

# Dr. Ryan T. Johnson

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in ryan-johnson

MathAtGrace



## Employment History

- 2014 – 2019 **Assistant Professor of Mathematics** Grace College.
- 2019 – 2024 **Associate Professor and Program Director of Mathematics** Grace College
- 2019 – 2025 **Director of General Education** Grace College
- summer 2024 **Data Science Consultant** Toby Lemon LLC
- 2024 – ⋯ **Professor and Program Director of Mathematics** Grace College

## Education

- 2009 – 2014 **Ph.D., Iowa State University** Mathematics with Minor in Physics.  
Thesis: *The Frobenius-Schur Indicator of Tambara Yamagami Categories*  
Advisor: Dr. Tathagata Basak
- 2005 – 2009 **B.S. Hope College** Mathematics with Minor in Computer Science.

## Research

### Journal Articles

- 1 C. Edie-Michell, M. Izumi, and D. Penneys, “Classification of  $\mathbb{Z}/2\mathbb{Z}$ -quadratic unitary fusion categories,” *Quantum Topol.*, 2024, (with an appendix by Ryan Johnson, Siu-Hung Ng, David Penneys, Jolie Roat, Matthew Titsworth, and Henry Tucker).
- 2 N. Bosch, A. Daeger, and **R. Johnson**, “Impacts on nutrient and sediment resuspension by various watercraft across multiple substrates, depths, and operating speeds in indiana’s largest natural lake,” *Proceedings of the Indiana Academy of Science*, vol. 130, no. 2, pp. 112–122, 2022.
- 3 T. Basak and **R. Johnson**, “Indicators of tambara-yamagami categories and gauss sums,” *Algebra & Number Theory*, vol. 9, no. 8, pp. 1793–1823, 2015.
- 4 J. Ekstrand, C. Erickson, H. T. Hall, *et al.*, “Positive semidefinite zero forcing,” *Linear Algebra appl.*, vol. 439, no. 7, pp. 1862–1874, 2013.

### Student Collaborations

- 1 K. Boeckers, M. Espindola, A. Graves, and **R. Johnson**, Spring 2024 project attempting to use deep learning to digitize algae enumeration records for Lakes and Streams. Presented at Communitas, 2024.  
🔗 URL: [https://docs.google.com/presentation/d/1kZK5Tw0N0PfJpJD1wfNnTA4mp7CwrD\\_l1n0gPz01FtA/edit?usp=sharing](https://docs.google.com/presentation/d/1kZK5Tw0N0PfJpJD1wfNnTA4mp7CwrD_l1n0gPz01FtA/edit?usp=sharing).
- 2 A. Graves and **R. Johnson**, Trained Anna Graves to continue running the R code that compiled COVID-19 data for Grace College while I was on sabbatical.
- 3 **R. Johnson** and A. Strahan, Fall 2022 project attempting to model algae in Kosciusko county lakes.  
🔗 URL: <https://github.com/austin-strahan/Lakes-ML/blob/main/Project.ipynb>.
- 4 **R. Johnson** and P. Wertz, Talk given on baseball sabermetrics at the 2021 Communitas part 1: <https://youtu.be/-LPY3mun32M> and part 2: <https://youtu.be/3YRpYvsRJd4>.

## Internal Research

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### Assessment of Learning

- 2019 **Accreditation Issues** Two months before I became Director of General Education, the Higher Learning Commission (HLC), the accrediting body for Grace College, asked us to, "Engage in a more comprehensive curriculum mapping exercise that clearly articulates the connection between college wide learning goals, Grace Core outcomes, and programmatic learning outcomes."
- 2019 – 2021 **New Learning Outcomes**, I lead the Core Committee through the process of developing new learning outcomes consistent with our foundational documents and best practices of higher education, which were approved by the faculty.
- 2021 – 2022 **New Assessment Process**, I oversaw the creation of an annual Core Assessment Report of general education at Grace College.
- 2023 **Accreditation Success** the HLC Final Team Report Mid-Cycle Review on criterion 4.A reported, "The Core Assessment Report, 2021-2022, was a good example [of Annual Student Learning Assessment Reports] and provided evidence that this assessment process is effective... During the site visit, faculty also reported that the assessment practices used by the Core faculty is a model for other programs for the coming cycle of APRs."

### COVID-19 Reporting

- 2020 – 2022 **Daily COVID-19 Reports**. The President of Grace College asked me to lead our COVID-19 reporting process. I collaborated with the head nurse, who oversaw a spreadsheet of every student who tested positive or was contact traced. I wrote a program in the R language to create a daily report for administration to update them on our daily numbers and provided my analyses and advice.

### Admissions Decision Making

- 2020 **Decision Model** I created a general linear model of student success based on their high school grades and their SAT or ACT scores in order for Grace College to decide whether or not to go test-optional.