

# Derek Young

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

✉ derekyoungmath  
⌚ derekyoungmath  
👤 derekyoungmath  
>ID 0000-0002-0463-0937

## EDUCATION

---

### Doctor of Philosophy in Mathematics

May 2019  
*Ames, IA*

IOWA STATE UNIVERSITY

Advisor: Dr. Leslie Hogben

### Iowa State University

May 2013  
*Ames, IA*

BACHELOR OF SCIENCE

Advisor: Dr. Sung Yell Song

### Florida State College at Jacksonville

May 2010  
*Jacksonville, FL*

ASSOCIATE OF ARTS

Advisor: Gregory Dietrich

## ACADEMIC POSITIONS

---

### Assistant Professor

Fall 2022 -  
*South Hadley, MA*

MOUNT HOLYOKE COLLEGE

### Visiting Lecturer

Fall 2021 - Spring 2022  
*South Hadley, MA*

MOUNT HOLYOKE COLLEGE

### Hutchcroft Fellow, Postdoctoral Visiting Lecturer

Fall 2019 - Spring 2021  
*South Hadley, MA*

MOUNT HOLYOKE COLLEGE

### Adjunct Instructor

Spring 2019  
*Northfield, MN*

ST. OLAF COLLEGE

### Teaching Assistant

Fall 2013 - Fall 2018  
*Ames, IA*

IOWA STATE UNIVERSITY

### Research Assistant

Summer 2017  
*Ames, IA*

IOWA STATE UNIVERSITY

## SCHOLARLY CONTRIBUTIONS

---

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

---

## 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

---

## 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

---

## 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

---

## COMPUTER

- Linux, Python, Jujutsu, Bash, LaTeX, Typst, Html