Andrew Meier

Contact Information

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Education

Ph.D. Mathematics, University of South Carolina - Columbia, May 2022.

B.Sc. Mathematics & Physics, Nebraska Wesleyan University, May 6th, 2017.

Research Interests

Ramsey Theory

Matroid Theory

Spectral Graph Theory

Extremal Graph Theory

Information Theory

Pedagogical Theory

Mastery Based Examination

Research Publications

6. Anti-Ramsey Number of Edge-Disjoint Rainbow Spanning Trees in all Graphs (with L. Lu and Z. Wang), Winter 2022 *Accepted for Publication*, **SIAM J. Discrete Math**

5. Anti-Ramsey Number of Disjoint Rainbow Bases in all Matroids (with L. Lu), Fall 2021 *Submitted*

   arXiv:2110.07144.

4. Brouwer's Conjecture on Laplacian Eigenvalues of Graphs (with L. Lu), Fall 2020 – Present *In Preparation*

   arXiv:2104.12978

3. Perfect State Transfer on $K_{2,2t-1}$, Spring 2017 *In Preparation.*

2. Pruning Techniques for Subgraph Isomorphism (with A. Mohr and T. Schuler), Summer 2016 *In Preparation.*

1. Math Horizons Magazine

   Colorings of an Icosahedron, April 2015

   Trailing zeros of large factorials, July 2015

Presentations

19. **Guest Lecture:** MATH 5905, Mathematics Teacher Training, *Cognitive Load Theory*, University of Colorado, Boulder, Spring 2023

18. *Anti-Ramsey Number of Disjoint Bases in all Matroids*, University of South Carolina Graduate Colloquium, Fall 2021

17. *Anti-Ramsey Number of Edge-Disjoint Trees*, University of South Carolina Discrete Mathematics Seminar, Fall 2021

16. *Anti-Ramsey Number of Edge-Disjoint Trees*, University of South Carolina Graduate Colloquium, Fall 2021

15. *Ricci Curvature of Finite Markov Chains via Convexity of Entropy*, University of South Carolina Deep Learning Reading Seminar, Spring 2021

14. *Fischer Information and Entropy*, University of South Carolina Deep Learning Reading Seminar, Spring 2021

13. *Order from Chaos - Ramsey Numbers*, University of South Carolina Graduate Student Colloquium, Fall 2020

12. ***Invited Speaker***: *Finding the Sweet Spot: Active-Learning Support for Graduate Student Instructors*, University of South Carolina - Columbia, Spring 2020

11. *The Hypergraph Regularity Lemma* - A Two Part Seminar, University of South Carolina Extremal Graph Theory Reading Seminar, Spring 2020

10. *On Multicolor Ramsey Numbers of Triple System Paths of Length 3*, University of South Carolina Extremal Graph Theory Reading Seminar, Fall 2019

9. *On $K_{2,t}$-bootstrap Percolation*, University of South Carolina Extremal Graph Theory Reading Seminar, Fall 2019

8. *Independent Sets in Hypergraphs with a Forbidden Link*, University of South Carolina Extremal Graph Theory Reading Seminar, Spring 2019

7. *A Resolution of a Problem of Plesník*, University of South Carolina Extremal Graph Theory Reading Seminar, Fall 2018

6. *Perfect State Transfer on the Wall Graph*, Nebraska Wesleyan Research Symposium - Nebraska Wesleyan University, Spring 2017.

5. *Perfect State Transfer on Graphs with Potential*, Doane Symposium in Undergraduate Mathematics - Doane University, Spring 2017.

4. *Pruning Techniques for Subgraph Isomorphism*, MAA MathFest, Fall 2016.

3. *Enumeration of Nonisomorphic Trees*, Joint Mathematics Meeting, Winter 2016.

2. *Duncan's Space is Normal but not Compact*, Nebraska Wesleyan University Student Symposium, Spring 2016.

1. *Pruning Techniques for Subgraph Isomorphism using Matchings and Vertex Cuts*, Joint Mathematics Meeting, Winter 2017.

Seminar Organization

1. Co-Organizer for the Graduate Student Colloquium, University of South Carolina, Columbia, Fall 2021 – Present
2. Organizer for the Discrete Mathematics Seminar, University of South Carolina, Columbia, Fall 2020 – Spring 2021
3. Mentor Program for New Graduate Student Instructors, University of South Carolina, Columbia, Fall 2020 – Spring 2021

Panels

1. Virtual Drop in Panel for Incoming Ph.D Students, University of South Carolina - Columbia, Spring 2021
2. Incoming Ph.D. Student Q&A, University of South Carolina - Columbia, 2018 – Present
3. Qualifying and Comprehensive Exam Panel, University of South Carolina - Columbia, 2019 – Present

Honors and Awards

1. MAA's Project NExT (New Experiences in Teaching) Fellow, Spring 2023

   A highly selective professional development program for recent PhDs sponsored by the Mathematical Association of America (see Project NExT)

2. ***Certification***: Preparing Future Faculty Plus, Fall 2021
3. ***Certification***: Preparing Future Faculty (PFF), Summer 2021

   Successful PFF candidates have completed activities designed to prepare participants in the critical areas of faculty competence: teaching, research and service. This accomplishment is an indicator of the participant's initiative and a measure of experience toward becoming future faculty.

4. Recognized by name by a former student as a faculty or staff member who has taken an interest in their success through the Division of Student Affairs, University of South Carolina, Columbia, Fall 2020
5. Phi Kappa Phi's Scholar Award, 2017
6. Nebraska Wesleyan's Most Outstanding Senior in Mathematics Award, 2017
7. Math Club Member, 2013 – 2017
8. Physics Club Member, 2013 – 2017
9. Nebraska Wesleyan Society of Scholars, 2013 – 2014
10. Two year member of the National Honor Society, 2011 – 2013
11. Mathematics Ambassador for High School Academic Decathlon Team, 2011-2013
12. Gold Medal in Mathematics at an Academic Decathlon meet, 2012

Grant Support

1. American Mathematical Society, Graduate Student Travel Grant to the Joint Mathematics Meetings, Winter 2022
    - $1300
2. *Supported by*: Yee, S.P., Deshler, J., & Rogers, K.C. (2017-2021). Mathematics Graduate Student Peer-Mentorship Program: Impact and Adaptability. Improving Undergraduate STEM Education (IUSE), National Science Foundation (NSF). NSF AWARD #1725295
    - $4900 over 7 months
3. *Supported by*: Yee, S.P. (2018-2020). Active-Learning Lesson Plans for First-Time Graduate Student Instructors. University of South Carolina College of Arts and Sciences Innovative Teaching Associate Grant.
4. Nebraska Experimental Program to Stimulate Competitive Research, *Spanning Subgraph Isomorphism Using Cut Vertices* (NSF EPS-1004094), Summer 2016.
5. Joint Mathematics Meeting support, *Travel Funds for Joint Mathematics Meeting*, Fall 2015.
6. Nebraska Wesleyan University Student-Faculty Collaborative Research Grant, *Travel Funds for Joint Mathematics Meeting*, Fall 2015.
7. Nebraska Wesleyan University Student-Faculty Collaborative Research Grant, *Travel Funds for MAA MathFest*, Summer 2016.
8. Nebraska Wesleyan University Student-Faculty Collaborative Research Grant, *Travel Funds for Joint Mathematics Meeting*, Fall 2016.

Teaching

University of Colorado, Boulder:

7. Math 2130, *Linear Algebra for Non-Majors*, Summer 2023
6. Math 1300, *Calculus I*, Section 402, Summer 2023
5. Math 2300, *Calculus II*, Section 406, Summer 2023
4. Math 2300, *Calculus II*, Sections 009 and 010, Spring 2023
3. Math 1300, *Calculus I*, Section 013, Spring 2023
2. Math 2300, *Calculus II*, Section 014, Fall 2022
1. Math 1300, *Calculus I*, Sections 011 and 015, Fall 2022

University of South Carolina, Columbia:

10. Math 111, *Basic College Mathematics*, Section 019, Fall 2020
9. Math 142, *Calculus II*, **Honors** Section 03, *Teaching Assistant*, Fall 2020
8. Math 374, *Discrete Structures*, Section 201, Summer 2020

7. Math 170, *Finite Mathematics*, Section 002, Spring 2020
6. Math 115, *Precalculus*, Sections 006 and Q06, Fall 2019
5. Math 111, *Basic College Mathematics*, Sections 003 and S03, Spring 2019
4. Math 111i, *Intensive Basic College Mathematics*, Section 002, Fall 2018
3. Math 170, *Finite Mathematics*, Section 101, Summer 2018
2. Math 141, *Calculus I*, Sections 001 and 002, *Teaching Assistant* Spring 2018
1. Math 142, *Calculus II*, Sections 005 and 006, *Teaching Assistant* Fall 2017

Other Contributions:

1. Worked as a Mentor to Emerging Graduate Student Instructors to Provide Support and an Avenue for Critical Reflection of their Teaching Skills, University of South Carolina, Columbia, Fall 2020 – Present
2. Development of a Mathematics Placement Test and Integration into Automated Learning Systems for the University of South Carolina, Columbia, Mathematics Department, Spring 2021 – Present,
3. Worked to Develop Teaching Materials for Graduate Student Instructors for the Math 111 Course, University of South Carolina, Columbia, Summer 2019

Employment

11. Calculus 1 Coordinator, University of Colorado Boulder, Fall 2023 – Spring 2024
10. Visiting Teaching Assistant Professor, University of Colorado Boulder, Fall 2022 – Present
9. Math Placement Test Developer, University of South Carolina, Columbia, Spring 2021 – Fall 2022
8. Mentor for New Graduate Student Instructors, University of South Carolina, Columbia, Fall 2020 – Present
7. Graduate Student Instructor, University of South Carolina, Columbia, Summer 2018 – Present
6. Course Material Developer for Math 111, University of South Carolina, Columbia, Summer 2019
5. Graduate Teaching Assistant, University of South Carolina, Fall 2017 – Spring 2018.
4. Mathematics Tutor, Nebraska Wesleyan University, 2014 – 2017
3. MATH-1000 *Math for Liberal Arts* Specialized Tutor, 2015 – 2017
2. MATH-1300 *Statistics* Grader, Nebraska Wesleyan University, 2016 – 2017
1. Engineering Assistant, Metropolitan Utilities District, Omaha, NE, Summer 2015

Volunteer Work

1. Meals on Wheels Delivery Driver, Summer 2021 – Present