 - 9:05

Abby Mroczenski, St. Norbert College
``The Federalist Papers: a statistical analysis of authorship"

9:10 - 9:25

Amber Dennison, Elon University
``Making farming more interesting with math"

CBA 132 (Chair: Lisa Orlandi-Korner)

8:30 - 8:45

Rachel Esselstein, University of California - San Diego
``Dots and boxes"

8:50 - 9:05

Carmen McLean, Louisiana State University - Shreveport

``The string art problem: discovering the envelope"

9:10 - 9:25

Rachel Koskodan, Wayne State University

``Geometric Applications of a unit fraction equation"

9:30

Short Break

9:40

Panel Discussion: Careers in Mathematics, CBA 143

Panelists: Rosemary Chang, Coastcom

Sylvia Wiegand, University of Nebraska-Lincoln

Theresa Strei, National Security Agency

Lisa Johnson, University of St. Thomas

Julie Berg, ZS Associates (Chicago)

Moderator: Glenn Ledder, University of Nebraska-Lincoln

10:40

Break, CBA Food Court

11:00

Session 3 - Presentations by Undergraduate Participants

CBA 025 (Chair: Susan Hermiller)

11:00 - 11:15

Elizabeth Norton, Harvey Mudd College

``Data compression on the symmetric group"

11:20 - 11:35

Emily Putnam, San Francisco State University

``Distinctness of self-intersecting curves on the punctured n-holed torus"

11:40 - 11:55

Hoai Nam Tran, University of Nebraska - Lincoln

``The Chreier group"

CBA 143 (Chair: Theresa Strei)

11:00 - 11:15

Sharon Chuba, Penn State University

``Pressureless incompressible Euler flow in 2D with no external forces"

11:20 - 11:35

Shazia Khan, California State University - Fullerton

``A mathematical model for jaundice and its treatments"

11:40 - 11:55

Angela Ortiz, Terannie Vazquez, Universidad Metropolitana
Beverly Gonzalez, University of Illinois
``Am I too fat?: Bulimia as an epidemic"

12:00

Lunch, Wick Alumni Center, 1520 ``R" Street (corner of 16th & ``R")

1:30

Plenary Session II, Auditorium, CBA 143
Rosemary Chang, Coastcom
``Mathematics in Industry: What Matters"

2:30

Short Break

2:40

Session 4 - Presentations by Undergraduate Participants

CBA 025 (Chair: Katherine Kime)

2:40 - 2:55

Libby Beer, University of Nebraska
``Food Chain Chaos!"

3:00 - 3:15

Sharon Blatt, Elon University
``RISKy business"

CBA 143 (Chair: Roger Wiegand)

2:40 - 2:55

Ellen Eischen, Princeton University
``Rational points on elliptic curves"

3:00 - 3:15

Anne Short, Harvey Mudd College
``Elliptic curves and L-functions"

3:20

Short Break

3:30

CBA 143 Panel Discussion: Choosing a Graduate School

Panelists: Dusa McDuff, SUNY Stony Brook

Amelia Taylor, Rutgers University

Angela Vierling, Boston University

Lisa Johnson, University of St. Thomas

Theresa Strei, National Security Agency

Roger Wiegand, University of Nebraska-Lincoln

Moderator: Mark Walker, University of Nebraska-Lincoln

4:30

Break, CBA Food Court

4:50

Session 5 - Presentations by Undergraduate Participants

CBA 025 (Chair: Julie Berg)
4:50 - 5:05
>Steffany Belcher-Novosad, Arkansas State University
>``Minimum G-aberration designs from Hadamard matrices of order 28"
5:10 - 5:25
>Brooke Rohde, United States Military Academy
>``Using RGB stereo sensor fusion to enhance depth and volume perception"
5:30 - 5:45
>Jodie Jansen, Luther College
>``Analysis of adolescent obesity and nutritional behaviors using chi-squared and correlation tests"

CBA 143 (Chair: Jamie Radcliffe)
4:50 - 5:05
>LeeAnn Feathers, University of the Pacific
>``Embedding complete graphs onto triangular grids"
5:10 - 5:25
>Zhou Dong, Carnegie Mellon University
>``Probability on polynomials over finite fields"
5:30 - 5:45
>Gadalia Weinberg, University of Colorado
>``Quaternary codes"
5:50
>Dinner (see Restaurant Guide)
7:30
>Game Night, Arbor Room, Lower Level of the Cornhusker Hotel Hosted by Women's Undergraduate Math Network

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Sunday, February 3, 2002

8:30
>Continental breakfast, CBA Food Court
9:00
>Session 6 - Presentations by Undergraduate Participants
CBA 025 (Chair: Amelia Taylor)
9:00 - 9:15
>Brenda Johnson, South Dakota State University
>``Disjunctive Rado numbers"
9:20 - 9:35

Miyuki Breen, The University of Akron
``Finding the area of fractal tilings"

9:40 - 9:55

Coral Wheeler, University of Akron
``Burnside's Lemma, theory and applications"

CBA 143 (Chair: Kirsten Messer)

9:00 - 9:15

Julia Arciero, University of Michigan
``A mathematical model of tumor evasion of immune surveillance"

9:20 - 9:35

Dorea Claassen, University of Nebraska - Lincoln
``Convex hull analysis of protein/DNA complexes"

9:40 - 9:55

Melanie Lee, UCLA
``Modeling the combination of cytotoxic and antiangiogenic agents in the treatment of cancer using a compartmental model"

10:00

Break, CBA Food Court

10:20

Session 7 - Presentations by Undergraduate Participants

CBA 025 (Chair: Martha Gregg)

10:20 - 10:35

Jill Schmidt, St. Norbert College
``Angular distribution beam studies of He* + CH4"

10:40 - 10:55

Dawn Ashley, Kalamazoo College
``An introduction to invariant theory via the calculation of Z2[x1,x2,x3]Z7"

CBA 143 (Chair: Wendy Hines)

10:20 - 10:35

Dorothy Moorefield, Appalachian State University
``Effects of ozone on the spatial components of plant cells"

10:40 - 10:55

Ellen Panofsky, Millersville University
``Circularity of circulant graphs"

11:00

Conference Wrap-up, CBA 143 Remarks: Jim Lewis, Chair of the UNL Department of Mathematics and Statistics