## Friday, January 29, 2016

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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</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  
Judy Walker, Professor and Chair, Department of Mathematics, University of Nebraska-Lincoln | Auditorium  
Second Floor, Nebraska Union                   |
|               | 1st Plenary Talk: *How Does Applied Math Become Applicable?*  
Emina Soljanin, Rutgers University |                                                |
|               | **Panel Discussion: Careers Using Mathematics**  
**Moderator:**  
Matthew Douglass, National Science Foundation  
**Panelists:**  
Lynn Apfel, Department of Defense  
Lorena Bociu, North Carolina State University  
Johanna Franklin, Hofstra University  
Srisuda Holay, Lincoln Public Schools  
Cristina Polizu, Standard and Poor's  
Emilie Purvine, Pacific Northwest National Laboratory |                                                |
| 7:00 pm       | **Banquet & Panel Discussion:**  
*Random Bits of Advice*  
**Moderator:**  
Adam Larios, University of Nebraska-Lincoln  
**Panelists:**  
Alejandra Alvarado, Eastern Illinois University  
Emina Soljanin, Rutgers University  
Abigail Thompson, University of California, Davis | Regents Ballroom BCDEF, Embassy Suites          |
# 2016 Nebraska Conference for Undergraduate Women in Mathematics

## Saturday, January 30, 2016

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
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<tbody>
<tr>
<td>7:00 am – 8:00 am</td>
<td>Breakfast</td>
<td>Atrium, Embassy Suites</td>
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<tr>
<td></td>
<td><em>Poster presenters in Session A should set up their posters at this time in Regents Ballroom A. Velcro tape will be provided.</em></td>
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<tr>
<td>8:10 am – 8:25 am</td>
<td><strong>Session 1 – Presentations by Undergraduate Students</strong></td>
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<td></td>
<td><strong>Regents Ballroom - B</strong></td>
<td><strong>Regents Ballroom - C</strong></td>
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<td></td>
<td><strong>Regents Ballroom - F</strong></td>
<td><strong>Embassy Suites</strong></td>
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<tr>
<td>8:10 am – 8:25 am</td>
<td>Perfect Numbers in the Eisenstein Integers</td>
<td>Detecting Foot-Chases from Police Body-Worn Video</td>
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<td>Jordan Hunt, Northern Arizona University</td>
<td>Qi Yang, University of Southern California</td>
</tr>
<tr>
<td>8:30 am – 8:45 am</td>
<td>An Investigation into Some Covers of Finite Spaces</td>
<td>Random Visibility in Unit Bars</td>
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<tr>
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<td>Adele Padgett, University of Chicago</td>
<td>Jiarui Chu, Davidson College</td>
</tr>
<tr>
<td>8:50 am – 9:05 am</td>
<td>Comparing Methods of Identifying Knotting Behavior in Open Chains</td>
<td>Differential Outcomes by SES in Children Undergoing Treatment for Acute Lymphoblastic Leukemia</td>
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<td>Erin Brine-Doyle and Emily Vecchia, University of St. Thomas</td>
<td>Emily Roberts, Coe College</td>
</tr>
<tr>
<td>9:10 am – 9:25 am</td>
<td>Lattice Point Visibility on Generalized Lines of Sights</td>
<td>Survival Analysis Dimension Reduction Techniques: A Comparison of Select Methods</td>
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<tr>
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<td>Sara DeBrabander and Michelle Gebert, University of Wisconsin-Eau Claire</td>
<td>Claressa Ullmayer, University of Alaska Fairbanks</td>
</tr>
<tr>
<td>9:30 am – 9:45 am</td>
<td>A Permutation Test for the Spread of Three-Dimensional Rotation Data</td>
<td>ETF-Based Models for Liquidity Risk</td>
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<td>Marissa Eckrote, University of Wisconsin-La Crosse</td>
<td>Zoe Rehnberg, Washington University in St. Louis</td>
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<td>Consensus vs. Fragmentation in a Model of Opinion Dynamics</td>
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<td>Ratna Khatri, George Mason University</td>
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<tr>
<td>Time</td>
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<tr>
<td>9:50 am – 10:50 am</td>
<td>Panel Discussion:</td>
<td>Regents Ballroom BC, Embassy Suites</td>
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<tr>
<td></td>
<td><em>Choosing a Mathematics Graduate Program</em></td>
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<td><strong>Moderator:</strong></td>
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<td></td>
<td>Nathan Wakefield, University of Nebraska-Lincoln</td>
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<td><strong>Panelists:</strong></td>
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<td></td>
<td>Jessalyn Bolkema, University of Nebraska-Lincoln</td>
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<td>Sutthirut Charoenphon, University of Memphis</td>
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<td>Katie McKeon, Rutgers University</td>
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<td>Rebecca R.G., University of Michigan</td>
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<td>Emily Sergel Leven, University of California, San Diego</td>
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<td>Ola Sobieska, Texas A&amp;M University</td>
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<tr>
<td>10:50 am – 11:15 am</td>
<td>Conference Photo</td>
<td>Outside (if bad weather: in Atrium, Embassy Suites)</td>
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<tr>
<td></td>
<td><em>If you did not sign a photo release statement, please do not participate in the group photo.</em></td>
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</tr>
<tr>
<td>11:15 am – 11:30 am</td>
<td><strong>Session 2 – Presentations by Undergraduate Students</strong></td>
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<td></td>
<td><strong>Regents Ballroom - B</strong></td>
<td><strong>Regents Ballroom - C</strong></td>
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<td><strong>Embassy Suites</strong></td>
<td><strong>Embassy Suites</strong></td>
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<tr>
<td></td>
<td><strong>Ranking Methods for Multi-Player Competitions</strong></td>
<td><strong>New Caprime Vertex Labelings</strong></td>
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<tr>
<td></td>
<td>Sarah Chehade, University of Houston</td>
<td>Hannah Prawzinsky, Northern Arizona University</td>
</tr>
<tr>
<td>11:35 am – 11:50 am</td>
<td><strong>On the Catenary Degree of Numerical Monoids Generated by a Generalized Arithmetic Sequence</strong></td>
<td><strong>Classification of Skew Sturmian Sequences</strong></td>
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<td></td>
<td>Rachel Domagalski, Central Michigan and Dana Lacey, North Central College</td>
<td>Sara Stover, Mercer University</td>
</tr>
<tr>
<td>11:55 am – 12:10 pm</td>
<td><strong>Pushing the Bounds of Numerical Ranges</strong></td>
<td><strong>Level Curves of a Real Algebraic Function: A Generalization of a Theorem of Pólya</strong></td>
</tr>
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<td>Rayanne Luke, State University of New York at Geneseo</td>
<td>Sarah Hilsman, Hope College</td>
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<td><strong>Numerical Results for the IVP to the Burgers Equation with External Forces</strong></td>
<td><strong>Integrating Fish Movement in Multispecies Population Modeling</strong></td>
</tr>
<tr>
<td>12:15 pm – 12:30 pm</td>
<td><strong>The Relationship Between a Ring and its Completion</strong></td>
<td><strong>Applying Finite Element Method in Reservoir Simulation</strong></td>
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<td>Sarah Fleming and Nina Pande, Williams College</td>
<td>Yilin Jiang, University of Oklahoma</td>
</tr>
<tr>
<td></td>
<td><strong>Integrating Fish Movement in Multispecies Population Modeling</strong></td>
<td>China Mauck, Grinnell College</td>
</tr>
</tbody>
</table>
**12:40 pm – 2:00 pm**  
**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.*

**2:00 pm – 3:00 pm**  
**Poster Session A**  
*Poster presenters will be available to discuss their posters.*

**3:10 pm – 4:05 pm**  
**2nd Plenary Talk:**  
*Understanding 3-Dimensional Spaces*  
Abigail Thompson, University of California, Davis

**4:15 pm – 4:25 pm**  
**Snack Break**

**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 | Generalization of the Eulerian Numbers and Multiplex Juggling Sequences  
Esther Banaian, College of Saint Benedict | On the Topology of the Space of Coverings  
Shuchi Agrawal, Brown University | Mathematical Modeling, Dynamics, and Simulation of Search and Rescue Operations through UAVs  
Kathleen McLane, George Mason University |
| 4:50 pm – 5:05 pm | Row Standard Young Tableaux: The Two-Row Case  
Priyanka Prasad, Butler University | Characterizing the Geometry and Topology of RNA Junctions  
Christine Wiersma, Alma College | A Study of Youngstown Public Housing Program Participants’ Preferences  
Ashley Orr, Youngstown State University |
| 5:10 pm – 5:25 pm | Unique Hamiltonicity and Computational Algebraic Geometry  
Monica Busser, Youngstown State University | The Math Behind Art Designs  
Stina Nyhus, Utah Valley University | Mathematically Modeling Cancer Metastasis Through Mechanical Properties  
Sruti Prathivadhi, Creighton University |
<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>5:35 pm – 6:15 pm</td>
<td>Breakout Session 1&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.*</td>
<td>Alumni Room, Regents D, E or F, Chancellor’s Rooms 1, 2, 3, P Street Dining Area, Embassy Suites</td>
</tr>
<tr>
<td>6:20 pm – 7:00 pm</td>
<td>Breakout Session 2&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.*</td>
<td>Alumni Room, Regents D, E or F, Chancellor’s Rooms 1, 2, 3, P Street Dining Area, Embassy Suites</td>
</tr>
<tr>
<td>7:00 pm – 7:15 pm</td>
<td>Poster Session A Takedown&lt;br&gt;If you presented a poster in Session A, please pick it up before the Pizza Dinner.</td>
<td>Regents Ballroom A, Embassy Suites</td>
</tr>
<tr>
<td>7:15 pm</td>
<td>Pizza Dinner&lt;br&gt;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 please allow table hosts to jump to the front of the line. Be prepared to switch tables during the meal to maximize networking opportunities.</td>
<td>Regents Ballroom BC, Embassy Suites</td>
</tr>
</tbody>
</table>

* 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.

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, January 31, 2016

<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><strong>Breakfast</strong>&lt;br&gt;&lt;em&gt;Poster presenters in Session B should set up their posters at this time in Regents Ballroom A. Velcro tape will be provided.&lt;/em&gt;</td>
<td>Atrium, Embassy Suites</td>
</tr>
<tr>
<td>8:00 am – 10:15 am</td>
<td><strong>Session 4 – Presentations by Undergraduate Students</strong>&lt;br&gt;&lt;br&gt;8:10 am – 8:25 am</td>
<td>Embassy Suites</td>
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<td>&lt;em&gt;Involution Subword Complexes in Coxeter Groups&lt;/em&gt; Lilly Webster, Grinnell College</td>
<td>Embassy Suites</td>
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<td>&lt;em&gt;The First Subconstituent of a Strongly Regular Graph&lt;/em&gt; Megan Roddie, Sam Houston State University</td>
<td>Embassy Suites</td>
</tr>
<tr>
<td>8:30 am – 8:45 am</td>
<td>&lt;em&gt;K-forcing in Neurodegenerative Disease Spread&lt;/em&gt; Courtney Cochrane, Davidson College</td>
<td>Embassy Suites</td>
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<td>&lt;em&gt;Properties of the Roots of Tribonacci-type Polynomials&lt;/em&gt; Huei Sears, Michigan State University</td>
<td>Embassy Suites</td>
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<td></td>
<td>&lt;em&gt;Modeling in Ecology: Simulating the Reintroduction of the Extinct Passenger Pigeon&lt;/em&gt; Alanna Riederer, University of Central Oklahoma</td>
<td>Embassy Suites</td>
</tr>
<tr>
<td>8:55 am – 9:35 am</td>
<td><strong>Breakout Session 3</strong>&lt;br&gt;&lt;em&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 they have been asked to facilitate a session. See the registration desk to confirm breakout facilitation assignments.*&lt;/em&gt;</td>
<td>Alumni Room, Regents D, E or F, Chancellor’s Rooms 1, 2, 3, Embassy Restaurant, Embassy Suites</td>
</tr>
<tr>
<td>9:35 am – 10:15 am</td>
<td><strong>Poster Session B</strong>&lt;br&gt;&lt;em&gt;Poster presenters will be available to discuss their posters. Snacks available at this time.&lt;/em&gt;</td>
<td>Embassy Suites</td>
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</tbody>
</table>
### Session 5 – Presentations by Undergraduate Students

<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
<th>Presentation Title</th>
<th>Speaker</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:20 am – 10:35 am</td>
<td>Regents Ballroom - B Embassy Suites</td>
<td><strong>Collaboration: A Mathematical and Medical Partnership</strong></td>
<td>Kate Causey, Furman University</td>
<td>Furman University</td>
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<td><strong>A Game Theory Approach to the Cost-Benefit Analysis of a Public versus Private University Degree</strong></td>
<td>Emily Stark, Austin Peay State University</td>
<td>Austin Peay State University</td>
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<td><strong>The Territorial Raider Model with Strategic Movement and Multi-Group Interactions</strong></td>
<td>Nina Galanter, Grinnell College</td>
<td>Grinnell College</td>
</tr>
<tr>
<td>10:40 am – 10:55 am</td>
<td>Regents Ballroom - C Embassy Suites</td>
<td><strong>Fairness in an Agent-Based Evolutionary Game</strong></td>
<td>Qianru Zhu, Penn State University</td>
<td>Penn State University</td>
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<td><strong>Cycles in Various Nonlinear, Age-Structured Population Models</strong></td>
<td>Melissa Theobald, Northern Arizona University</td>
<td>Northern Arizona University</td>
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<tr>
<td>11:00 am – 11:10 am</td>
<td>Regents Ballroom - EF Embassy Suites</td>
<td><strong>Closing Remarks</strong></td>
<td>Christine Kelley, University of Nebraska-Lincoln</td>
<td>University of Nebraska-Lincoln</td>
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<td><strong>Glenn Ledder, University of Nebraska-Lincoln</strong></td>
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<tr>
<td>11:10 am – 11:30 am</td>
<td>Regents Ballroom A, Embassy Suites</td>
<td><strong>Poster Session B Takedown</strong></td>
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*If you presented a poster in Session B, please pick it up before you check out.*

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**Evaluation Survey**

The evaluation survey for the Nebraska Conference for Undergraduate Women in Mathematics is being conducted by the conference evaluator, Dr. John Sutton, and RMC Research Corporation, located in Denver, Colorado. The survey is intended to help the conference planning committee and evaluators understand what worked well, what participants gained from participating in the conference, and what might be enhanced in order to make any future conferences more useful and beneficial for participants. Questions gather information on your perceptions on whether goals were met, your satisfaction with different facets of the sessions, opportunities to network, conference logistics, what you were able to take away from the conference, and your recommendations.

The survey does not collect identifying information. You will be asked to create a unique number that will only be used to track responses. Data from the survey will be seen by conference organizers and the conference evaluators, and may be used to plan future conferences. The information collected will be incorporated into conference reports, which will be publicly available. However, no individual identifying information will be published in any reports.

An email message will be forthcoming from the external evaluation team with a link to the survey. However, if you wish to take the survey sooner, please feel free to enter the following URL into your web browser or scan the QR code. Thanks for your consideration and participation in the conference evaluation survey.