Jessica C. De Silva  
Department of Mathematics · University of Nebraska–Lincoln  
Curriculum Vitae  

Education  

Ph.D. in Mathematics  
University of Nebraska–Lincoln  
Dissertation Topic: Graphs with Few Spanning Substructures  
Adviser: Jamie Radcliffe  
Expected: May 2018  

M.S. in Mathematics  
University of Nebraska–Lincoln  
December 2014  

B.A. in Mathematics  
California State University, Stanislaus  
May 2013  

Research Interests  
Discrete mathematics; in particular, extremal problems in graph theory.  

Publications  

(Co-authors who are undergraduates are underlined.)  

Turán Numbers of Vertex-Disjoint Cliques in $r$-Partite Graphs  
Discrete Mathematics Volume 341, Issue 2 (2017). J. De Silva, K. Heysse, A. Kapilow, A. Schenfisch, M. Young.  
https://authors.elsevier.com/a/1W53-,H-cBBFY  

Increasing Paths in Edge-Ordered Graphs: The Hypercube and Random Graph  
The Electronic Journal of Combinatorics Volume 23, Issue 2 (2016). J. De Silva, T. Molla, F. Pfender, T. Retter, M. Tait.  
http://www.combinatorics.org/ojs/index.php/eljc/article/view/v23i2p15  

On the Distance Spectra of Graphs  
Linear Algebra and Its Applications Volume 497, (2016), 66–87. G. Aalipour, A. Abiad, Z. Berikkyzy, S. Butler, J. Cummings, J. De Silva, W. Gao, K. Heysse, L. Hogben, F. Kenter, J. Lin, M. Tait.  
http://arxiv.org/abs/1509.01196  

Hat-Guessing Strategies and the Cooperative Card Game Hanabi  
Mathematics Magazine, Volume 88, No. 5 (2015), pp. 323-336. C. Cox, J. De Silva, P. DeOrsey, F. Kenter, T. Retter, R.J. Tobin.  
http://www.jstor.org/stable/10.4169/math.mag.88.5.323  

The Combinatorics of Interval Vector Polytopes  
The Electronic Journal of Combinatorics, Volume 20 Issue 3 (2013). J. De Silva, G. Dorfsman-Hopkins, J. Pruitt, A. Ruiz, M. Beck.  
http://www.combinatorics.org/ojs/index.php/eljc/article/view/v2013p22  

The Alignment of Arbitrary Contours Using Area Difference Distance Measurement  
SIAM Undergraduate Research Online, Volume 5 (2012). J. De Silva, K. Murata, J. An.  
http://www.siam.org/students/siuro/vol5/S01181.pdf  

In Preparation  

Anti-Ramsey Multiplicities  
J. De Silva, X. Si, M. Tait, Y. Tuncbilek, R. Yang, M. Young  

Grants & Awards  

Women and Mathematics Ambassador for the  
Institute for Advanced Study  
Fall 2017-Spring 2018  

One of three postdoctoral/advanced graduate ambassadors chosen to be given support to organize a weekend conference.  

Midwestern Association of Graduate Schools 2018 Excellence in Teaching Award Nominee  
Fall 2017  
Nominated to compete for this regional award, here is a link to the teaching demonstration video as part of the nomination portfolio.
Mini-Collaboration Grant
Funded by the 2016 PureMath@SACNAS to visit research collaborators. $1,500

NSF Graduate Student Research Fellowship
The NSF-GRFP recognizes and supports outstanding graduate students in NSF-supported science, technology, engineering, and mathematics disciplines. $138,000

Walter Mientka Graduate Teaching Award
Department award given annually to one graduate student for excellence in teaching. $500

Outstanding First Year Graduate Student Award
Department award given annually to one successful first year student. $1,000

J. Burton Vasche Award
Awarded to one outstanding CSU Stanislaus senior at commencement who displays the highest standards of leadership, cooperation, participation, service, and scholarship throughout his or her years at the University.

Teaching

Associate Course Convener

College Algebra
Oversaw 13 sections of the course. Responsibilities included running weekly course meetings, writing common quizzes, and editing common exams.

Instructor of Record

Calculus II
William H. Thompson scholars section, 13 students.

Math Modeling
Upper division course for elementary education majors, 36 students.

College Algebra
Two sections, 38 and 17 students respectively.

Teaching Assistant

Calculus I
College-level course for high school students in the Summer Academy for Math and Science.

Game Theory Project Assistant
Project-based course for high school students in the Summer Academy for Math and Science.

Functions, Algebra, & Geometry
A masters-level course for in-service elementary teachers through the Nebraska Math & Science Summer Institute.

Mentor

Graduate Research Mentor
Co-advised research projects for small groups of undergraduates at the Summer Undergraduate Applied Mathematics Institute at Carnegie Mellon University.

Graduate Student Mentor
Advised an undergraduate McNair Scholar in academic preparation for graduate school.
Other Teaching Activities

Calculus I Course Readiness Assessment  
Summer 2015
Designed a preliminary assessment administered to all UNL calculus students.

Teaching Online for Graduate Students  
Fall 2017
Course for graduate students to develop skills for more effective online instruction.

Teaching and Learning at the Post-Secondary Level  
Fall 2014, Spring 2015
Graduate course in mathematics education theory, literature, and practice.

“Teaching and Learning in STEM” Learning Community  
Spring 2017
Biweekly meetings with UNL graduate students and postdocs to discuss strategies to create a more learner-centered, evidence-based classroom environment.

Critical Issues in Mathematics Education 2018  
Spring 2018
Mathematical Sciences Research Institute: “Access to mathematics by opening doors for students currently excluded from mathematics.”

Diversity & Outreach

(Programs listed below are linked to the program website.)

Designing Equity by Thinking in and about Mathematics (DEbT-M)  
Summer 2016, 2017
DEbT-M is a collaboration of researchers and secondary school teachers in the Pittsburgh Public School District working to make math classes equitable for students of color.

Summer Academy for Math and Science  
Summer 2017
SAMS is a high school summer program at Carnegie Mellon University for rising seniors from diverse backgrounds with a strong interest in STEM.

Ronald E. McNair Postbaccalaureate Achievement Program  
Fall 2016, Spring 2017
The McNair Scholars Program prepares undergraduates from underrepresented backgrounds for graduate study in STEM.

“Mentoring Diversity in STEM” Learning Community  
Spring 2017
Biweekly meetings with UNL graduate students and postdocs to discuss how to encourage diversity in STEM through mentoring practices.

Diversity Program Memberships

- Society for the Advancement of Chicanos, Hispanics, and Native Americans in Science (SACNAS)
- National Alliance for Doctoral Studies in the Mathematical Sciences
- Ronald E. McNair Scholar
- Association for Women in Mathematics

Invited Talks

Distinguished Women in Mathematics Lecture Series  
Spring 2017
*Hat Guessing and Hanabi*  
San Francisco State University

New Graduate Student Welcome  
Fall 2016
*Transitioning to Graduate School*  
University of Nebraska-Lincoln

AMS Southeastern Sectional Meeting  
Spring 2016
*The Complexity of $\ell$-Hamilton Cycles in Hypergraphs*  
North Dakota State University

Math Club  
Spring 2016
*Hat Guessing and Hanabi*  
Nebraska Wesleyan University

ISU Discrete Math Seminar  
Spring 2016
*If All You Have is Thor’s Hammer*  
Iowa State University
Select Conferences

Joint Mathematics Meetings
Hat Guessing and Hanabi
Spring 2016
Seattle, WA

Joint Mathematics Meetings
Speaking in the graphs and computational combinatorics AMS contributed paper session on Wednesday, January 10 at 2:30 PM.
Spring 2018

SACNAS National Conference
Society for the Advancement of Chicanos, Hispanics, and Native Americans in Science.
Fall 2016, 2017

Field of Dreams Conference
National Alliance for Doctoral Studies in the Mathematical Sciences Department representative for graduate student recruitment.
Fall 2015, 2016

Other Programs & Workshops

Sao Pãolo Coding School
Two week long summer school in São Paol o, Brazil on coding and information theory.
Spring 2015

Rocky Mountain-Great Plains Graduate Research Workshop in Combinatorics
A collaborative research workshop for experienced graduate students in combinatorics.
Summer 2014, 2015

3D Modeling Workshop
Semester long workshop on designing 3D objects using the modeling software Rhinoceros.
Fall 2014

Service

Conference PI and Lead Organizer
Women and Mathematics at Carnegie Mellon University is a one-day event funded by the IAS and CMU for undergraduate women in mathematics at CMU.
Fall 2017-current

Graduate Student Ambassador
Ambassadors are selected by the UNL Office of Graduate Studies to support prospective, new, and current graduate students.
Fall 2015-current

Conference Planning Committee Member
Nebraska Conference for Undergraduate Women in Mathematics.
Fall 2015-Spring 2017

Steering Committee Member
Center for the Integration of Research, Teaching, and Learning at Nebraska.
Fall 2016-current

Webinar Series Organizer
"Square One: The First Year of Graduate School."
Fall 2017

TA Training Facilitator
UNL Campuswide TA Workshop Mathematics and Statistics Breakout Session.
Summer 2016, 2017

Application Evaluator
Evaluated research project proposals for UCARE from undergraduates in the sciences.
Spring 2016, 2017

Journal Referee
Discrete Mathematics & Theoretical Computer Science.
Fall 2017

Graduate Student Advisory Board Representative
The GSAB serves as a liaison between graduate students and the department.
Fall 2013-Spring 2015

Graduate Student Seminar Co-Organizer
Fall 2014-Spring 2015