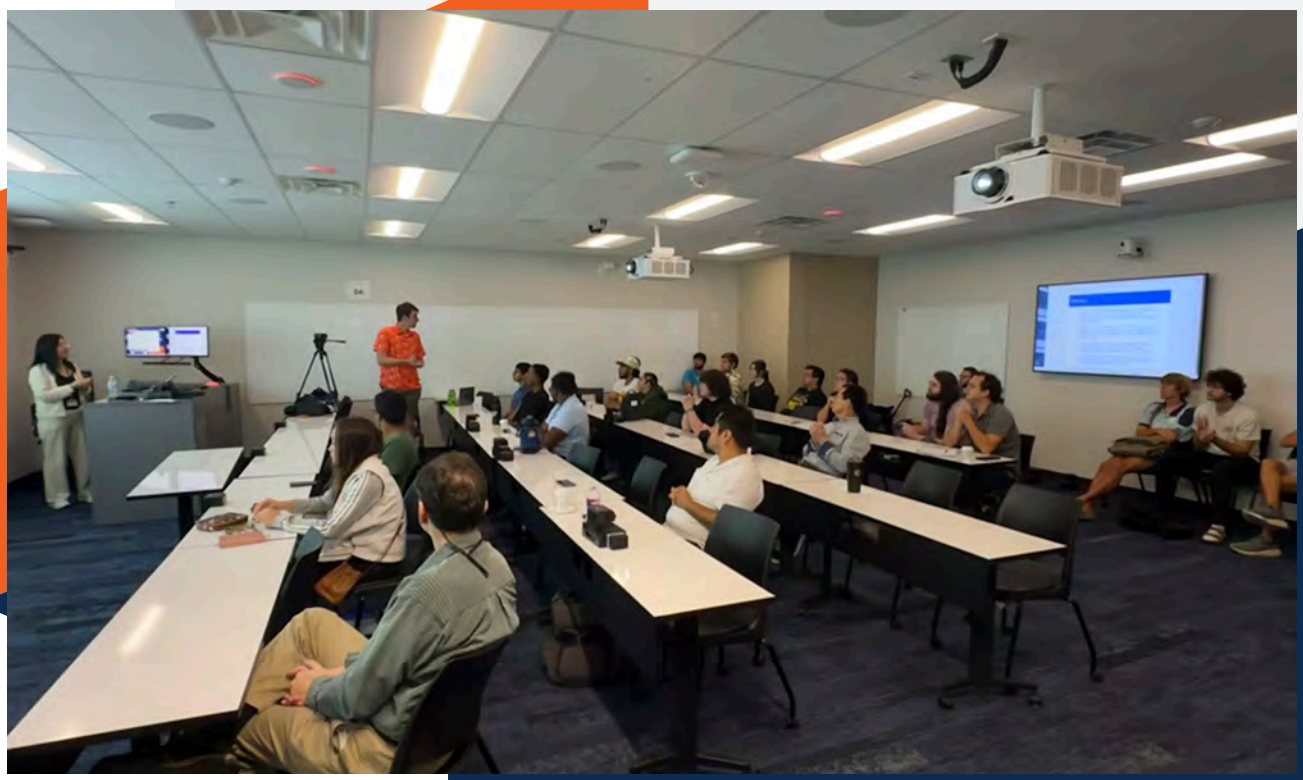
THE IRRATIONAL ROADRUNNER

AN APERIODIC NEWSLETTER OF THE DEPARTMENT OF MATHEMATICS AT UT SAN ANTONIO



Department of Mathematics
1 UTSA Circle
San Antonio, TX 78249

November 2026

On the cover: UT San Antonio Lightning Talks at the department colloquium, this one featuring Dr. Jingbo Liu, Dan Parman Visiting Associate Professor, who works on post-quantum cryptography and number theory.

Chair's Message


Chair: Stephen Wirkus

The Fall 2026 semester is in full swing with less than a month to go! I hope you are balancing things and your semester is going well! Unfortunately, life often has other plans and so what follows is a mix of strategies that may be helpful. At this point in the semester, at least half of your grade in a given class is likely determined but that also means there is still a large percentage of the grade left to be earned or lost. It's the time when if things are going well, the temptation may be to coast because things will be fine. And it's the time when if things are not going well, you may be trying to decide where to focus your efforts. It may sound obvious, but this is also the time when you should also be talking with your professors. They have the best idea of steps you can take to finish as strong as you can. What might not be so obvious is that this advice applies to those excelling as well! Please seek them out during office hours or chat after class, time permitting. Time spent with the math subject in question may only be part of the answer. How you spend that time with your math course is often the more crucial question. Your professor is an expert in the area and will not only know what worked for them but usually what has worked (and hasn't worked!) for other students. Sometimes working in isolation may be best, but more often "study buddies" can help keep you on track and you can help each other get unstuck on certain problems. More and more, math is a collaborative subject with different perspectives working together to solve our most challenging problems.

I encourage you to remind yourself what you love about math. Nearly all of us have taken a class that makes us question why we chose math as a major. We have crafted degree maps that put the puzzle pieces together so that by the time you graduate, you will be exposed to a sufficient amount of areas of math. Graduating with a B.S. or an M.S. in Math; Math of Data and Computing (MDC); or Math for Teaching likely makes you realize how little you know because of the vast number of unanswered questions in the various areas. Getting that degree is confirmation that you are equipping yourself with the building blocks needed to succeed in the field and elsewhere. And the degree is made up of these things called courses, which are in turn made up of various modules...you get the picture. Focus on what's in front of you. It will be over sooner than you hope or maybe not a moment too soon!

Stay strong as you push through these last few weeks of the semester!! Minimize the temptation to procrastinate. Whether you've put in all the work that you've needed up until now or maybe, in hindsight, you have slacked a little more than you should have, these final few weeks are often when things come together. Be sure to take advantage of faculty office hours, Math Gym hours (**Math Gym in MB 0.414**), and studying with your fellow classmates whether they share your same section or not. Check the website or the monitor outside the math office for Math Gym hours.

As you read through this newsletter, we have a new column - from the Math Career Champion. This is a new position and applies to almost any of you. Even if you have "Professor" in mind as your ultimate goal, many of the students you train will go get "regular" jobs and those may even fund your students. And if professor or teacher is not your goal, you've still chosen the right degree - read on!

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2026 Derivative Bee

On Friday, **November 6**, the third annual Derivative Bee took place as an electrifying afternoon for our current Calculus I (Division A) and post-Calculus I (Division B) competitors. The event was filled with energy, quick thinking, and plenty of mathematical intensity as students put their derivative skills to the ultimate test.



Division A winners (pictured to the left)
First Place: Kayode Alabi (Mechanical Engineering) taught by Jason Jia
Second Place: Ilyan Nashawati (Mechanical Engineering) taught by Igor Halfin
Wildcard Winner: Jayden Barragan (Electrical Engineering) taught by Jason Jia
Wildcard Runner-Up: Phong Duong (Computer Science) taught by Igor Halfin



Division B winners (pictured to the right)
First Place: Alex Hernandez (Computer Science)
Second Place: Darshan Sathish Kumar (Math of Data and Computing) taught by Gani Stamov
Wildcard Winner: Genesis Aban (Math of Data and Computing) taught by Gani Stamov
Wildcard Runners-Up: Gavin Cruz (Mathematics) taught by Christi Duffer **and** Chance Lunsford (Math & Physics) taught by Armando Arciniega and Priya Prasad

Thank you to all of our faculty volunteers! The Derivative Bee would truly not be possible without all of your help! Glenn Lahodny Jr. was the 2026 Derivative Bee Organizer with help from Reza Aghayan (problem writing, judging), Sean Beatty (problem writing, judging), Sage Bentley (problem writing), Yuriy Bulka (problem writing, judging, sign-in), Christi Duffer (problem writing, judging), Qiuchen Hai (problem writing), Jose Iovino (photographer), Tatiana Ivanova (problem writing, judging), Jason Jia (judging, sign-in), Su Liang (problem writing), Erin Lunsford (promotion, securing prizes), Cody Olsen (problem writing, judging), Priya Prasad (pizza coordination, judging), Cindy Roberts (Master of Ceremony for Division A, creating Kahoot used for qualifying rounds, judging, securing prizes, etc.), Ben Sencindiver (sign-in), Matthew Schurmann (creating Kahoot used for



Left: Faculty volunteers Schurmann, Olsen, Lahodny, Roberts, Prasad.

Right: Students and faculty in action!



Roadrunners at Work - from the Math Career Champion



Career Champ: Cindy Roberts

Ever wonder where a math degree can take you? One of our alumni works right here in San Antonio for KBR, a global science, technology, and engineering company headquartered in Houston, with roots going back more than a century. KBR has operations in over 30 countries and employs approximately 36,000 people, and its work runs from national security and space missions to energy and sustainable technology.

At KBR, two of the most common job titles held by UTSA alumni are Operations Research Analyst and Data Scientist. Operations research analysts use optimization, modeling, simulation, and statistics to find the best way to schedule, route, supply, or plan complex operations. Data scientists turn large, messy datasets into predictions and insights that help leaders make decisions. Neither job is just number crunching. Both depend on the skills you're building right now in calculus, statistics, linear algebra, and programming, along with the ability to explain what the numbers mean to people who aren't mathematicians.

Companies like KBR are looking for problem-solvers who are comfortable with data and can communicate clearly. That's exactly what a math degree trains you to do, so take a look at KBR's careers page (https://careers.kbr.com/overview/) and start picturing yourself there. Just as a heads-up, in January 2027, KBR's defense and space business becomes its own company, Trinzic, so you will see both names on their career page.



UGAR: Zachery Sharon

From the Math UGAR

Hello math majors! As you register for classes in the Spring and when planning for next year, keep in mind that we have three courses that have a sequel: Differential Equations, Linear Algebra, and Real Analysis. All math majors (that is, for a B.S. in Mathematics, in Mathematics for Teaching, or in Mathematics of Data and Computing) are required to take one or more of the initial courses, depending on concentration, but the sequel is not usually required. For example, DE II is not required of any major. Often, at least in my opinion, the sequel is where things get really interesting and you can apply what you learned in the first course. Other upper division elective courses offer a variety of topics, but these three sequels will help you build a more robust background in those key areas.

Also, now is the time to be thinking about applying for scholarships. The College of Sciences has several, which you can find in the scholarship hub: https://onestop.utsa.edu/scholarships/hub/, so please take a few minutes to look through them. There are also tips on completing the General Application. Some are awarded based on financial need, some are awarded based on merit, and a few consider both. Some have other conditions like major or residency, and at least one gives preference to math majors. Each year, some of these go unused because no one even applies for them! If you have any questions about math scholarships, email ilse.cooper@utsa.edu, and for questions about scholarships in general, email cos.scholarships@utsa.edu. You can always contact me at zachery.sharon@utsa.edu with any other questions you have.


GAR: Jose Iovino

From the Math GAR

We are in the second year of our consolidated M.S. degree where you can choose between concentrations of Pure Mathematics, Applied-Industrial Mathematics, Mathematics Education, and General Mathematical Studies. (Previously, those were separate degrees.) The Graduate Catalog gives the details of the degree but sometimes the presentation can be overwhelming. We have created a flowchart that helps you visualize what is expected. You can find this at https://sciences.utsa.edu/mathematics/resources.html.

Thinking of pursuing a doctorate in the mathematical sciences? If you are graduate student thinking of continuing on to a doctoral program or an undergrad who wants to go directly to a doctoral program after here, deadlines often range from Dec 1 through Feb 1 so please be proactive in identifying programs. Please use your faculty as resources!

Some Advice for Students

In whatever math course you are in, I can't stress the importance of being uncomfortable! Math will make you stumble, it may even make you fall, but you have the resilience to get up and go at it again. Never underestimate the power of pencil and paper (or iPad and stylus) to write down what you know and understand so that someone can help you realize what you may be missing. Too many times, students don't seem to want to write -- writing and being wrong is okay, but you need to follow it up with trying to get it right! It can take multiple attempts and this is okay.

Students in lower division math courses

A lot of math you have taken up to this point may have traditionally been computational in nature but you have been exposed to a deeper way of thinking about math in MAT 1313 Algebra and Number Systems, and then in MAT 2313 Combinatorics and Probability. Even if you love the computational aspect, knowing the theory will make you stronger in the computations! Enjoy the aspects you love but don't shy away from the theory. Regardless of whether your major is Math, Math for Teaching, or MDC, there is a core set of math courses you will take. Talk with your fellow classmates and the professors teaching the courses you are taking about your plans or lack of them! Sometimes a particular course can change your trajectory. Be open to that and ask! If you haven't been to the **Math Gym in Main Building (MB) 0.414**, consider going. Not that you necessarily need the help but it's staffed by upper division students and graduate students and you can work with your fellow students on upper division class work too.

Students in upper division math courses

Keep engaging in your classes as well as with your classmates and professors as we work to transform you to be ready for the next level! If you are taking upper division math classes, you are very likely realizing that math can be very theoretical, if you hadn't already! It is important that you really grapple with the class material. You may think that you'll never use some topic again but you would be shocked at how overlapping math can be and how techniques or theory in one area can sometimes pop up in seemingly unrelated areas. Do the problems you are assigned, working with and getting help from your fellow classmates in study sessions you all organize. There are plenty of spaces in Flawn and around campus where you can get together to study most of the time and laugh some of the time.

It's usually around this time in your math career where you may realize that you actually need to read the book. In earlier classes, you may have been able to get away with working problems and following examples in class. In most upper division math classes, you will actually need to read your book. And usually "read" doesn't mean once. Quite often, a page, a theorem, sometimes even a line of a proof

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might take you hours to get through. This is okay as long as you are not just staring but instead are doing calculations, working examples, or doing other reading to help. There is a related joke I remember appreciating in grad school: a profesor has a board full of work in his office and calls a colleague over. He points to a particular step and asks “is this obvious?” The colleague looks at it, thinks for a few minutes, writes frantically for about 30 minutes, thinks for a few more minutes, looks at the board again and answers “yeah, it’s obvious.” Sometimes math feels that way but it takes the extra work and steps before “it’s obvious.”

Seminars and colloquia

There is always excitement when we have Faculty Lightning Talks! This is a great way for you to get the 10-15 min overview of the types of problems they work on. However, I want to encourage you to attend some of the other colloquium dates we host as well. It may be the case that you don’t understand more than the first 10 min or it may be the case that you don’t think you have much interest in the topic. But attending these helps build and sustain a healthy department culture. We all have our specialties as faculty and our favorite topics as students but the department colloquium is often a place where we push all that to the side and just attend as people who are interested in math as a subject! Over the course of the semester we have talks from pure/theoretical math, applied math, and math education folks telling us about their passions and what gets them up in the morning to work. Think of this as a little extra development for you. While it would be great if you could attend all of the colloquia, maybe just start off by aiming for one per month. They are on Fridays 4-5pm this year. Please look for flyers on the bulletin board outside the department or check on the math webpage on the right tab under Seminars & Events. All students, undergrad or grad, as well as faculty or others are welcome to attend. Cookies and coffee are served!

Student Research - Opportunities

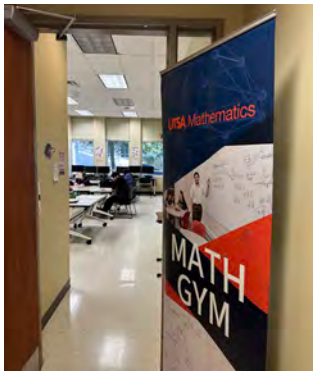
Whether you are an undergraduate or a graduate student, it’s never to early to think about research. This great hands-on experience is often what motivated your professors to continue to their studies in math in graduate school and beyond. If you are a junior or sophomore taking junior-level math courses, this is the perfect time to start thinking about **paid math research during the summer**. These are collectively called **Research Experiences for Undergraduates (REUs)** and are opportunities for undergraduate students to conduct research in math. Different locations have different requirements so don’t just assume it’s not for you. Please do some Gogle searchers for places and topics and ask your math faculty for advice if you are unsure. These can be competitive so if you are considering this, don’t just apply to one. Deadlines are often mid-December through mid-February so please search early!

Research at UT San Antonio

If you can’t apply to an REU or don’t get into an REU (or even if you do!!), consider asking one of your professors if they have research projects that you could work on. Not all do, and it would be an indpendent time commitment, but the opportunity is life-changing! Ask, and if the answer is no, ask someone else. Check out our department website for some of the research areas that our faculty work in.

Present your research at conferences

When working on research, whether from an REU or a professor here, you should let them know that you would like to present the work once it gets to a certain place. This way, they can keep in mind various checkpoints and conferences they may come across. There are many conferences that allow students to present and there is often funding available for students to attend. Even if it a local conference, it can be worth the day trip or weekend excursion to go. This applies to both undergraduate students and graduate students. Don’t only rely on your professors to give you this info - search for yourself and ask for their feedback on what you find.



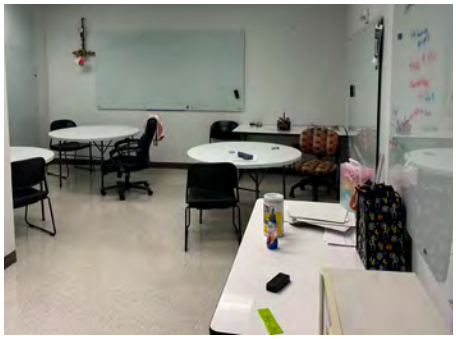
Math Gym: MB $\sqrt{2}-1 \approx$ MB 0.414

Located in Main Building (MB), officially in MB 0.414 (but we know people round), the Math Gym is a space for you! Keep engaging in your classes as well as with your classmates and professors as we work to transform you to be ready for the next level! Consider visiting for help in your lower division classes. Consider being PAID to work in the math gym if you've taken through Calculus II and enjoy helping others. Your fellow math majors may start off sitting at the tables for help and gradually move into walking around the tables to help others.

We have hours where tutors will be available for particular classes, although it's quite often the case that you can find help for any class when the Gym is open. We have Targeted Workout Sessions that can provide extra targeted support for the given class. Be sure to check out the latest hours at our website and cycling through the monitor outside the math office, FLN 4.01.10.







Graduate student photo gallery

We have a great **gallery of our current graduate students**, so please check that out if you haven't already done so: **https://sciences.utsa.edu/mathematics/students/grad-students.html**

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Student Spotlights and Faculty Spotlights

We finish by highlighting 2 of our students and 3 of our faculty. They are featured in the next 5 pages of this newsletter. Grad student Kyana Ross and undergrad Joshua Hamilton as well as faculty Cody Olsen, Matthew Schurmann, and Erika Tatiana Camacho share a little about themselves. Congratulations to all and keep up the great work!

Student Spotlight

Kyana Ross

MAJOR: APPLIED MATHEMATICS

HOMETOWN: SAN ANTONIO, TX

FAVORITE COLOR: ROSE GOLD

FAVORITE ARTIST: BRUNO MARS

FAVORITE MOVIE: THE PRINCESS AND THE FROG

FUN FACT ABOUT YOU: MY FAMILY AND I WERE UTSA FAMILY OF THE YEAR FOR 2024-2025

FAVORITE DISTRACTION: I LIKE TO SEW COSPLAY COSTUMES.

WHAT HAS BEEN YOUR FAVORITE CLASS SO FAR (AND WHY)?

My favorite class so far has been Optimal Control and Calculus of Variations because I felt I got more insight into the type of math I would do in my career of choice.



WHAT ARE YOUR CAREER GOALS?

My career goal is to eventually work for NASA.

IF YOU COULD HAVE ONE SUPERPOWER, WHAT WOULD IT BE?

It would be to fly, so I can travel without spending money on plane tickets.

WHAT ADVICE WOULD YOU GIVE THE INCOMING FRESHMAN?

I would let them know that it is okay to fail sometimes and possibly hit a low because it comes with a valuable life lesson and makes all your future accomplishments even more impactful.

Student Spotlight

Joshua Hamilton

MAJOR: MATHEMATICS

HOMETOWN: SAN ANTONIO, TX

FAVORITE COLOR: RED

FAVORITE ARTIST: GEORGE HARRISON

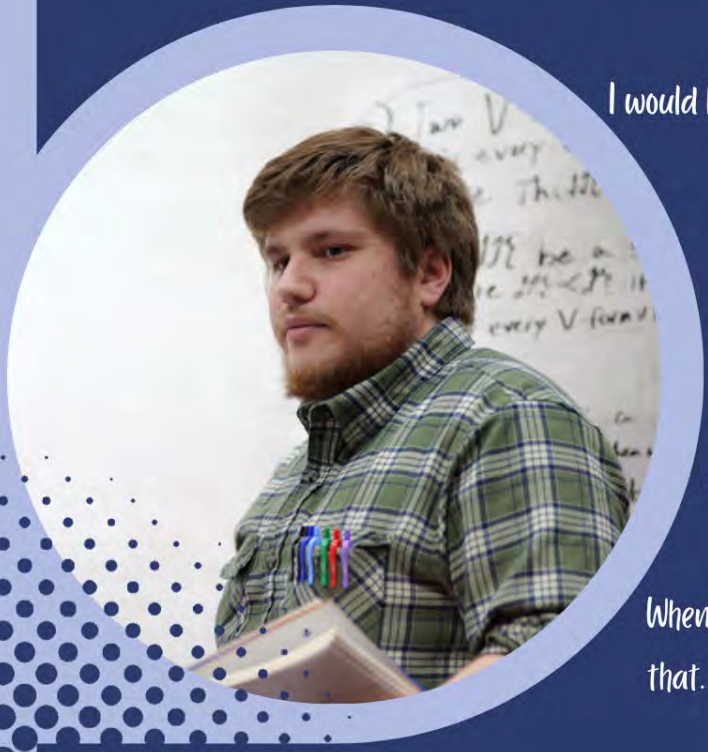
FAVORITE MOVIE: AMADEUS

FUN FACT ABOUT YOU: I USED TO MAKE HARDTACK AND TAKE IT TO SCHOOL IN HIGH SCHOOL. IT'S A CHEAP SUBSTITUTE FOR BEEF JERKY!

FAVORITE DISTRACTION: I LIKE TO READ WIKIPEDIA ARTICLES AND WATCH MOVIES

WHAT HAS BEEN YOUR FAVORITE CLASS SO FAR (AND WHY)?

Real Analysis I with Dr. Popescu. It is a fun introduction to the beautiful theory of analysis.



WHAT ARE YOUR CAREER GOALS?

I would like to stay in academia and do research in pure math.

IF YOU COULD HAVE ONE SUPERPOWER, WHAT WOULD IT BE?

Turning into animals like Beast Boy would be pretty cool, I think.

WHAT ADVICE WOULD YOU GIVE THE INCOMING FRESHMAN?

When there is a subject that impels you to study, jump on that. Find a good book and get to reading. Take as active a role in your own education as you can.

Faculty Spotlight

Cody Olsen



Undergrad major: Mathematics

Graduate degree: Mathematics

What research and/or teaching interest(s) drive you?:

Teaching: Finding ways to give students a chance to learn actively in the classroom without having to rush through material.

Research: Borel Equivalence Relations and what structures you can put on them. I've also done a few seminars with undergraduate students where we talked about specific mathematical games like 'Cops and Robbers' and 'Chomp'.

Favorite food: Big fan of pizza. I could do just about anything for toppings but my personal go-to's are ham and green pepper.

Favorite non-academic activity: Hockey. Avid Red Wings fan since I was little.

Favorite city that you've lived in or visited: I'll always have a soft spot for Detroit since I grew up in a few different suburbs of that city.

Languages spoken: English.

What advice would you give a student thinking about a career in math?

Being excited to learn about mathematics opens a lot of doors, so many doors sometimes that it can feel overwhelming. I'd tell students to always be on the lookout for different ways that what they're learning can be used. This can include (but is definitely not limited to!) going to events hosted by the university or politely reaching out to a faculty member that's involved in that field. Find me a math professor and I'll find you someone who's just itching to talk about their field.

Specifically, don't feel like you don't belong, or that you might be judged for reaching out. If you saw a flyer for an event; you are wanted there!

Faculty Spotlight



Matthew Schurmann

Undergrad major: B.S Mathematics minor Applied Statistics

Graduate degree: M.S Applied Industrial Mathematics

What research and/or teaching interest(s) drive you?: Student success

Favorite food: BACON! and Wings

Favorite color: black

Favorite non-academic activity: Football, hanging out with the pups, and watching Doctor Who

Favorite city that you've lived in or visited: Las Vegas, not to gamble, but because I got to see Garth Brooks perform his first post-Covid concert there.

Languages spoken: English

What advice would you give a faculty thinking about a career in math? Specifically for a career in teaching mathematics, be ready for anything. Students are coming from all walks of life and it is our job to meet them where they are. This means being innovative in your teaching methods, being willing to try new things, and always being willing to adapt.

What advice would you give a student thinking about a career in math? Find something that drives you to be better and do better. Whatever aspect of mathematics you are interested in should be something that makes you feel creative and something that you are passionate about. Making money is nice but finding something you love to do is priceless.

Faculty Spotlight



Erika Tatiana Camacho

Undergrad major: B.A in Mathematics, B.A. in Economics (Wellesley College)

Graduate degree: M.S and Ph.D. in Applied Mathematics (Cornell University)

Current research interest(s): Mathematical models and complementary experiments in retinal physiology

Favorite color: Pink, turquoise

Favorite non-academic activity: Hang out with my family and friends, watch crime shows, painting

Favorite city that you've lived in or visited: (lived in) Boston, Old Town Alexandria (VA), Paris

Favorite food: Sushi

Languages spoken: Spanish, English

What advice would you give a student thinking about a career in math?

Math is at the heart of science. While you might not be doing an application, whatever you're working on has a potential or immediate impact in some area of the sciences.