

## EDUCATION

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<b>University of Delaware</b> Ph.D. in Mathematics ( <i>ongoing</i> )	Newark, Delaware 9/2020–Current
<b>University of Delaware</b> M.S. in Mathematics (Advisor: Dr. Ivan G. Todorov)	Newark, Delaware 9/2020-5/2022
<b>University of Nebraska at Omaha</b> B.A. in Mathematics, B.S. in Computer Science, <i>summa cum laude</i>	Omaha, Nebraska 8/2016–5/2020

## RESEARCH INTERESTS

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- Operator algebras,  $C^*$ -algebras, quantum information theory, and non-local games

## TEACHING AND MENTORSHIP

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- **Instructor of record** at University of Delaware 6/2022-7/2022  
*MATH241 Analytic Geometry and Calculus A*
- **Graduate teaching assistant** at University of Delaware 8/2020-5/2022  
*MATH221 Calculus I*  
*MATH241 Analytic Geometry and Calculus A*  
*MATH242 Analytic Geometry and Calculus B*
- **Undergraduate mentoring** at University of Delaware 5/2021-8/2021  
*GEMS program mentee: Evan Liszewski*
- **Department teaching assistant** at University of Delaware 1/2022  
*Instructor for Vector Spaces Preliminary Exam Review Sessions*

## PREPRINTS

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1. **Hoefler, G.** and Todorov, I.G., “Quantum hypergraph homomorphisms and non-local games”, *submitted*, 2022, arXiv:2211.04851.

## PUBLICATIONS

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1. Camenga, K., Collins, B., **Hoefler, G.**, Rault, P. X., Quezada, J., Wilson, J., Johnson Yates, R. “On the geometry of numerical ranges over finite fields”, *Linear Algebra and its Applications*, Volume 628, pp. 182-201, 2021.

## PRESENTATIONS

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- **Hoefler, G.** Quantum Hypergraph Homomorphisms and Operator Algebras, *Inverse Problems and Analysis Seminar*, Newark, Delaware (10/2022)
- **Hoefler, G.** Quantum Hypergraph Homomorphisms and Operator Systems, *Banach Algebras and Applications*, Granada, Spain (7/2022)
- **Hoefler, G.** Quantum Chromatic Numbers of Graphs: Connections to  $C^*$ -algebras *UD Hallenbeck Graduate Student Seminar*, Newark Delaware (5/ 2022)

- Fish, A., **Hoefler, G.**, McCarty, S., Moles, G.. All about pursuing a PhD in Mathematics: A panel of UNO grads *University of Nebraska Omaha Mathematics Colloquium*, online (9/2021)
- **Hoefler, G.** Partial Order Games *University of Delaware GEMS Session*, online (7/2021)
- Collins, B., **Hoefler, G.**, Quezada, J., Willson, J. What is the boundary of a finite field numerical range? *MAA Student Poster Session, Joint Mathematics Meetings*, online (1/2021)

## RESEARCH

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### **GEMS Program, University of Delaware**

Newark, Delaware

Advisor: Dr. Ivan Todorov

5/2021-8/2021

- Formulated and investigated properties of non-local games on partially ordered sets
- Advised undergraduate Evan Liszewski on a separate project computing the values of specific partially ordered set games using local strategies

### **University of Nebraska Omaha Department of Mathematics**

Omaha, Nebraska

Advisor: Dr. Patrick Rault

9/2019-6/2020

- Studied the geometry of the numerical range of matrices over finite fields using boundary generating curves
- Co-author of paper with Dr. Patrick Rault, Brandon Collins, Jonny Quezada, James Willson, and others

### **University of Nebraska Omaha Department of Mathematics**

Omaha, Nebraska

Advisor: Dr. Ying Hu

3/2019-8/2019

- Participated in the UNO Kerrigan Mini-Grant Program under the direction of Dr. Ying Hu
- Wrote computer software which provides visual examples of geodesics on the surface of the once-punctured torus, when viewed using the Poincaré disc model
- Author of report which summarized our findings

## EXPERIENCE

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### **Union Pacific, Department of Information Technology**

Omaha, Nebraska

Software development intern

5/2018-8/2019

- Rewrote and updated outdated in-house programs
- Full-stack development, involved creating software which handled interactions between the user and the backend, and database communication

### **University of Nebraska Omaha**

Omaha, Nebraska

Student grader

1/2019-5/2020

- MATH 1960 Calculus II, MATH 2050 Applied Linear Algebra, MATH 2230 Introduction to Abstract Mathematics, MATH 4560 Number Theory & Cryptography

## SCHOLARSHIPS AND AWARDS

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- Walter Scott Jr. Scholarship recipient 2016–2020
- University of Nebraska Omaha Regents Scholarship recipient 2016–2020
- NASA Nebraska Space Mini Grant recipient 2017–2019
- UNO Department of Mathematics “Problem of the Week” competition winner 2018–2019
- University of Delaware GEMS recipient 2021–2021

## SKILLS

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- **Programming Languages:** Proficient in C, Java, Python, Mathematica, AngularJS, HTML/CSS, and the markup language LaTeX, with familiarity in Sage, Ruby and SQL

## SERVICE

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- **Vice-President**, *University of Delaware's SIAM chapter* 8/2022 –7/2023
- **New student mentor**, *Mentoring Program, University of Delaware's AWM chapter* 8/2021–present
- **Secretary**, *University of Delaware's SIAM chapter* 8/2021–7/2022
- **Student outreach volunteer**, *UD Department of Mathematics Winter Research Symposium* 2021

## PROFESSIONAL MEMBERSHIPS

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**Society of Industrial and Applied Mathematics**  
**American Mathematical Society**  
**Pi Mu Epsilon**