

Kyle Kelley

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EDUCATION

Kenyon College

Bachelor of Arts, Double Major in Mathematics and Music - GPA: 3.99

Gambier, OH

Expected May 2025

Rossford High School

Valedictorian - GPA: 4.34

Rossford, OH

May 2021

RESEARCH

Research Challenges of Computational Mathematics (NSF Funded)

May 2023 – Jul. 2023

Moravian University

Bethlehem, PA

Project One: Structural Properties of Move (“Addsub”) Graphs Generated by Group Actions

- Introduced the concept of a move graph to visualize group actions based on a given matrix
- Presented weekly progress updates to larger Moravian REU cohort
- Published 2 sequences in the OEIS (A363893 and A363894), preparing paper for submission in the spring of 2024

Project Two: k -Total Bondage in Graphs

- Investigated network reliability parameters through a graph theoretic perspective
- Introduced a generalization of total bondage in graphs, expanding upon prior literature
- Presented weekly progress updates to larger Moravian REU cohort

Summer Science Scholars

May 2022 – Aug. 2022

Kenyon College

Gambier, OH

All Tangled Up: Geometry of Tangloid Curves

- Researched tangloids, piecewise curves created from rolling a wheel with a fixed pen around a series of arcs
- Generalized parametric equations from hypotrochoids to apply to tangloids
- Programmed using Maple and documented findings throughout the summer using LaTeX

CONFERENCE PRESENTATIONS

Joint Math Meetings

Jan. 2024

American Mathematical Society

San Francisco, CA

- **IIIME Contributed Paper Session** | Structural Properties of Move Graphs Generated by Group Actions**
- **AMS-IIIME Student Poster Session** | Properties of Addsub Configuration Graphs
- **AMS-IIIME Student Poster Session** | k -Total Bondage in Graphs

MathFest

Aug. 2023

Mathematical Association of America

Tampa, FL

- **Undergraduate Poster Session** | Addsub Configuration Graphs*

MathFest

Aug. 2022

Mathematical Association of America

Philadelphia, PA

- **Undergraduate Poster Session** | All Tangled Up: Geometry of Tangloid Curves*

* Awarded Outstanding Poster

** Awarded Speaker Prize

PRESENTATIONS

Kenyon Summer Research Poster Session | *Addsub Configuration Graphs*

Oct. 2023

Kenyon College Math Monday | *Addsub Configuration Graphs*

Sep. 2023

Lafayette College and Moravian University REU Conference | *Addsub Configuration Graphs*

Jul. 2023

Kenyon Summer Research Poster Session | *All Tangled Up: Geometry of Tangloid Curves*

Oct. 2022

Kenyon College Math Monday | *All Tangled Up: Geometry of Tangloid Curves*

Oct. 2023

WORK EXPERIENCE

- Music Recording Assistant** Oct. 2022 – Present
Kenyon College Gambier, OH
- Set up and maintain state-of-the-art audio equipment
 - Record department-sponsored performances and events
 - Mix and distribute audio tracks in a timely manner post performance
- Math and Science Skills Center Lead Tutor** Aug. 2022 – Present
Kenyon College Gambier, OH
- Provide weekly peer tutoring on a drop-in basis for students seeking help in classes ranging from Calculus 1, to Foundations (Intro. to Proofs), to Symbolic Logic
 - Assist students with homework, projects, test preparation, and other academic tasks
 - Work with students to help them understand key concepts learned in the classroom
 - Recognize different learning styles and diagnose student needs through active listening and questioning strategies
- Crossword Editor** Apr. 2022 – Present
The Kenyon Collegian Gambier, OH
- Construct a weekly crossword for the student-run newspaper for both digital and printed publication
 - Write unique clues that consisting of wordplay, pop culture, as well as Kenyon specific events and traditions
- Orientation Leader** Aug. 2023
Kenyon College Gambier, OH
- Selected as 1 of 60 Kenyon student to welcome the incoming class of first-years and transfer students
- Peer Note Taker** Jan. 2022 – May 2022
Kenyon College Gambier, OH
- Provided thorough class notes to Student Accessibility and Support Services for an introductory music course

EXTRACURRICULAR ACTIVITIES

- Jazz Ensemble** Vibraphone and Percussion Aug. 2022 – Present
- Percussion Ensemble** Jan. 2022 – Present
- Chess Club** President from May 2022 – May 2024 Aug. 2021 – May 2024

HONORS AND AWARDS

- The Kathleen “Kay” Locke Community Service Prize in Music** Awarded at Kenyon’s Honors Day Apr. 2024
- Goldwater Finalist** Highly competitive, merit-based award for undergraduate researchers in STEM Jan. 2024
- Angela Waite Recital** Invited to perform based on jury performance Jan. 2024
- Pi Mu Epsilon Inductee** National mathematics society dedicated to the promotion of math Apr. 2023
- Goldwater Finalist** Highly competitive, merit-based award for undergraduate researchers in STEM Jan. 2023
- Angela Waite Recital** Invited to perform based on jury performance Jan. 2023
- Wendell D. Lindstrom Award** Awarded to first- or second-year students with great promise in math Apr. 2022
- Angela Waite Recital** Invited to perform based on jury performance Jan. 2022
- Austin E. Knowlton Scholarship** Awarded to four Kenyon students interested in math Oct. 2021 – Present
- Merit List** Awarded to students with an average GPA of 3.55 or higher for the semester Fall 2021 – Present
- Franklin B. Walter Scholarship** Awarded to one high school senior from each county in Ohio Mar. 2021
- Eagle Scout** Highest rank achievable in Scouts BSA Sep. 2020

SKILLS

- LaTeX
- Mathematica
- Maple
- Magma
- GAP
- Sage
- Python
- Manim (Math Animation Engine)
- GitHub