

**KALILA LEHMANN
ACADEMIC PROFESSIONAL
SCHOOL OF MATHEMATICS
GEORGIA INSTITUTE OF TECHNOLOGY
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SCHOOL OF MATHEMATICS**

I. EARNED DEGREES

- 2020 Ph.D. in Mathematics, **University of Kentucky**.
Dissertation: *Scrollar Invariants on Tropical Chains of Loops*.
Thesis Advisor: David Jensen.
- 2017 M.A. in Mathematics, **University of Kentucky**.
- 2015 B.S. in Mathematics, **University of Alaska**, magna cum laude.

II. EMPLOYMENT HISTORY

- 2022–present **Academic Professional**, Georgia Institute of Technology.
2020–2022 **Postdoctoral Teaching Fellow**, Colorado School of Mines

III. HONORS AND AWARDS

- 2022-present **Recipient of 6 Thank a Teacher certificates**, Georgia Institute of Technology.
- 2024 cohort **Class of 1969 Teaching Fellow**, Georgia Institute of Technology
- 2024-2026 **Faculty Fellow**, CTL Teaching with Technology Partnership, Georgia Institute of Technology (Joint w/ Dr. Tom Kelly)
- 2024 **Georgia Tech Nominee**, Governor’s Teaching Fellows Program, University of Georgia
- 2022 **Nominated Institutional Faculty/Staff of the Month**, Colorado School of Mines.
- 2021 cohort **Project NExT Fellow**, A professional development program for recent Ph.D.s in Math by the Mathematical Association of America.
- 2018 **Wimberly C. Royster Outstanding Teaching Assistant Award**, Department of Mathematics, University of Kentucky. Awarded to one graduate student in the math department each year.
- 2015-2017 **Daniel R. Reedy Quality Achievement Award**, University of Kentucky. Presented to outstanding first-year graduate students, renewable for 3 years with good standing.
- 2015-2017 **Graduate Scholars in Mathematics Fellowship**, Math Department, University of Kentucky. Funded by NSF grant, awarded to promote diversity in mathematics.

IV. SUMMARY OF HIGHER EDUCATION ADMINISTRATIVE AND LEADERSHIP EXPERIENCE

Georgia Institute of Technology, 2022-Present

2022–present **Director of Scheduling**, School of Math.

The position is responsible for many administrative duties for the department. These include updating and setting the schedule of math courses offered each term, collecting faculty teaching preferences and making teaching assignments, ensuring all technical setup for courses is completed correctly, working with the registrar and other campus partners to schedule meeting spaces for classes and exams, monitoring enrollments and adjusting capacities for courses throughout all phases of registration.

The Director of Scheduling also serves as the Director of the school’s Permit Team, and manages the group of Academic Professionals and staff responsible for processing

student registration requests, questions, problems, and permit/override needs.

Fall 2024–present **Course Coordinator, Math 3012 (Applied Combinatorics).**

Math 3012 is a large course taught by the SoM to all Math and Computer Science majors at Georgia Tech. This course has grown significantly in recent years, and became coordinated in Fall 2024. The coordinator is responsible for sharing resources, including but not limited to notes, homework sets, solutions, practice exams, and suggested course schedules and syllabi. The coordinator also mentors graduate and postdoctoral instructors (including approving exams and final grades, and helping coordinate grading/LA support) and supports tenure track faculty teaching the course as needed. The instructor count each semester below includes me as an instructor.

- (1) Spring 2026: 611 students and 4 instructors.
- (2) Fall 2025: 759 students and 7 instructors.
- (3) Summer 2025: 79 students and 2 instructors.
- (4) Spring 2025: 604 students and 5 instructors.
- (5) Fall 2024: 650 students and 6 instructors.

Spring 2023–Fall 2023 **Course Coordinator, Math 1551 (Differential Calculus).**

Math 1551 is the first math course many students take upon their arrival at Georgia Tech, and therefore an important first step in their mathematical journey. The coordinator is responsible for writing the common syllabus, creating and maintaining materials such as worksheets and practice exams, setting up and maintaining the online homework system, collecting input from other instructors and writing/distributing common exams and quizzes, overseeing TAs, and assisting instructors with final letter grades, among other responsibilities. The instructor count each semester below includes me as an instructor.

- (1) Spring 2023: 225 students and 2 instructors.
- (2) Fall 2023: 851 students and 6 instructors.

V. EDUCATION AND MENTORSHIP

A. COURSES TAUGHT

Georgia Institute of Technology

Spring 2026	Math 3012: A Applied combinatorics	92 students
Fall 2025	Math 3012: QHS Applied combinatorics	167 students
Summer 2025	Math 3012: D Applied combinatorics	39 students
Spring 2025	Math 3012: G Applied combinatorics	94 students
Fall 2024	Math 3012: A,C Applied combinatorics	144 students
Summer 2024	Math 3012: B Applied combinatorics	57 students
Spring 2024	Math 3012: A Applied combinatorics	65 students
Fall 2023	Math 1551: C1-C4 Differential Calculus	119 students
Spring 2023	Math 1551: C1-C4 Differential Calculus	135 students
Fall 2022	Math 1551: E1-E4 Differential Calculus	135 students

Fall 2022 Math 1551: J1-J4 Differential Calculus	134 students
Colorado School of Mines	
Spring 2022 Math 112: Calculus II	
Spring 2022 Math 332: Linear Algebra	
Fall 2021 Math 111: Calculus I (2 sections)	
Fall 2021 Math 458: Abstract Algebra	
Summer 2021 Math 201: Probability and Statistics	
Spring 2021 Math 213: Calculus III	
Spring 2021 Math 301: Introduction to Analysis	
Fall 2020 Math 111: Calculus I (3 sections)	

B. ACADEMIC AND CAREER ADVISING AND GUIDANCE RESPONSIBILITIES

2022–present **Academic Advisor**, School of Math.

My primary responsibility as an advisor is to supervise all undergraduate students pursuing or considering a minor in Mathematics.

In this role, I assist students in successfully selecting and completing their course of study by holding individual advising appointments, attending and helping to organize group advising and community building events, organizing and running information and advising sessions for prospective students, performing graduation audits, collecting and processing override requests, and communicating with other campus partners to resolve student issues and questions.

C. EDUCATIONAL INNOVATIONS AND OTHER CONTRIBUTIONS

2025 **Author, Reference Document for Schedulers in the SoM.**

I compiled and organized information and institutional knowledge necessary to perform all scheduling duties for the School of Math into a hyperlinked easy-reference manual to share with our scheduling team. This extensive manual includes careful instructions for each task any member of the scheduling team regularly performs, and enables us to share skills and improve efficiency.

2024-2025 **Applied Combinatorics Curriculum**, Georgia Institute of Technology

As course coordinator for Math 3012, I revised the content of the course and created a new set of materials to share with the other instructors. This curriculum, housed in a custom Canvas shell, includes:

- A syllabus template
- Fill-in-the blank lecture notes (blank and completed versions, with editable source files)
- Canvas lessons covering the entire course, which match the content of the lecture notes
- Canvas quizzes covering each of the lessons to gauge student understanding
- Exam Banks
- Homework sets with solutions and rubrics
- Extra practice problems

As part of our Teaching with Technology partnership through CTL, Dr. Tom Kelly and I further refined these resources to be amenable to several course modalities and teaching styles. In particular, creation of these materials enabled significant pedagogical improvements to the materials for our Distance Learning section of this course. *All course materials for all sections are fully Title-II compliant.*

2024 SoM Registration Updates.

The School of Math scheduling team made two updates in 2024 to better facilitate student access to our courses:

- (1) Math minor students may now request one permit per semester to bypass major restrictions on their minor courses. This ensures they may continue to make progress on their math coursework with some priority over non-math students.
- (2) Working with partners in the registrar's office and other advisors, the SoM was able to facilitate pre-registration in Math 1711 and 1712 for upperclassmen still needing those courses. This process ensures those students are able to remain on track for graduation and help these degree programs move toward consistent compliance with USG core degree progression requirements.

2023 Differential Calculus Curriculum, Georgia Institute of Technology

I created guided lecture notes for Math 1551, a resource that supports first-year students in learning to take meaningful notes and having time in lecture to absorb new material. This resource is also useful as a guide for other faculty members teaching the coordinated course. As part of this project, I reorganized the material for the semester in response to comments from previous students and updated the course's MyMathLab assignments accordingly.

2022 SoM Teaching Preferences Form.

I created a new Qualtrics form to collect teaching preferences from SoM faculty, which significantly improved user experience and led to more accurate submissions.

2022 Co-author, Reference Document for Advisors in the SoM.

With Dr. Hunter Lehmann, I compiled and organized information and institutional knowledge useful in advising math majors and minors into a hyperlinked easy-reference manual for all current and future undergraduate advisors in the SoM.

VI. RESEARCH, SCHOLARSHIP, AND CREATIVE ACTIVITIES

A. PUBLICATIONS AND PREPRINTS

- (1) *On Scollar Invariants of Tropical Chains of Loops* with C. Cherry, in preparation.
- (2) *Scollar Invariants of Tropical Curves* with D. Jensen, preprint arXiv:2001.02710.
- (3) *The AWM at the University of Kentucky* with K. Ponto, C. Slone, *Fifty Years of Women in Mathematics: Reminiscences, History, and Visions for the Future of AWM*. Edited by J. Beery, S. Greenwald, and C. Kessel. Springer, 2022.

B. OTHER PUBLICATIONS AND CREATIVE PRODUCTS

- Spring 2026 **Building a Scalable Canvas Course Architecture in Combinatorics (Poster)**. Center for Teaching and Learning's Celebrating Teaching Day, Georgia University of Technology.
- Spring 2025 **3=0+1+2: Building Connections in Applied Combinatorics (Poster)**. Center for Teaching and Learning's Celebrating Teaching Day, Georgia University of Technology.

C. SELECTED PRESENTATIONS

- Fall 2025 **An Introduction to Generating Functions**. Undergraduate Seminar, Georgia University of Technology.
- Spring 2024 **Tropicalization and Young Tableaux**. Undergraduate Seminar, Georgia University of Technology.
- Fall 2022 **Tropicalization and Young Tableaux**. Undergraduate Seminar, Georgia University of Technology.
- Fall 2021 **Setting Up Finite Geometry**. Math Club/Society for Women in Math, Colorado School of Mines.
- Spring 2019 **Calculating Tropical Scroller Invariants on k -gonal Chains of Loops**, Midwest Algebraic Geometry Graduate Conference.
- Fall 2018 **Calculating Scroller Invariants Via Young Tableaux (Poster)**, AGNES (Algebraic Geometry Northeastern Series).
- Spring 2018 **The Truth About Lie Groups**, Topology Seminar, University of Kentucky.
- Spring 2018 **The Maroni Invariant of Trigonal Chains of Loops**, Algebra Seminar, University of Kentucky.
- Spring 2017 **Special Divisors on Marked Chains of Cycles**, Algebra Seminar, University of Kentucky.

VII. SERVICE

A. PUBLIC AND COMMUNITY SERVICE

- Summer 2025 [Co-Instructor] School of Math GIFT Program. I led some of the class sessions for this program, focusing on helping the participating teachers prepare their final deliverable projects.
- 2017 Graduate Assistant, Julia Robinson Math Festival. I helped design and guide participants through problems.
- 2016-2019 Graduate Assistant/Session Leader, Central Kentucky High School Math Circles. I wrote worksheets and problem sets to guide high school students through new mathematical concepts, and volunteered to lead or assist with running sessions where these worksheets were used.
- 2015 Graduate Assistant, UK High School Math Day for Women.

B. INSTITUTE CONTRIBUTIONS

- 2025-present **Vice Chair, Provost's Advisory Committee on Academic Scheduling** (PACAS)
- 2025-present **Teaching Mentor**, School of Math. I have served as the teaching mentor for 2 Visiting Assistant Professors in the School of Math.
- 2022-present **Chair, Scheduling Committee**, School of Math (*Per job description*).
- 2022-present **Member, Undergraduate Committee**, School of Math (*Per job description*).
- 2023-present **Member, Provost's Advisory Committee on Academic Scheduling** (PACAS)
- 2022-present **Faculty Advisor**, Undergraduate Association for Women in Mathematics Chapter at Georgia Institute of Technology.
- 2022-present **Letters of Recommendation** I have written 15 letters of recommendation for undergraduate students and one for a Visiting Assistant Professor while at Georgia Tech.
- Spring 2024 **Member, Institute Online Instruction Working Group**, Georgia Tech.
- 2023-2024 **Member, School of Math Academic Professional and Lecturer Annual Review Committee**
- 2022-2023 **Teaching Panels for Tenure-Track Candidates**, School of Math. I served on approximately 10 interview panels to share information on scheduling, teaching, and undergraduate advising.
- 2022-2023 **DEI Advocate, Academic Professional Search Committee** for 2 new Academic Professionals in the School of Math.
- 2022 **Studypalooza**, Georgia Institute of Technology. I attended at the end of the semester to assist Math 1551 (Differential Calculus) students in studying for their final exam.

C. OTHER PROFESSIONAL ACTIVITIES

- 2025 **Visiting Fellow** AP Calculus AB, College Board. I reviewed the AP Calculus AB test and provided feedback.
- 2023 **Visiting Fellow** AP Precalculus, College Board. I reviewed the AP Precalculus test and provided feedback.
- 2019 **Triage Judge**, COMAP Interdisciplinary Contest in Modeling.

VIII. PROFESSIONAL GROWTH AND DEVELOPMENT

- 2026 Accessibility Quest Training, Georgia Institute of Technology
- 2024 Critical Teaching Behaviors Asynchronous Reading Group, facilitated by CTL at Georgia Institute of Technology
- 2023 Safe Space Training, Georgia Institute of Technology (in both spring and fall semesters)
- 2022 Question, Persuade, and Refer (QPR) training, Georgia Institute of Technology.
- 2022 School of Math DEI Workshop, Georgia Institute of Technology.
- 2022 Implicit Bias Training, Georgia Institute of Technology.
- 2021 Facilitating Online Learning training, Colorado School of Mines
- 2021 Accessibility in Education training, Colorado School of Mines