





# Derek Young

Assistant Professor  
Mount Holyoke College  
Mathematics and Statistics Department  
50 College St, South Hadley, MA 01075

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## EDUCATION

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### Doctor of Philosophy in Mathematics

IOWA STATE UNIVERSITY

Advisor: Dr. Leslie Hogben

May 2019

Ames, IA

### Iowa State University

BACHELOR OF SCIENCE

Advisor: Dr. Sung Yell Song

May 2013

Ames, IA

### Florida State College at Jacksonville

ASSOCIATE OF ARTS

Advisor: Gregory Dietrich

May 2010

Jacksonville, FL

## ACADEMIC POSITIONS

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### Assistant Professor

MOUNT HOLYOKE COLLEGE

Fall 2022 -

South Hadley, MA

### Visiting Lecturer

MOUNT HOLYOKE COLLEGE

Fall 2021 - Spring 2022

South Hadley, MA

### Hutchcroft Fellow, Postdoctoral Visiting Lecturer

MOUNT HOLYOKE COLLEGE

Fall 2019 - Spring 2021

South Hadley, MA

### Adjunct Instructor

ST. OLAF COLLEGE

Spring 2019

Northfield, MN

### Teaching Assistant

IOWA STATE UNIVERSITY

Fall 2013 - Fall 2018

Ames, IA

### Research Assistant

IOWA STATE UNIVERSITY

Summer 2017




Ames, IA

## SCHOLARLY CONTRIBUTIONS

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Publications since joining MHC are marked as . Single author publications are marked as .

### JOURNAL PUBLICATIONS

- ☒ Louis Deaett, [Derek Young](#). Relationships between minimum rank problem parameters for cobipartite graphs. *Discrete Applied Mathematics*, **2025** 
- ☒ Cashous Bortner, Jennifer Garbett, Elizabeth Gross, Naomi Krawzik, Christopher McClain, [Derek Young](#). Maximum likelihood degree of the  $\beta$ -stochastic blockmodel. *Algebraic Statistics*, **2025** 
- ☒ Emelie Curl, Shaun Fallat, Ryan Moruzzi Jr, Carolyn Reinhart, [Derek Young](#). On the zero forcing number of the complement of graphs with forbidden subgraphs. *Linear Algebra and its Applications*, **2024** 

- ☑ Marina Arav, Louis Deaett, H. Tracy Hall, Hein van der Holst, [Derek Young](#). A matching-minor monotone parameter for bipartite graphs. *Linear Algebra and its Applications*, **2024** 📌
- ☑ F. Scott Dahlgren, Zachary Gershkoff, Leslie Hogben, Sara Motlaghian, [Derek Young](#). Inverse eigenvalue and related problems for hollow matrices described by graphs. *Electron. J. Linear Algebra*, **2022** 📌
- ☑ [Derek Young](#). Techniques for Determining Equality of the Maximum Nullity and the Zero Forcing Number of a Graph. *Electron. J. Linear Algebra*, **2021** 📌📌
- ☑ Joesph S. Alameda, Emelie Curl, Armando Grez, Leslie Hogben, O'Neill Kingston, Alex Schulte, [Derek Young](#), and Michael Young. Families of graphs with maximum nullity equal to the zero forcing number. *Spec. Matrices*, 6:56-67, **2018**
- ☑ Christina Eubanks-Turner, Matthew Jake Lennon, Eduardo Reynoso, Brandy Thibodeaux, Amanda Urquiza, Ashley Wheatley, [Derek Young](#). Using the division algorithm to decode Reed-Solomon Codes. *Shanghai Normal University*, 44:3, **2015**

## ARXIVED PUBLICATIONS

- ☑ Chassidy Bozeman, Joshua Carlson, Michael Dairyko, [Derek Young](#), Michael Young. Lower Bounds for the Exponential Domination Number of  $C_m \times C_n$ . <https://arxiv.org/abs/1803.01933>, **2018**

## INVITED TALKS

- ☑ *Relationships between minimum rank problem parameters for cobipartite graphs* : International Linear Algebra Society, Kaohsiung, Taiwan, June 23-25, **2025**.
- ☑ *Relationships between minimum rank problem parameters for cobipartite graphs* : 56th Southeastern International Conference on Combinatorics, Graph Theory and Computing, Boca Raton, FL, March 3-7, **2025**.
- ☑ *Minimum Rank and Zero Forcing Parameters for Cobipartite Graphs* : Joint Mathematics Meetings, Seattle, WA, January 8-11, **2025**.
- ☑ *Minimum Rank and Zero Forcing Parameters for Cobipartite Graphs* : 54th Southeastern International Conference on Combinatorics, Graph Theory and Computing, Boca Raton, FL, March 6-10, **2023**.
- ☑ *Inverse eigenvalue and related problems for hollow matrices described by graphs* : Joint Mathematics Meetings, January 3-6, **2023**.
- ☑ *The Zero Forcing Number and Maximum Nullity of a Graph* : Smith College, November 17, **2022**.
- ☑ *The Zero Forcing Number and Maximum Nullity of a Graph* : University of Hartford, November 11, **2022**.
- ☑ *Minimum Rank and Zero Forcing Parameters for Cobipartite Graphs* : Joint Mathematics Meetings, April 6, **2022**.
- ☑ *The Zero Forcing Number and Maximum Nullity of a Graph* : University of Massachusetts Amherst, October 8, **2021**.
- ☑ *The Maximum Nullity and Zero Forcing Number of a Graph* : Joint Mathematics Meetings, Virtual, January 7, **2021**.
- ☑ *Maximum Nullity and Zero Forcing Number of a Graph* : Slippery Rock University, Slippery Rock, PA, February 20, **2020**.
- ☑ *Some graphs whose maximum nullity and zero forcing number are the same* : Joint Mathematics Meetings, Denver, CO, January 16, **2020**.
- ☑ *Determining the Maximum Nullity and Minimum Rank Field Independence for some graphs* : 50th Southeastern International Conference on Combinatorics, Graph Theory and Computing, Boca Raton, FL, March 4-8, **2019**.
- ☑ *Techniques for Determining Equality of the Maximum Nullity and the Zero Forcing Number of a Graph* : St. Olaf College Research Seminar, Northfield, MN, March 22, **2019**.

## CONTRIBUTED TALKS

- ☑ *Inverse eigenvalue and related problems for hollow matrices described by graphs* : International Linear Algebra Society, June 22, **2022**.
- ☑ *Maximum Nullity and Zero Forcing Number of a Graph* : Mount Holyoke College, South Hadley, MA, February 12, **2020**.
- ☑ *Determining the Maximum Nullity and Minimum Rank Field Independence for some graphs* : Joint Mathematics Meetings, Baltimore, MD, January 16-19, **2019**.
- ☑ *Determining the maximum nullity and minimum rank field independence for some graphs* : Conference for African-American Researchers in the Mathematical Sciences, Princeton, NJ, July 11-14, **2018**.
- ☑ *Lower Bounds for the Exponential Domination Number of  $C_m \times C_n$*  : 47th Southeastern International Conference on Combinatorics, Graph Theory and Computing, Boca Raton, FL, March 7-11, **2016**.
- ☑ *Flows in Networks* : 7th Annual GMAP Research Symposium, Ames, IA, May 19, **2013**.
- ☑ *Division Algorithm Decoding of Reed Solomon Codes* : 2012 Young Mathematicians Conference, Columbus, OH, July 27-29, **2012**.

## CONTRIBUTED POSTERS

- ☑ *Determining the maximum nullity and minimum rank field independence for some graphs* : Conference for African-American Researchers in the Mathematical Sciences, Princeton, NJ, July 11-14, **2018**.
- ☑ *Families of graphs with maximum nullity equal to zero forcing number* : International Linear Algebra Society, Ames, IA, July 24-28, **2017**.
- ☑ *Families of graphs with maximum nullity equal to zero forcing number* : Conference for African-American Researchers in the Mathematical Sciences, Ann Arbor, MI, June 21-24, **2017**.
- ☑ *Lower Bounds for the Exponential Domination Number of  $C_m \times C_n$*  : Conference for African-American Researchers in the Mathematical Sciences, Princeton, NJ, June 15-18, **2016**.
- ☑ *Finite Approximations of Ammann-Beenker Tiling* : Conference for African-American Researchers in the Mathematical Sciences, Princeton, NJ, June 11-14, **2014**.
- ☑ *Randomize Matrix Multiplication* : Society for Advancement of Chicanos and Native Americans in Science, San Jose, CA, October 27-30, **2011**.



## ATTENDED WORKSHOPS










- ☑ *Research Experiences for Undergraduate Faculty (REUF)* : American Institute of Mathematics, Pasadena, CA, **2024**.
- ☑ *Research Experiences for Undergraduate Faculty (REUF)* : American Institute of Mathematics, Providence, RI, **2023**.
- ☑ *Project New Experiences in Teaching (NExT)* : Mathematical Association of America, Tampa, FL, **2023**.
- ☑ *Project New Experiences in Teaching (NExT)* : Mathematical Association of America, Baltimore, MD, **2022**.
- ☑ *Mathematics Research Communities (MRC)* : American Mathematical Society, Remote, **2021**.
- ☑ *AIM Research Communities (ARC)* : American Institute of Mathematics, Remote, **2021**.
- ☑ *African Diaspora Joint Mathematics Workshop (ADJOINT)* : Mathematical Sciences Research Institute, Berkeley, CA, **2019**.
- ☑ *Graduate Research Workshop in Combinatorics (GRWC)* : University of Colorado Denver, Denver, CO, **2017**.

# TEACHING EXPERIENCE

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## COURSES

Courses taught during a modular semester marked as  and . These courses were taught in the first eight weeks and second eight weeks of the semester respectively.

- ☑ *Linear Algebra* : Mount Holyoke College - Assistant Professor, **S 2025**.
- ☑ *Abstract Algebra (Group Theory)* : Mount Holyoke College - Assistant Professor, **S 2025**.
- ☑ *Independent Study* : Mount Holyoke College - Assistant Professor, **S 2025**.
  - 👤 *Kewen Yuan* : Graph Theory: Zero Forcing and Directly Forceable Graphs
  - 👤 *Khanh Dinh* : Graph Theory: Zero Forcing and Directly Forceable Graphs
- ☑ *Calculus II* : Mount Holyoke College - Assistant Professor, **F 2024**.
- ☑ *Discrete Mathematics* : Mount Holyoke College - Assistant Professor, **F 2024**.
- ☑ *Independent Study* : Mount Holyoke College - Assistant Professor, **F 2024**.
  - 👤 *Kewen Yuan* : Graph Theory: Zero Forcing and Directly Forceable Graphs
- ☑ *Linear Algebra* : Mount Holyoke College - Assistant Professor, **S 2024**.
- ☑ *Abstract Algebra (Group Theory)* : Mount Holyoke College - Assistant Professor, **S 2024**.
- ☑ *Calculus II* : Mount Holyoke College - Assistant Professor, **F 2023**.
- ☑ *Calculus II* : Mount Holyoke College - Assistant Professor, **F 2023**.
- ☑ *Linear Algebra* : Mount Holyoke College - Assistant Professor, **S 2023**.
- ☑ *Linear Algebra* : Mount Holyoke College - Assistant Professor, **S 2023**.
- ☑ *Discrete Mathematics* : Mount Holyoke College - Assistant Professor, **F 2022**.
- ☑ *Independent Study* : Mount Holyoke College - Assistant Professor, **F 2022**.
  - 👤 *Jennifer Pham* : Graph Theory: Planar graphs
  - 👤 *Laura Thornburg* : Graph Theory: Ramsey numbers
- ☑ *Calculus II* : Mount Holyoke College - Visiting Lecturer, Remote, **S 2022**. 
- ☑ *Discrete Mathematics* : Mount Holyoke College - Visiting Lecturer, Remote, **S 2022**. 
- ☑ *Calculus II* : Mount Holyoke College - Visiting Lecturer, Remote, **F 2021**. 
- ☑ *Discrete Mathematics* : Mount Holyoke College - Visiting Lecturer, Remote, **F 2021**. 
- ☑ *Discrete Mathematics* : Mount Holyoke College - Visiting Lecturer, Remote, **F 2021**. 
- ☑ *Discrete Mathematics* : Mount Holyoke College - Postdoctoral Visiting Lecturer, Remote, **S 2021**. 
- ☑ *Linear Algebra* : Mount Holyoke College - Postdoctoral Visiting Lecturer, Remote, **S 2021**. 
- ☑ *Linear Algebra* : Mount Holyoke College - Postdoctoral Visiting Lecturer, Remote, **F 2020**. 
- ☑ *Linear Algebra* : Mount Holyoke College - Postdoctoral Visiting Lecturer, Remote, **F 2020**. 
- ☑ *Discrete Mathematics* : Mount Holyoke College - Postdoctoral Visiting Lecturer, Remote and South Hadley, MA, **S 2020**.
- ☑ *Discrete Mathematics* : Mount Holyoke College - Postdoctoral Visiting Lecturer, **F 2019**.
- ☑ *Calculus I* : St. Olaf College - Adjunct Instructor, Northfield, MN, **S 2019**.
- ☑ *Calculus I* : St. Olaf College - Adjunct Instructor, Northfield, MN, **S 2019**.
- ☑ *College Algebra* : Iowa State University, Ames, IA, **Su 2018**.
- ☑ *Calculus I* : Iowa State University, Ames, IA, **S 2017**.

## MENTORING

- ☑ *Undergraduate Research* : Mount Holyoke College, **Su 2024**.

# SERVICES

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## NATIONAL

- ☑ *Hudson River Undergraduate Conference* : Section Moderator, Mount Holyoke College, **F 2023**.

## INSTITUTIONAL

- ☑ *Search Committee* : Served as a member of Mathematics and Statistics search committee, Mount Holyoke College, **F 2023**.
- ☑ *Search Committee* : Served as a member of Mathematics and Statistics search committee, Mount Holyoke College, **F 2022**.

## DEPARTMENTAL

- ☑ *Math/Stat Lunches* : Organize weekly meetings, Mount Holyoke College, **S 2025**.
- ☑ *Math/Stat Lunches* : Co-organize weekly meetings, Mount Holyoke College, **F 2020**.

# ACCOMPLISHMENTS

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## GRANTS

- ☑ *Data Analytics and Society Nexus track* : Mount Holyoke College, Teaching **Su 2022**.
- ☑ *A Room of One's Own* : Duke University, Research Facilitator **S 2020**.
- ☑ *Solve-a-Thon Grant* : Iowa State University, Session Organizer, **S 2017**.
- ☑ *Solve-a-Thon Grant* : Iowa State University, Session Organizer, **S 2016**.

## HONORS AND AWARD

- ☑ *Poster Award for "Best Theory"* : Conference for African-American Researchers in the Mathematical Sciences (CAARMS), , **2018**.
- ☑ *Pathways Scholar for Transforming Undergraduate Mathematics Education Certificate* : Arizona State University, , **2016**.
- ☑ *Ronald E. McNair Scholar* : Iowa State University, , **2010**.

# SKILLS

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## COMPUTER

- ☑ Linux, Python, Git, Bash, LaTeX, Typst, Html