# Friday, January 31, 2014

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
</table>
| 1:00 pm – 3:15 pm | Registration, Snacks & Campus Tours  
*Snacks will be provided. Campus tours meet in the lobby from 3:00 pm to 3:30 pm.* | Atrium and Lobby, Embassy Suites               |
| 3:40 pm – 6:05 pm | Conference Opening Session  
Christine Kelley, Associate Professor of Mathematics and Co-Chair of NCUWM, University of Nebraska-Lincoln  
Ellen Weissinger, Senior Vice Chancellor, Academic Affairs, University of Nebraska-Lincoln  
Judy Walker, Professor and Chair, Department of Mathematics, University of Nebraska-Lincoln  
1st Plenary Talk: *From Disorder to Order: How a Mathematician Sees Life and Work*  
Gigliola Staffilani, MIT  
Panel Discussion: *Careers Using Mathematics*  
**Moderator:** Petronela Radu, University of Nebraska-Lincoln  
**Panelists:** Lipi Acharya, Dow AgroSciences  
Sara Blight, National Security Agency  
Heidi Burnett, Mercer  
Pallavi Dani, Louisiana State University  
Jennifer Davis, Rockwell Collins  
Elin Smith, Kenyon College | Auditorium  
Second Floor, Nebraska Union |
| 7:00 pm      | Banquet & Panel Discussion: *Random Bits of Advice*  
**Moderator:** Judy Walker, University of Nebraska-Lincoln  
**Panelists:** Raegan Higgins, Texas Tech University  
Karin Melnick, University of Maryland  
Cynthia Phillips, Sandia National Laboratories  
Gigliola Staffilani, MIT | Regents Ballroom BCDEF, Embassy Suites |
# Nebraska Conference for Undergraduate Women in Mathematics

## Saturday, February 1, 2014

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am – 8:00 am</td>
<td>Breakfast</td>
<td>Atrium, Embassy Suites</td>
</tr>
</tbody>
</table>

*Poster presenters in Session A should set up their posters at this time in Regents Ballroom A. Velcro tape will be provided.*

### Session 1 – Presentations by Undergraduate Students

<table>
<thead>
<tr>
<th>Time</th>
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</table>
| 8:10 am – 8:25 am | Comparing Methods for Classifying Open Knots  
Elizabeth Annoni and Nicole Lopez, University of St. Thomas | Regents Ballroom - B, Embassy Suites          |
| 8:10 am – 8:25 am | Periodicity of Third-Order Linear Recursive Sequences  
Shan Shan, Agnes Scott College | Regents Ballroom - C, Embassy Suites          |
| 8:10 am – 8:25 am | Functional Dependence Between Boolean Variables  
Meg Protzman, McDaniel College | Regents Ballroom - F, Embassy Suites          |
| 8:30 am – 8:45 am | Light Propagation in Low Scattering Regions of Tissue  
Alisha Cardanini, University of California, Merced | Embassy Suites                                 |
| 8:30 am – 8:45 am | An Algebraic Approach to Tile Invariants  
Amanda Bright, Westminster College | Embassy Suites                                 |
| 8:30 am – 8:45 am | Solving Systems of Equations Using Groebner Bases  
Kelsey Swerdleger, Concordia University Irvine | Embassy Suites                                 |
| 8:50 am – 9:05 am | Inferring Authorship Through Myers-Briggs Type Inventory and Naive Bayes  
Elizabeth DeCarlo, Duquesne University | Embassy Suites                                 |
| 8:50 am – 9:05 am | Avoiding Permutation Patterns in Ordered Set Partitions  
Stephanie DeGraaf, Iowa State University and Julia Yuan, Valparaiso University | Embassy Suites                                 |
| 8:50 am – 9:05 am | Analyzing Databases for Patterns in Customer Usage for a Company  
Brittany Street, Missouri State University | Embassy Suites                                 |
| 9:10 am – 9:25 am | Sonification of EEGs  
Kate Ehnis and Stacy Philip, Texas Tech University | Embassy Suites                                 |
| 9:10 am – 9:25 am | The Krasnosel’skii Zero Theorem  
Yaxi Gao, Harvey Mudd College | Embassy Suites                                 |
| 9:10 am – 9:25 am | The Algebra of Block Permutations  
Isabel Corona, Metropolitan State University of Denver | Embassy Suites                                 |
| 9:30 am – 9:45 am | Mathematical Modeling of Social Dynamics with Applications to Real-World Problems  
Deborah Koch, Sam Houston State University | Embassy Suites                                 |
| 9:30 am – 9:45 am | Predicting Atlantic Sun Volleyball Tournament Outcomes  
Elizabeth Knapper, Mercer University | Embassy Suites                                 |
| 9:30 am – 9:45 am | Exploring Recommender Systems  
Alecia Lambert, Western State Colorado University | Embassy Suites                                 |

### Panel Discussion:

**Choosing a Mathematics Graduate Program**

**Moderator:**
Susan Hermiller, University of Nebraska-Lincoln

**Panelists:**
- Holly Attenborough, Indiana University, Bloomington
- Samantha Erwin, Virginia Tech
- Rebecca (Rodger) Everett, Arizona State University
- Lauren Keough, University of Nebraska-Lincoln
- Kelly McQuighan, Brown University
- Chelsea Weaver, University of California, Davis

<table>
<thead>
<tr>
<th>Time</th>
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</thead>
</table>
| 10:50 am – 11:15 am | Conference Photo  
*If you did not sign a photo release statement, please do not participate in the group photo.* | Outside (if bad weather: in Atrium, Embassy Suites) |
### Session 2 – Presentations by Undergraduate Students

<table>
<thead>
<tr>
<th>Time</th>
<th>Regents Ballroom - B</th>
<th>Regents Ballroom - C</th>
<th>Regents Ballroom - F</th>
</tr>
</thead>
</table>
| 11:15 am – 11:30 am | Using Mathematics to Investigate Integrin Activation in Inhibited Cell Migration  
Lauren Lembcke, Indiana University  
Purdue University Indianapolis | The Generalized Symmetric Tequila Problem: Influence and Independence in Symmetric N-Player Games  
Denali Molitor, Colorado College | A Symmetric Breakfast: Automorphism Groups of Compact Riemann Surfaces  
Casey Pinckney, Seattle University |
| 11:35 am – 11:50 am | Modeling Positions Coupled to F508, Site of Chief CF Causing Mutation  
Saba Nafees, Texas Tech University | Colored-Independence  
Sarah Lange, College of Saint Benedict | A Factorization of Temperley-Lieb Diagrams  
Sarah Salmon, Northern Arizona University |
| 11:55 am – 12:10 pm | Mathematical Modeling of Multi-Focal Brain Tumors  
Ashley Webber, Arizona State University | Distinguished-Color Rainbow Connection in Graphs  
Katherine Boligitz, La Salle University | The Broken Ptolemy Algebra: A Finite-Type Laurent Phenomenon Algebra  
Abby Stevens, Grinnell College |
| 12:15 pm – 12:30 pm | A Genome-wide Association Study of Glaucoma and Age-related Macular Degeneration  
Hailee Reist, Warburg College | Recent Developments Concerning Two Conjectures by Frucht  
Alessandra Graf, Northern Arizona University | Launching into Problem-Based Lessons  
Hannah Guth, Marquette University |

**Lunch for Undergraduates**  
Please see restaurant list in your registration materials. If you’d like to go with a group, meet in the hotel lobby by 12:50 pm.

**Faculty Professional Development Luncheon**  
Meal choice was selected in online registration.

<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 pm – 3:00 pm</td>
<td>Regents Ballroom A, Embassy Suites</td>
<td>Poster presenters will be available to discuss their posters.</td>
</tr>
</tbody>
</table>
| 3:10 pm – 4:05 pm | Regents Ballroom BC, Embassy Suites | 2nd Plenary Talk:  
Sensor Placement for Municipal Water Networks  
Cynthia Phillips, Sandia National Laboratories |

**Snack Break**  
Pre-Convention Area, Embassy Suites

### Session 3 – Presentations by Undergraduate Students

<table>
<thead>
<tr>
<th>Time</th>
<th>Regents Ballroom - B</th>
<th>Regents Ballroom - C</th>
<th>Regents Ballroom - F</th>
</tr>
</thead>
</table>
| 4:30 pm – 4:45 pm | Hospital Charge Function Estimation and Study of Some Interactions: A Case Study of Diabetes  
Alison Smith, Xavier University | A Combinatorial Approach to the Meunier-Babson Theorem  
Elizabeth Kelley, Harvey Mudd College | BVP: The Unified Transform Method vs. Separation of Variables  
Uyen Le, Seattle University |
| 4:50 pm – 5:05 pm | An Exploration of Food Webs Through Graph Theory  
Lindsey Smith, University of Wisconsin-Madison | Trees of Irreducible Numerical Subgroups  
Taryn Laird, Northern Arizona University | Long-Term Behavior of Solutions to a Nonlinear Wave Equation  
Elizabeth Galvin, Marist College |
| 5:10 pm – 5:25 pm | Computational Modeling of Glioblastoma Multiforme  
Lena Snyder, Arizona State University | 2-tone Colorings in the Direct Product of Graphs  
Jennifer Loe, Oklahoma Christian University | Solvability of Linear Nonhomogeneous Second-Order Two-Point Boundary Value Problems  
Daria Drozdova, Pomona College |
5:35 pm – 6:15 pm  Breakout Session 1
Undergraduates have been assigned to breakouts. Please find your tickets at the back of your nametag. Faculty and graduate students are welcome to attend any of the breakout sessions or have been asked to facilitate a session. See the registration desk to confirm breakout facilitation assignments.*

Alumni Room,
Regents D, E or F,
Chancellor’s Rooms 1, 2, 3,
P Street Dining Area,
Embassy Suites

6:20 pm – 7:00 pm  Breakout Session 2
Undergraduates have been assigned to breakouts. Please find your tickets at the back of your nametag. Faculty and graduate students are welcome to attend any of the breakout sessions or have been asked to facilitate a session. See the registration desk to confirm breakout facilitation assignments.*

Alumni Room,
Regents D, E or F,
Chancellor’s Rooms 1, 2, 3,
Embassy Suites

7:00 pm – 7:15 pm  Poster Session A Takedown
If you presented a poster in Session A, please pick it up before the Pizza Dinner.

Regents Ballroom A,
Embassy Suites

7:15 pm  Pizza Dinner
Note to undergraduates: Table assignments for conference guests are featured in your bio packet. Please put your nametag on your seat before getting in the buffet line and allow table hosts to jump to the front of the line. Be prepared to switch tables during the meal to maximize networking opportunities.

Regents Ballroom BC,
Embassy Suites

* Breakout Session Tickets: If you would like to attend different breakout sessions than you chose in your online registration, please come to the conference registration desk to switch your tickets with any extras that are available. During Breakout Session 3 on Sunday, another breakout called “Writing a CV/Resume” also will be an option, and those tickets will be at the registration desk.

Please Note:
Checkout time on Sunday is 1:00 pm.

If you are flying out of Lincoln:
Hotel shuttles to the airport depart on the hour, and every half hour as needed. Please be sure to let the front desk staff know when you need to depart. The typical amount of time needed to arrive at the Lincoln airport is 1 hour and 15 minutes prior to flight departure.

If you are flying out of Omaha:
Allow at least an hour of drive time to the airport (weather permitting) and an additional 1 hour and 15 minutes prior to flight departure. If you are using OMALiNK, they should have scheduled this with you.
# Sunday, February 2, 2014

<table>
<thead>
<tr>
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<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am – 8:00 am</td>
<td><strong>Breakfast</strong>&lt;br&gt;Poster presenters in Session B should set up their posters at this time in Regents Ballroom A. Velcro tape will be provided.</td>
<td>Atrium, Embassy Suites</td>
</tr>
<tr>
<td>8:10 am – 8:25 am</td>
<td><strong>Session 4 – Presentations by Undergraduate Students</strong>&lt;br&gt;Regents Ballroom - B Embassy Suites&lt;br&gt;Fuse-Analyze Versus Analyze-Fuse&lt;br&gt;Lauren Crider, Arizona State University</td>
<td>Regents Ballroom - EF Embassy Suites&lt;br&gt;The Loewner Equation Driven by the Weierstrass Function&lt;br&gt;Jessica Robins, University of Tennessee Knoxville</td>
</tr>
<tr>
<td>8:30 am – 8:45 am</td>
<td><strong>Functional Dependence in Strategic Games</strong>&lt;br&gt;Kristine Harjes, McDaniel College&lt;br&gt;<strong>The Loewner Equation Driven by the Weierstrass Function</strong>&lt;br&gt;Jessica Robins, University of Tennessee Knoxville</td>
<td>Regents Ballroom - C Embassy Suites&lt;br&gt;View Equality and the Equal Sign&lt;br&gt;Laura Ramm, Benedictine College</td>
</tr>
<tr>
<td>8:55 am – 9:35 am</td>
<td><strong>Breakout Session 3</strong>&lt;br&gt;Undergraduates have been assigned to breakouts. Please find your tickets at the back of your nametag. Faculty and graduate students are welcome to attend any of the breakout sessions or have been asked to facilitate a session. See the registration desk to confirm breakout facilitation assignments.*&lt;br&gt;Alumni Room, Regents D or EF, Chancellor’s Rooms 1, 2, 3, Embassy Restaurant, P Street Dining Area, Embassy Suites</td>
<td>&lt;br&gt;<strong>Poster Session B</strong>&lt;br&gt;Poster presenters will be available to discuss their posters. Snacks available at this time. Embassy Suites</td>
</tr>
<tr>
<td>9:35 am – 10:15 am</td>
<td><strong>Session 5 – Presentations by Undergraduate Students</strong>&lt;br&gt;Regents Ballroom - B Embassy Suites&lt;br&gt;The Impact of Perturbations on Biochemical Signal Transduction Networks&lt;br&gt;Laura Allen, University of Nebraska at Omaha</td>
<td>Regents Ballroom - B Embassy Suites&lt;br&gt;The Distribution of the Greatest Common Divisor of Gaussian Integers&lt;br&gt;Tai-Danae Bradley, The City College of New York</td>
</tr>
<tr>
<td>10:20 am – 10:35 am</td>
<td><strong>Bar Code Localization in Images Using Neural Network and Linear Discriminant Analysis Frameworks</strong>&lt;br&gt;Mikaela Cashman, Coe College</td>
<td>Regents Ballroom - C Embassy Suites&lt;br&gt;The Role of Inhibition on Dynamics in Clustered Networks&lt;br&gt;Aubrey Thompson, University of Nebraska-Lincoln</td>
</tr>
<tr>
<td>10:40 am – 10:55 am</td>
<td><strong>Applying the Bracket Polynomial to Multi-Crossing Projections</strong>&lt;br&gt;Samantha Petti, Williams College</td>
<td>Regents Ballroom - EF Embassy Suites&lt;br&gt;Ranking Math Departments Using the Google PageRank Algorithm&lt;br&gt;Teresa Ratafshet, University of Oklahoma</td>
</tr>
<tr>
<td>11:00 am – 11:15 am</td>
<td><strong>Knot Mosaics and Hextiling</strong>&lt;br&gt;Sarah Renfro, Sam Houston State University</td>
<td>Regents Ballroom - C Embassy Suites&lt;br&gt;Factorization Properties of Leamer Monoids&lt;br&gt;Aleesha Moran, McKendree University</td>
</tr>
<tr>
<td>11:20 am – 11:30 am</td>
<td><strong>Closing Remarks</strong>&lt;br&gt;Christine Kelley, University of Nebraska-Lincoln&lt;br&gt;Glenn Ledder, University of Nebraska-Lincoln</td>
<td>Regents Ballroom BC, Embassy Suites</td>
</tr>
<tr>
<td>11:30 am – 11:40 am</td>
<td><strong>Poster Session B Takedown</strong>&lt;br&gt;If you presented a poster in Session B, please pick it up before you check out.</td>
<td>Regents Ballroom A, Embassy Suites</td>
</tr>
</tbody>
</table>