

# Garner Cochran

## Curriculum Vitae

Berry College  
Department of Mathematics and Computer Science  
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Mt Berry, GA 30149

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### Education

- August 2013–  
May 2018 **Ph.D. in Applied Mathematics,**  
*University of South Carolina, Columbia, SC.*  
Advisor: Éva Czabarka
- January 2012–  
May 2012 **Budapest Semesters in Mathematics,**  
Budapest, Hungary.
- August 2009–  
May 2013 **B.A. Mathematics,**  
*Trinity University, San Antonio, TX.*

### Academic Positions

- August 2018–  
Present **Assistant Professor of Applied Mathematics,** *Berry College.*
- August 2013–  
May 2018 **Teaching Assistant,** *University of South Carolina.*
- Summer 2011 **Integrated Research in Biomathematics,** *Trinity University.*

### Publications

- [1] C. ; WANG: The Upper Bound on the Oriented Diameter of Graphs is the Lower Bound, Up to a Constant. (2022+). – In Preparation
- [2] C.: Large Girth and Small Oriented Diameter Graphs. In: *Discrete Math* (2022+). – Submitted
- [3] C. ; GROOTHUIS ; HERRING ; ROHATGI ; STUCKY: A New [Combinatorial] Proof of the Commutativity of Matching Polynomials for Cycles. (2022+)
- [4] C. ; CZABARKA ; DANKELMANN ; SZEKELY: A Size condition for diameter 2 orientability of a graph. In: *Graphs and Combinatorics* 28 (2021), Nr. 3, S. 3–52
- [5] ASPLUND ; CZABARKA ; CLARK ; C. ; HAMM ; SPENCER ; SZEKELY ; TAYLOR ; WANG: Using Block Designs in Crossing Number Bounds. In: *Journal of Combinatorial Designs* 27 (2019), October, Nr. 10, S. 586–597
- [6] BJORKMAN ; C. ; GAO ; KEOUGH ; KIRSCH ; PHILLIPSON ; RORABAUGH ; SMITH ; WISE:  $k$ -Foldability of Words. In: *Discrete Applied Mathematics* 259 (2019), April, S. 19–30

- [7] CHAMBERLAIN ; C. ; GINSBURG ; MICELI ; RIEHL ; ZHANG: Generating functions and Wilf Equivalence for generalized interval embeddings. In: *Australasian Journal of Combinatorics* (2015)
- [8] LIVINGSTONE ; OLOFSSON ; C. ; DAGILIS ; MACPHERSON ; SEITZ: A Stochastic Model for the Development of Bateson-Dobzhansky-Muller Incompatibilities Incorporating Protein Interaction Networks. In: *Mathematical Biosciences* 238 (2012), S. 49–53

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## Conference Talks

- January 13, 2018 **"Quick Trips: An Improved Bound on the Oriented Diameter of Graphs"**,  
*Joint Mathematics Meetings, San Diego, CA*, Contributed Paper Session in Graph Theory.
- January 6, 2017 **"Polynomial Chebyshev Quotients, Combinatorially."**,  
*Joint Mathematics Meetings, Atlanta, GA*, Contributed Paper Session in Combinatorics and Graph Theory.
- October 17, 2014 **"Generating Functions for Wilf Equivalence in Interval Embeddings"**,  
*Graduate Student Combinatorics Conference, University of Kentucky, Lexington, KY*.
- April 20, 2013 **"Generating Functions for Wilf Equivalence in Interval Embeddings"**,  
*CombinaTexas, Houston, TX*.

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## Invited Talks

- August 2, 2019 **" $k$ -Foldability of RNA"**,  
*Mathfest, Cincinnati, OH*, Mathematical Diversity in Mathematical Biology.
- March 7, 2019 **"The Math Behind the Match"**,  
*Berry College Pre-Med Program*.
- March 18, 2016 **"The Stable Marriage Problem"**,  
*Carolina Math Seminar, Newberry College*.
- February 24, 2015 **"The Stable Marriage Problem"**,  
*Pi Mu Epsilon Induction, University of South Carolina*.

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## Other Seminar Talks

- October 5, 2017 **"Polynomial Chebyshev Quotients, Combinatorially."**,  
*Colloquium Seminar, University of Johannesburg, Johannesburg, South Africa*.
- September 28, 2017 **"The Stable Marriage Problem"**,  
*Math Majors, University of Johannesburg, Johannesburg, South Africa*.
- January 20, 2017 **"Polynomial Chebyshev Quotients, Combinatorially."**,  
*Discrete Seminar, University of South Carolina, Columbia, SC*.
- May 27, 2015 **"What do math majors do?"**,  
*Clark High School, San Antonio, TX*.

- October 17, 2014 **"Generating Functions for Wilf Equivalence in Interval Embeddings"**, *Discrete Seminar, University of South Carolina, Columbia, SC.*
- May 2013 **"Generating Functions for Wilf Equivalence in Interval Embeddings"**, *Mathematics Seminar, Trinity University, San Antonio, TX.*
- August 2011 **"A stochastic model for the development of Bateson-Dobzhansky-Muller incompatibilities Incorporating Protein Interaction Networks"**, *Trinity University Summer Research Symposium, Trinity University, August 2011.*

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## Teaching Experience

### Courses Taught at Berry College

- Math 105 **Nature of Mathematics**, *Fall 2021, Spring 2022.*
- Math 145 **Applied Calculus for Business Majors**, *Fall 2018, Spring 2019, Fall 2019, Fall 2020.*
- Math 304 **Differential Equations**, *Fall 2018, Spring 2019, Spring 2020, Fall 2020, Spring 2021, Spring 2022.*
- Math 201 **Calculus 1**, *Fall 2019, Fall 2020.*
- Math 303 **Linear Algebra**, *Spring 2020.*
- Math 311 **Probability and Statistics**, *Fall 2021.*
- MAT 490 **Senior Seminar**, *Spring 2020, Fall 2020, Spring 2022.*
- MAT 498/420 **Combinatorial Optimization**, *Spring 2020 (DS), Fall 2020 (DS), Spring 2021.*

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## Service and Professional Development (Berry College)

- Fall 2021-Spring 2022 **Applied Mathematics Hiring Committee**, *Departmental Committee.*
- Fall 2021- **Math and CS P&T Guidelines committee**, *Departmental Committee.*
- November 2021 **Discover Berry**, *One of the Department Representatives.*
- Fall 2021-Spring 2023 **Academic Council**, *School-wide Committee, FA Representative.*
- Fall 2021-Spring 2023 **Athletics Committee**, *School-wide Committee, FA Representative.*
- Spring 2021- **Data Science Curriculum Committee**, *Departmental Committee.*
- February 2020 **Discover Berry**, *One of the Department Representatives.*
- Fall 2020-Spring 2021 **Writing Across the Curriculum Committee**, *School-wide Committee, MNS Representative.*
- Fall 2019-Spring 2021 **Planning Council**, *School-wide Committee, MNS Representative.*
- Fall 2019-Spring 2021 **Faculty Sponsor for Berry College eSports Club.**
- October 2018 **Discover Berry**, *One of the Department Representatives.*

- Fall 2018-Spring 2020 **Curriculum Committee**, *Math Department*, Helped develop departmental recommendations for AP and IB placement scores.
- Spring 2019-Spring 2020 **Math Competition Committee**, *Math Department*.

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## Service and Professional Development (Graduate School)

- Fall 2017-Spring 2018 **Business Calculus Textbook Committee**.  
Discuss a possible change of text
- January 2018 **Lead Organizer for AMS Special Session at JMM**.  
Contact and invite speakers and organize the schedule
- December 2016 **Columbia Math Circle**.  
Discuss and expose K-12 students to upper level mathematics
- Fall 2015-Spring 2016 **Organizer of USC Discrete Seminar**.  
Invite speakers and organize the calendar for the seminar
- January 2015 **USC High School Math Contest**, Volunteer Proctor.
- January 2014 **USC High School Math Contest**, Volunteer Proctor.
- Fall 2015-Spring 2016 **USC SIAM Secretary**.  
Update the SIAM website and send out emails to members announcing talks

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## Conferences Attended

- July 2019 **MAA Mathfest**, *Cincinnati*.
- March 2019 **MAA Southeastern Section Meeting**, *Lee University*, Cleveland, TN.
- January 2019 **AMS & MAA Joint Mathematics Meetings**, *Baltimore, MD*.
- July 2018 **MAA Mathfest**, *Denver, CO*.
- January 2018 **AMS & MAA Joint Mathematics Meetings**, *San Diego, CA*.
- January 2017 **AMS & MAA Joint Mathematics Meetings**, *Atlanta, GA*.
- March 2016 **AMS Sectional Meeting**, *University of Georgia*, Athens, GA.
- March 2015 **Graduate Student Combinatorics Conference**, *University of Kentucky*, Lexington, KY.
- January 2015 **2015 AMS & MAA Joint Mathematics Meetings**, *San Antonio, TX*.
- September 2013 **Triangle Lectures in Combinatorics**, *NC State*, Raleigh, NC.
- April 2013 **CombinaTexas**, *University of Houston*, Houston, TX.
- January 2013 **2013 AMS Joint Mathematics Meeting**, *San Diego, CA*.

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## Workshops Attended

- Summer 2020 **PEDESTALS 2: Teaching Mathematics Remotely and Doing It Well**.
- June 11 – 17, 2017 **Beyond Planarity: Crossing Numbers of Graphs**, *Snowbird Resort*, Utah.
- July 17-29, 2016 **Rocky Mountain-Great Plains Graduate Research Workshop in Combinatorics**, *University of Wyoming*, Laramie, WY.

- June 1-13, 2015 **Rocky Mountain-Great Plains Graduate Research Workshop in Combinatorics**, *Iowa State University*, Ames, IA.
- March 2015 **2nd Lake Michigan Workshop on Combinatorics and Graph Theory**, *University of Notre Dame*, Notre Dame, IN.
- May 2013 **Summer School in Network Science**, *University of South Carolina*, Columbia, SC.

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## Awards and Honors

- August 2021 **NSF S-STEM Grant**, *The Intersection of Science Identity and Success for Low-Income, Academically-Talented Students*, National Science Foundation.
- May 2019 **Richards Undergraduate Research Support Grant**, *Advisee: Mackenzie Ambrose*, Awarded by the Council of Student Scholarship, Berry College.
- 2018 **Project NExT Fellow**, *MAA Faculty Development Program*, Mathematics Association of America.
- 2016-2017 **USC SPARC Grant Recipient**, *Awarded by the VP for Research*, University of South Carolina, Columbia, SC.
- October 2016 **Travel Award (Full Support)**, *Atlanta Lecture Series*, Georgia Tech, Atlanta, GA.
- July 17-July 29, 2015 **Acceptance to Workshop with Full Support**, *Rocky Mountain-Great Plains Graduate Research Workshop in Combinatorics*, University of Wyoming, Laramie, WY.
- November 2015 **Travel Award (Full Support)**, *Atlanta Lecture Series*, Georgia Tech, Atlanta, GA.
- June 1-June 13, 2015 **Acceptance to Workshop with Full Support**, *Rocky Mountain-Great Plains Graduate Research Workshop in Combinatorics*, Iowa State University, Ames, IA.
- March 2015 **Travel Award (Full Support)**, *Lake Michigan Workshop on Combinatorics and Graph Theory*, University of Notre Dame, South Bend, IN.
- Summer 2014 **Summer Grant Funding**, *Professor László Székely's NSF Grant*, University of South Carolina, Columbia, SC.
- September 2013 **Travel Award (Full Support)**, *Triangle Lectures in Combinatorics*, NC State University, Raleigh, NC.
- February 2011 and February 2013 **Successful Participant**, *The Mathematical Contest in Modeling*, COMAP.
- Summer 2011 **Summer Grant Funding**, *Integrated Research in Biomathematics*, Trinity University.

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## Memberships

- American Mathematical Society (AMS)
- Society for Industrial and Applied Mathematicians (SIAM)
- Kappa Mu Epsilon, Mathematics Honors Society

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## Computer Skills

- Python
- Sage
- $\LaTeX$
- Maple
- Mathematica