

MATH EM@TICS

“All the ν 's fit to print”

Department of Mathematics | Ithaca College
September 22, 2025 | Vol. 7 Iss. 1

ν_0 : From the Desk of the Chair

The geese are honking, the clouds are settling in, a chill is in the night air, and Apple Fest is just around the corner. Well folks, the fall semester is underway at Ithaca College. We are ecstatic to welcome six first-year math majors, two of whom hail from the great state of Kentucky (this might be a "first" in IC Math history - Stan Seltzer, could you please check that for me?).

We look forward to the continued planning of a Data Science major, developed in collaboration with the Computer Science department, which will likely start in Fall 2026. We also look backwards in time with fond remembrances of all our students, faculty, and

others who support our department's vision, to prepare students for a broad array of careers by providing excellent educational opportunities and the necessary skills for students to contribute to an ever-changing society. We are seeking alumni to serve in an advisory position for the data science program - please let me know if you are interested in that or in sharing your career stories with our current students.

From all of us in the math department, I wish you a very happy sweater season. May the feasible region of your linear program expand day-by-day.

Ted Galanthay, chair

ν_1 : Data Talks Series

Data comes in all sorts of types and formats, is studied in many disciplines, and fuels insights ranging from scientific discovery to business strategy to addressing societal problems. The colloquium series for the 2025-26 academic year is titled "Data Talks" and will showcase data and data analysis from across disciplines on campus and in our local community. Come get a flavor of the data out there, how people work with it, and what they learn from it! Talks will occur bi-weekly on Mondays at 4:00pm in Williams 320.

Here's some of the talks for this semester. (Dates Oct 13 and Nov 10 are open! If you have an idea for the series, let us know.)

- **Sept. 15:** Ian Woods, Biology, *Comparative analysis of tardigrade locomotion, and the role of GABA in interleg coordination*
- **Sept. 29:** Stephen Sweet, Sociology, *Using the General Social Survey to Teach Students Data Analysis Skills*
- **Oct. 27:** Aaron Weinberg, Emilie Wiesner, Mathematics, *An introduction to deep learning via music genre classification*



ν_2 : Alumni Spotlight

This issue continues our interviews with IC math alumni. If you are a current or future student, we hope these will give you some perspective on your studies at IC and some inspiration for the future. If you are an alum yourself, we hope these give you a chance to reconnect or further connect with other IC math alumni. (Also, we'd love to interview you! Please email the chair at mathchair@ithaca.edu if this is something you might be interested in.) We hope you enjoy hearing below from Chris Martin MAT'13 and Kimberly Newman '19.

Interview with Christopher Martin

EW: *Hi, Chris. Welcome "back" to IC! (This interview is conducted by email, so the reunion is digital and asynchronous...) When did you graduate?*

CM: I graduated in 2013 from the MAT (Math) program.

EW: *Had you studied math before starting the MAT program?*

CM: I became an accidental math major in college. I started in Psychology, and then picked up a major in Philosophy pretty quickly thereafter. All throughout high school I had struggled in math, and it wasn't until I took a stats class my sophomore year with an extremely inspiring professor that everything clicked. For the first time in my life, math made sense, I was doing well, and the whole semester was filled with moments of curiosity, illumination, and wonder.

I decided that I needed to seize the opportunity while it lasted, and take advantage of this new-found appreciation and aptitude for mathematics. So, I worked with my advisor on a plan to triple major. I was told to attend Principles of Real Analysis at 8:00 AM the next morning, and I showed up bleary-eyed, but excited to learn. That stats class changed my life, and it's a lesson that sticks with me - as a teacher, you never know when you will offer a course that significantly impacts someone's perception of themselves and what they are capable of.

EW: *What do you do now? How did you get from graduation to where you are now?*



SF: I currently teach 9-12th grade math at Lehman Alternative Community School (LACS) here in Ithaca. My favorite courses to offer are Geometry, Probability and Statistics, and Precalculus. My work mostly focuses on fostering student engagement through collaborative, inquiry-based learning, with an emphasis on mathematical modeling, sustainability, and social justice. Outside the math classroom, I advise the school's Green Thumb Committee and lead extracurriculars that promote strategic thinking and community building, such as Rock Climbing and Game Theory. The teaching program at IC helped me establish connections at New Roots Charter School where I taught for three years, and then I took a job with LACS and have been here ever since.

EW: *What kinds of skills do you use in your job? How has the teaching program at IC helped you in your career?*

CM: I believe that there are three essential components to being an effective teacher – one needs to possess knowledge about the content, knowledge about pedagogy, and they must understand (and be able to connect with) their students. The teaching program at Ithaca College helped deliver all of those in abundance. When I entered the program, I had been out of the practice of doing math, and the program really helped me get my feet back under me very quickly.

The program also revolutionized my understanding of what it means to be a teacher, and completely upended my belief in what good pedagogy was. Prior to entering the program, I had several semesters of adjunct (aka part time) teaching under my belt. My students gave me high ratings relatively consistently, but I was often disappointed by their performance on the assessments I gave them. The program helped me to realize that there is a world of difference between being an engaging teacher, and being an effective one. I suspect my students prior to my entering the program thought that I was an entertaining lecturer, and so were willing to rate me as "good". However, that does not mean that they were learning as well as they could have been, had I actually had training

in pedagogy. I've since come to believe the saying (widely credited to Jenn York-Barr), "whoever is doing the talking is doing the learning."

Finally, the teaching program did an excellent job of stressing the importance of getting to know your students. Going to the student's extracurricular activities (such as concerts or athletic events) was a requirement, and it immediately became obvious as to why. Being able to greet a student at the start of class and say, "you did an excellent job in the play yesterday", lays the groundwork for a positive and productive relationship. The program really emphasized the importance of seeing and understanding the student as a whole person, and once students feel seen, they will put forth tremendous effort in your class as a result of that connection.

EW: *Do you have a favorite memory as a student at IC?*

CM: The MAT program has a tradition of visiting Frederick Douglass Academy [a college preparatory middle and high school in West Harlem, in NYC] for a week in the autumn. It was a powerful experience for all involved – being immersed in that culture of excellence, even if only for a brief time, really drove home to me what is possible when everyone in a community puts their mind towards being their best.

EW: *In terms of intellectual intrigue and growth, is there a math course you took at IC that stands out?*

CM: There were too many to mention them all here, so I might cheat and reference a few (and apologies to anyone I didn't get to shout out – you were all inspiring). To start, basically, anything Tom Pfaff taught seemed wildly unorthodox and delightfully mind-blowing. He has a gift for cutting to what matters. David Brown and Aaron Weinberg cotaught a class that was designed to link high school and college mathematics. They did a deep dive into functions that was very illuminating; at the start of the class it was eye-opening how even Senior level math majors still had unanswered questions about functions. It was provocative seeing how something we mathematicians can sometimes take for granted can offer up so much depth of exploration. (And humbling – the thought of trying to teach something so profound to an 8th grade student still kind of terrifies me.)

Finally, although not a math class, Peter Martin's class on the Exceptional Child in the Classroom revolutionized how I thought about differentiation. He gave us an assignment that had me completely stumped for

days, until I finally had the epiphany that led everything to fall into place (and reshaped my pedagogy). "Most best practices for students with special needs are best practices for all students." I don't need a student with an auditory processing disorder in my class for students to benefit from being able to both see and hear all content – every student benefits from both seeing and hearing all content. I haven't taught the same since.

Pizza (Pi) Party

All math majors, math minors, and math enthusiasts invited! Join us for a casual get-together. Get some pizza and catch up with fellow students and faculty.



Wednesday, September 24 at 5PM
Math Student Lounge (Williams 315)

EW: *What was your favorite non-math course at IC? Why?*

CM: I was also a member of the Noyce Program, which is designed, in part, to convince people to move from the business sector into teaching. (It worked; I left my position as a manager in a web design company.)

I found the program to be immensely valuable, particularly the requirement that we join our state and national professional organization and attend conferences. Those experiences instilled in me a profound appreciation for quality professional development experiences that I carry to this day. I am planning on attending (and presenting at) the AMTNYS 75th anniversary conference in November. If you happen to be reading this and plan to attend the conference as well, I'd be delighted if you chose to listen to my talk. It's called, "Delving into the Rich World of Student Mistakes and Misconceptions", and I can promise plenty of fascinating mathematical (and pedagogical) tidbits.

EW: *What advice would you have for a current student interested in doing what you do now?*

CM: If you are interested in the slightest, I strongly encourage you to explore teaching mathematics. If you haven't tutored, it's an excellent place to begin – most people who tutor quickly discover how rewarding and satisfying teaching feels. As I mentioned above, prior to this job I was a manager at a web design company. The pay was good, the work was interesting, the people were nice, but I still didn't feel fulfilled. (I like to joke that it was, "Chicken Soup for the Vegetarian Soul" – I should have felt content, but I just felt empty.) So, I returned to teaching and never looked back. I'm not going to lie, teaching is extremely demanding and extremely difficult. I'm

exhausted at the end of every day, but in the best of ways. Despite all the challenges and difficulties, I never in all the decade plus that I have been doing this work have felt like what I was doing didn't matter.

EW: *Is there another question I should ask you?*

CM: If anyone is looking for book recommendations, I have really been enjoying reading Eugenia Cheng's "The Joy of Abstraction". The book is an excellent foray into Category Theory and is delightfully accessible.

Interview with Kimberly Newman

EW: *Hi, Kim. Welcome "back" to IC! (This interview is conducted by email, so the reunion is digital and asynchronous...)*

KN: Thank you, Emilie! I'm glad to be here!

EW: When did you graduate? In addition to your math major, did you have any other majors or minors?

KN: I graduated in 2019 with a degree in Math and a minor in Spanish. I actually came to IC undeclared in the Exploratory Program and decided to become a math major during my sophomore year. I was always drawn to the math classes I was taking and knew I always enjoyed math as a subject.

EW: What do you do now? How did you get from graduation to where you are now?

KN: By the time this newsletter is released, I will actually be starting a new role. My most recent previous role is a Manager in Control Management at American Express. I support digital wallets products (such as Apple Pay, Google Pay, etc.) from a risk perspective. I ensure that the product team is considering the risk of their product and controls to put in place to mitigate that risk. This ensures that we are compliant with laws, regulations, and other kinds of risk, such as Privacy, Technology, etc. In my new role, I will be Manager in Business Enablement and Operations at Resy. I will be supporting Resy in the



expansion of their product to countries beyond the US.

After graduation, I got accepted to a summer internship program at Healthfirst, a health insurer in NY. I was working on a process improvement project. While I was an intern, a manager from a different department was looking to hire an entry level analyst to do data analytics and thought I'd be a great match given my degree in Math.

EW: What kinds of skills do you use in your job? How has being a math major at IC helped you in your career?

KN: I use analytical and problem solving skills. I'm always trying to solve a problem such as if there is a risk that customer data is sent to the wrong people, what control can be put in place to ensure that customer data is protected? Being a math major at IC has helped me in my career by building the foundation of those problem solving skills that I use every day.

EW: Do you have a favorite memory as a math major at IC?

KN: My favorite memory as a math major at IC is the time I would spend in the math lounge. I developed some great friendships as we all supported one another through our math classes. It was a great space to bounce ideas off of one another and to not feel alone.

EW: In terms of intellectual intrigue and growth, is there a math course you took at IC that stands out?

KN: The math course at IC that stands out the most to me is Abstract Algebra with Emilie. It was fasci-

nating to take concepts we always grew up to know to be true (such as $1+1=2$) and to prove why that is actually true.

Join a COMAP Team!

Are you interested in applying math collaboratively to solve a real-world problem? Or learning how to delegate effectively and improving your time-management skills?



Join an IC team to compete in the **COMAP Mathematical Contest in Modeling** and use your talents and skills to collaboratively solve one of six interesting, open-ended problems.

- Weekly training begins in September. The competition takes place in January.
- Any student whose taken two math classes can join.
- Contact advisor Ted Galanthay (tgalanthay@ithaca.edu) to get involved!

EW: What was your favorite non-math course at IC? Why?

KN: TMy favorite non-math course at IC was Business Analytics. It helped me build my Excel skills that I use in my career and I even got to use my math skills to build out formulas and tables. It was a great way to use the skills I developed in math classes and apply them to real-world problems.

EW: What other interests (e.g., another major/minor, team, or club, etc.) did you engage in at IC?

KN: I studied abroad for a semester in Sevilla, Spain. It was incredible to be fully immersed in the Spanish language and to experience another culture.

EW: What advice would you have for a current student interested in doing what you do now?

KN: The advice I would give is to develop your problem solving and analytical skills. In all my roles thus far, those skills have been the most valuable and transferrable.

ν_3 : Summer Highlights from the Math Department

Ted Galanthay organized a minisymposium on “Starting your own Research Experiences for an Undergraduate Program” at the 2025 SIAM Conference on Dynamical Systems in Denver, Colorado in May. Ted and faculty from West Virginia University, Clarkson University, and the University of Maryland shared their experiences in running summer undergraduate student research programs. In August, Ted presented collaborative research on the “Evolution of aggression in consumer-resource models” at a poster session at the NITMB MathBio Convergence Conference sponsored by the National Institute for Theory and Mathematics in Biology in Chicago, Illinois.

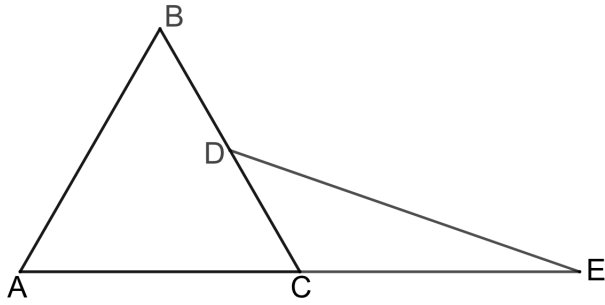
Aaron Weinberg, **Emilie Wiesner**, and **Dan Visscher** took a deep learning class and collaborated on a project that involved creating a neural network to identify the genre of a song from an audio file. You can see the project [at this link](#). Dan also reports that mathematicians sometimes do spend their time re-

searching new numbers! As part of his sabbatical, he found the number **21,195,856,003**. (It is the smallest known number of holes in a surface embedded in three dimensional space whose set of straight line geodesics is dynamically indecomposable—i.e., the “smallest known genus of an embedded surface with an Anosov geodesic flow”).

Leilani Adams ’28 (Writing major, Mathematics minor) worked on math research this summer through the Summer Scholars program with Professor **Dave Brown**. The project was about modeling homelessness through differential equations, and the base R program was utilized extensively in the modeling process. Leilani used the skills she acquired in Calculus throughout the project. At the end of the program, Leilani presented their results at the Summer Scholars Showcase and submitted a twenty-two page overview of the project in LaTeX.

ν_4 : What's the Problem... with Professor Brown

Equilateral triangle $\triangle ABC$ has side length 4, D is the midpoint of \overline{BC} , and C is the midpoint of \overline{AE} . What is the exact area of the triangle $\triangle CED$.



Send complete answers to Professor Brown at dabrown@ithaca.edu. Those submitting correct answers will have their names printed in the following newsletter. People who correctly solve all problems from Volume 7 of the newsletter will receive a special prize at the end of the year.

Editor: Emilie Wiesner