

Evelyn Lamb: [00:07](#) Welcome to the Lathisms podcast. I'm your host Evelyn Lamb. In each episode, we ask a Hispanic or Latinx mathematician to talk about their journey in mathematics. Today, we're happy to welcome Adriana Salerno to the show. Can you tell us a little bit about yourself?

Adriana Salerno: [00:25](#) Sure. I am an associate professor of math at Bates College, which is a tiny liberal arts college in Maine. I am originally from Caracas, Venezuela and that's where I grew up, where I went to college. Then, I went to graduate school at the University of Texas at Austin. That's when I moved to the US and then I got this job at Bates. I've been there ever since.

Evelyn Lamb: [00:53](#) What were some of your earlier experiences with mathematics? Did you know early on that you wanted to be a mathematician?

Adriana Salerno: [00:58](#) No. I actually took me a while to just even get here. I mean, I don't think I've ever been sure of anything. I've always been ... let's rephrase that. I've always been interested in lots of different things, and so when I was a kid, I liked math. I was good at math. I liked solving puzzles and things like that, but I also really liked reading and music, and so, you know, I had this dream that I was going to be some sort of writer for a while, but then when it came time to go to college ... So, I went to university in Venezuela. There, you pick your major before you go to college, and so when I was 17, and I was applying to colleges, I had to actually pick the major I wanted, and you apply to a major, in a specific college. That was very hard for me to decide.

Adriana Salerno: [01:55](#) So, I went for math, but mostly because I was like, this is probably the hardest thing for me to do ... to bounce back to, right? So I figured if I start doing math and I don't like it, I can go back to communications, which was the other top major choice for me. I thought that would be easier because I'm always going to be reading and writing anyway, but the other direction just felt a little bit scarier to me so I just started with math. But it wasn't really like a, I know this is what I want to do. While I was in college, there were ups and downs. It was pretty difficult. It was a very small program. There weren't a lot of other students, and so most of my friends were in engineering or other places. I was kind of burnt out and so I decided to take a year off between college and whatever else. During that year off, I was like, I kind of miss math. So, I applied to grad school, but I never really had like this moment where I was like this is what I am or what I want to be. I still don't know if this is what I want to be.

- Evelyn Lamb: [03:02](#) Yeah. Did people encourage you in college to pursue mathematics?
- Adriana Salerno: [03:11](#) My mom really liked math, and she was sort of like the person that helped me with my math homework in high school, so that always made it seem a little bit more doable, in a sense. I had a female role model at home. Outside of my house, people were like, "Well, if you're good at math, why don't you study engineering instead?" A lot of people were confused as to why I would just want to study math. No one was actively against it, they were just like not really understanding about that particular major.
- Adriana Salerno: [03:49](#) And then during the major, there were people who were ... even professors and students who were supportive and some who were very much the opposite of that. So yeah, I had a professor who actually told me that I probably shouldn't be a math major because I got the proof of Cantor's diagonalization argument wrong in my exam, my first analysis exam, and I was like ... Yeah, so I basically went to the professor and I said, "I don't understand what I did wrong," which one does when one is a student, and he said, "If you don't understand what's wrong with this proof, then you shouldn't be a math major."
- Evelyn Lamb: [04:33](#) Wow.
- Adriana Salerno: [04:34](#) Yeah. I know. And I mean it's not like an easy proof, right? It's Cantor's diagonalization argument, and I was, you know, 18 and in my first analysis class. But ... and this is where I think that having that support at home was helpful, because I ... I didn't doubt my abilities. If I had been a little bit more insecure that probably would've been it for me, honestly. That was a pretty harsh thing. But, I, in that moment, was just like, "Oh I'll show you that I deserve to be a math major." But, that's one moment that I look back to and I say ... I imagine all the people that this guy prevented from being math majors because of that attitude, and that we shouldn't have a system that only works for stubborn people like me, who are like, oh I'll show you. Right? I look back to that moment a lot as maybe a moment that ... not necessarily where I knew I wanted to be a mathematician, but I think that was a moment where I knew what kind of teacher I wanted to be, I think ... I mean later. Later, I realized that is exactly the opposite of what I want to be. Yeah.
- Evelyn Lamb: [05:54](#) Mm-hmm (affirmative). And today, are there mentors or people you look up to in math?

Adriana Salerno: [06:00](#) Yeah. There are a few. One of the things I like is that I think of them all as my friends too. A person that I always looked up to when I started graduate school was Karen Uhlenbeck, who was at the University of Texas at Austin, and she was this sort of amazing mathematician, really kind person, really interested in supporting students and in particular, female students, and so she was a really huge presence in my graduate career. She wrote one of my letters of recommendation when I went on the job market, so she was a pretty amazing person. She was the one that started the math circle in Austin, and so she was doing all this sort of outreach and support. She was just a really incredible person to have around when I was in grad school.

Adriana Salerno: [06:56](#) And then others, I think ... I definitely have some people who have been super supportive and friendly. Again, these are people I consider my friends like, Joseph Silverman, in Brown, has been a really, a huge ... I don't know supporter in some weird way. He's just such an encouraging and positive person. And then, nearby, Fernando Gouvêa, who's at Colby, has been a nice person to have around also ... also from South America, also a number theorist, so it's been fun to have that person in Maine. But yeah, I think that ... I don't know, there are people who support you and elevate you, and those are people that I love having nearby. Leila Schneps, who's a mathematician in France. I did some projects with her when I was on my first sabbatical, and she's been a friend since, and a supporter and a collaborator. I absolutely adore my collaborators. We're all basically the same age, but I find them very inspiring and awesome as well.

Evelyn Lamb: [08:14](#) Since you've mentioned your great collaborators, could you tell us a little bit about your research?

Adriana Salerno: [08:19](#) Sure, yeah. I work in number theory ... number theory broadly defined. So, I have projects in lots of different areas of number theory, but a lot of it is sort of like, how does number theory interact with something else? Maybe that's a little vague but one of the projects I'm working on is sort of understanding this conjecture that comes from string theory, and that has been adjusted to sort of algebraic geometry and differential geometry, and then starting to see what the implications of those types of conjectures are for number theory. And so, just looking at these conjectures coming from physics, but through a number theory lens. That's one of the things that I enjoy doing, is sort of seeing those places where different areas of math connect.

Adriana Salerno: [09:18](#) I've also been working on multiple zeta values, and those sometimes appear in physics, but they can also be very

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combinatoric or very analytic, and so these are sort of things that I like to do. I just did a project with Joe Silverman, and it was sort of a dynamics inspired problem, but it was about p-adic series and convergence of certain p-adic series.

Adriana Salerno: [09:51](#) And so, you know, it's really hard to describe ... This is one of the comments I got from my tenure promotion packet was like, "You do work on too many things. Pick one thing." I said, "But, I love math, and I love good problems, and so I'll keep probably working on things that seem interesting, even if they're not completely related to each other." I feel like philosophically, there is a theme to my work, but it's more like how does number theory tell us more about other parts of math.

Evelyn Lamb: [10:26](#) So it sounds like you have a lot of projects going on at once and a lot of different collaborators that you're working with at once?

Adriana Salerno: [10:33](#) Yes. Yep ... although most of my projects are sort of nearing the end right now and I'm a little bit nervous about what I'm going to work on next. But yeah, I actually really love collaborating. I'm the kind of person that needs to talk through ideas. I do like working on my own sometimes, but I definitely need to have conversations about the things I'm working on, and I also need to collaborate with people who are supportive and smart, but not in competitive, or aggressive ways. I don't know if you know what that means, but I feel like ... and some of this comes from ... So, many years ago, I went to the first Women in Numbers, or Women in Number Theory conference, and that was one of my favorite first collaboration experiences. And I really like that feeling of working with people that are actually making each other better. I don't know, sometimes when I studied, even in grad school, with other people, I felt like there was some part where people were still competing or one-upping each other, or trying to show off. I've been really lucky in my collaborations that everybody is actually elevating each other's work.

Adriana Salerno: [12:10](#) I mean, I say I've been lucky, but I think if I have any research superpowers, is that I pick my collaborators really well. I think that's the thing that I do best in terms of research. I think I'm okay, as a mathematician, I'm fine, nothing impressive in my opinion, but I do think I pick my collaborators really well. They're just people that I work well with, I guess is what I mean.

Evelyn Lamb: [12:39](#) Okay. And how do you overcome challenges in your work, either teaching or research related?

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Adriana Salerno: [12:47](#) I mean, it's a little bit ... the collaboration idea still. I like to have a network of people that I talk to. There are people I talk to about teaching. There are people I talk to about research, so my collaborators, like I said, are also my friends, so sometimes I'll get a little frustrated with something I'm doing and I can just call them and be like, "I just feel really incompetent at this today," and then I can have a good conversation with them where they bring me back to reality a little bit when I'm feeling insecure or something, about my research.

Adriana Salerno: [13:29](#) And with teaching, it's the same thing. I have people ... mostly people from graduate school that I can just email or call, and be like, "This is not going well in my class, and I don't know how to figure it out," and then we discuss solutions and ways to get this going. I mean, I really definitely am a social academic, and a social mathematician. I've realized that I can't just figure everything out on my own, and so one of the main things I do is use my network to work through these challenges and to have support through these challenges.

Evelyn Lamb: [14:13](#) Do you have thoughts about Hispanic Heritage Month?

Adriana Salerno: [14:16](#) Sure. I think that, especially with the Lathisms stuff, I really like that we're finding ways to elevate ... I'm using that word a lot, but to elevate non-traditional ... or the people we don't expect as mathematicians, or the people that are not dominating in the numbers. I love, also, the Mathematically Gifted and Black series. I love the Lathisms series. I'm very involved with the stuff that the Association for Women in Math does. I think that there's ... or Spectra is a great group too. And I think that there's ... I'm really excited that there are ways in which we are highlighting the work of all sorts of mathematicians. And then in particular, Hispanic Heritage Month, I think that in this country, there is a huge and growing number of Hispanics, and Latinos, and Latinas, and Latinxs, and I think that it's important to acknowledge sort of that group, or that part of a population, and the heritage, and the history that they have.

Adriana Salerno: [15:31](#) For me, personally, especially as someone who passes as white and sounds American, I find that just having moments to think about my background, my heritage, my history. I grew up in a different country, which is slightly different from Latinos or Hispanics who grew up in the US, but for me, it's very important to keep that connection to where I came from. I mean, I lived more than half my life, still ... eventually it will be less ... but more than half my life, I lived in Venezuela, and so I like having a moment to remember that for myself, but then

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to think about all the people connected through immigration or just ... I mean, maybe some people have been here for generations, but we all have sort of this shared part of our life. It's just nice to celebrate that.

Evelyn Lamb: [16:37](#)

Well, thank you a lot for being on the show, Adriana.

Adriana Salerno: [16:40](#)

You're welcome.

Evelyn Lamb: [16:43](#)

Thank you for listening to the Lathisms podcast. It's produced by me, Evelyn Lamb, and made possible by a Tensor-SUMMA grant from the Mathematical Association of America. Our music is Volveré by La Floresta. Lathisms is an initiative to celebrate the accomplishments of Hispanic and Latinx mathematicians. It was founded in 2016 by Alexander Diaz-Lopez, Pamela Harris, Alicia Prieto Langarica, and Gabriel Sosa. You can find more information about the project at lathisms.org. That's L-A-T-H-I-S-M-S-O-R-G. Join us next time to hear from another inspiring mathematician.