

Grad discovers passion for biostatistics, meaningful research

From modeling sea turtle migration to exploring cancer genetics, Outstanding Graduate Samuel Ingram credits New College mentorship for shaping his path to a PhD

By Melissa Stroud, ASU News
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Editor's note: This story is part of a series of profiles of notable [fall 2025 graduates](#).

For applied mathematics graduate Samuel Ingram, the journey to finding his academic calling wasn't defined by a single "aha" moment, but by a series of opportunities, mentors and discoveries that revealed just how powerful math could be in solving real-world problems.

Arriving at Arizona State University's West Valley campus unsure of his long-term direction, Ingram quickly found a home in New College's tight-knit mathematics community, where small classes, dedicated faculty and hands-on research experiences helped him uncover a passion for biostatistics and scientific inquiry.

Through internships, tutoring, leadership in the Arizona Outdoors Club and assisting with research, Ingram built an exceptional portfolio of work. Now, as he graduates with a degree in applied mathematics and prepares to pursue a doctorate in biostatistics, he reflects on the lessons, people and projects that shaped his undergraduate experience — and the limitless possibilities ahead.

Question: What was your "aha" moment, when you realized you wanted to study the field you majored in?

A: I didn't have one moment. It was more of a gradual realization. I always loved math and even double-skipped in high school, but I wasn't sure what career path it would lead to. During a summer internship at the University of Iowa, I discovered biostatistics and realized how deeply math connects to meaningful scientific work. After talking with professors, I learned applied math was the best preparation for that field, and the program at West Valley made me want to stay and continue down that path.

Q: Why did you choose New College?

A: I mostly chose it just because the applied mathematics program seemed so aligned with what I wanted to study, and because of the unique opportunity to have small class sizes and build connections with professors that you can't get in other places, or in other programs.

Q: What's something you learned while at New College that surprised you or changed your perspective?

A: I learned that math doesn't have to be divided into "theory people" and "applied people." Working with professors who do both, like Professor (Sheila) Miller, who specializes in set theory and mathematical modeling, showed me that having a mix of both perspectives is incredibly valuable and can make you a stronger mathematician and statistician.

Q: Which professor taught you the most important lesson while at New College, and what was that lesson?

A: I've been doing research with Professor Miller, studying the migration of sea turtles, and it's been a very interesting experience to begin to learn how to do research. Working with Professor Miller on research taught me the importance of documentation, writing clean code and justifying every step of the process. I made plenty of mistakes early on, like messy notes and unclear explanations, but her patience and guidance helped me grow. Those lessons were essential when I began writing my thesis.

Q: Tell us about your research project.

A: I studied migration patterns of Galápagos green sea turtles by combining satellite tracking data with oceanographic features such as sea surface temperature, current and chlorophyll levels. The goal was to see whether those features could be used to build a mathematical model to predict a turtle's path. It connected math, ecology and modeling in a way that made research exciting, and it pushed me toward pursuing biostatistics long term.

Q: What's the best piece of advice you'd offer to someone considering applying for college?

A: Follow what you find interesting. You may not know all the career paths that exist in your area of interest — I certainly didn't. But if you pursue the subjects you enjoy and say yes to opportunities, you'll discover options or career paths you didn't even know were possible.

Q: What would you say to a student considering your major? What makes for a strong candidate?

A: As I was tutoring, I heard a lot of students say, "I'm not a math person." You don't have to be a "math person." The most important trait is persistence — being willing to sit with a problem for a long time, even when it doesn't make sense yet. Passion and perseverance matter when you don't get a concept immediately. Understanding often comes slowly, but if you stick with it, things will begin to click.

Q: What are your favorite places to study or spend time on the West Valley campus?

A: Another thing that is great about the applied math program is that we have the Math Lab. The

Math Lab is a room full of whiteboards where people from the math department constantly come and go. It's perfect for collaboration and problem-solving or just studying on your own.

Q: What do you like to do outside of academics?

A: I really enjoy hiking and camping. I'm vice president of the Arizona Outdoors Club, which has allowed me to lead and participate in trips to the Grand Canyon, Sedona, Bryce Canyon, Zion and many other incredible places in the region. I'm also part of the Run Devils club at Tempe. Those communities have been a huge part of my social life.

Q: What are your plans after graduation?

A: I'm applying to PhD programs in biostatistics, including the University of Washington, University of Iowa, University of Michigan, University of Pennsylvania and the University of North Carolina. I'm excited to continue working at the intersection of mathematics, statistics and medical research.

Q: Where do you see yourself in 10 years or more — and how do you think New College has helped prepare you to get there?

A: I hope to be working in a university lab or medical research institute like Mayo Clinic or TGen, applying mathematical and statistical methods to biological problems. New College prepared me by connecting me with mentorship, internships and research opportunities I wouldn't have found on my own. Those experiences helped me discover biostatistics and build a strong foundation for graduate study.

Q: Part of New College's name is "new." What does the word mean to you?

A: "New" represents new opportunities. The kind of opportunities I found here at New College, I'm not sure I would have discovered anywhere else. New College opened doors that shaped my entire academic path.

Q: If someone gave you \$40 million to solve any problem, what would you tackle?

A: I'd probably continue with the main problem that I've been investigating so far, which is looking into the genetics of cancer. I'd like to research how we can apply statistical methods, new machine learning and AI to better understand the underlying events that cause cancer, and what genetics can tell us about what treatments are most effective and discover how we can use those statistical methods to figure out what treatments are best to help cancer patients.

Q: What scholarships did you receive, and what did they mean to you?

A: The Provost Award allowed me to focus fully on my education without needing to work unrelated jobs, which meant I could pursue internships and research that built my experience. I was also a Helios Scholar, which funded an internship that gave me hands-on experience in genetics, consulting and research. These were all experiences that shaped my career goals.

Q: Is there anything else you'd like to share?

A: There's one other part of my college experience that I found very enriching, and I think has

helped me a lot in my success, which is working at the ASU tutoring center, or the Academic Support Network. It always feels good to be able to help students with topics and kind of rediscover your own passion for how interesting some of the foundational material can be.

This story originally appeared on [ASU News](#).

Text image(s)



Applied mathematics graduate Samuel Ingram discovered a passion for biostatistics through hands-on research, close faculty mentorship and New College's supportive learning environment. Now, he's preparing for a PhD focused on using math to advance scientific and medical discovery. Courtesy photo

Gallery



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