1 Weverton: So Today, we're going to do something similar to what we did yesterday. And I call it the life story interview. So I'm going to try to go back from your time in Elementary School until now. And I am going to keep you asking you questions trying to get those stories. Okay? [Kate: Okay]. All right. So Kate can you tell me about your elementary school experiences?

2 Kate: Sure. i frequented to three different elementary schools. Because my family had moved when I got to third grade. And I was in some like, Advanced Placement class in elementary school starting in third grade. I went to public school, that might be important. I had a really great fifth grade math teacher. She would, she would let me and like some other students that were really doing well in the class, like, go off on our own and try like harder problems she gave us. There's also like an after school math thing that she did, like teaching us like pre algebra, and things like that. So I did that in school, I did other clubs and things in elementary school. I did like chess club.There's like a little news broadcast that the school put on, and I helped with that in the mornings.

3 Weverton: So What was the worst thing about your elementary school experiences that relates to math and in middle school. can be both elementary and middle?

4 Kate: I think in both cases was probably just boredom. So most of the time I asked teachers for harder work, which is kind of weird. But yeah, I just got really, I got bored really easily. So I knew I enjoyed math, but I didn't like being in math class for a while until it became harder.

5 Weverton: And were you identifed as being early achiever in math?

6 Kate: um, I would say so. Yes

7 Weverton: Why?

8 Kate: Just from being in the programs, they have, like what they called gifted students. There was kind of math heavy. In middle school, I did take like a specific Advanced Math course that was only offered to certain people. And then not much except for that like extra curricular math thing I told you about from elementary school, the rest, I guess, was in middle school to have.

9 Weverton: And um, and do you remember how did they decide to put you in those advanced courses of gifted program how was the selection like?

10 Kate: um, so for the general gifted program that wasn't math centered in Elementary School, I think they identified you in second grade, and I came in third grade. So one of my teachers just suggested to my parents that they have me like, tested to see if I could get into the program. I think it's just based on how you are how the teacher See you in the classroom. I don't, they don't give like the standard test to

everyone. You're kind of just selected and they would go from there.

11 Weverton: How did you overcome any negative experience in mathematics in elementary or middle school?

12 Kate: um, I guess the most negative thing was so like being Asian, a lot of times, I was expected to do well in math, and I did do well in math. But when like I made a mistake, It was always like, oh, you're Asian? Why did you make a mistake? Or if I did, well, that's cool. Because you're Asian. That's why you did well on this test is not because like you studied or anything like that. So I dealt with that a lot in elementary school and middle school. Not as much in high school. I just tried to ignore it. I guess that's the overcoming part.

13 Weverton: All right. Can you give me some positive impressions of some teachers some math teachers from elementary or middle school?

14 Kate: Yeah my middle school, my seventh grade math teacher, He was fun, he would have like, he would play YouTube videos. And like he incorporated music into the class, which was something different that other teachers hadn't done before. Elementary School is a little bit hard to remember. Just The I just remember the fifth grade math teacher for like, providing like, extra like work in challenging problems for me. So that was positive. The rest of middle school just kind of like average math teachers, I don't think anything anyone's stood out from it.

15 Weverton: And can you give me some negative impressions of some of your teachers?

16 Kate: I would say in eighth grade, I had algebra. And I'm the teacher was new. But it was, It seems like she was teaching to I don't want to say regular students, but like non advanced math students. So everyone taking algebra and eighth grade, they were there because they enjoyed math, they were good at math. And we got to take algebra a year early. And she kind like taught down to us. So I think a lot of people didn't like that. And she taught very much like to the tests, like the standardized tests we had to take at the end of the semester. So there is nothing extra like, she wouldn't give more explanation beyond just what we needed to know.

17 Weverton: I see. And let's talk a little bit about your early experiences at home. So can you tell me about your relationship with your parents or guardians and how they thought about your mathematical learning?

18 Kate: They always. So my parents have always prioritize education in general. My sister and I are both really enjoyed math. But that was I don't think my parents pushed either of us to go into math. It just ended up being what we liked. My dad is a chemical salesman, so he comes into contact, like a lot of chemists and engineers. So he was always like, telling us about the people that he met the women

that he met that like worked in labs and things like that.so, What else?

19 Weverton: Yeah. So what do you, what did your parents tell you about math and the expectations of you succeeding in the fieid, was there any conversation around that?

20 Kate:Um, I mean they were very supportive, Like I said, I want to do math, and they're like, that's, that's great. You're, you'll do really well, and I guess they're experiences, I remember them telling me stories about their math experiences. Like my mom would say, Oh, I got the calculus and it was too hard. And I just stopped with math after that. And my dad like, failed High School geometry, I think two or three times. So he said he like, painted the teacher's classroom for like an extra credit assignment. And that's how he passed with like a D. So.

21 Weverton: So How do you say that your parents influence your school success? In elementary and middle school?

22 Kate: My school? They were they cared about school, they both have bachelor's degrees. So like homework was a priority. I don't think I ever like blatantly said, I'm not going to do homework. But just when school started, it was exciting. Like, it was fun to go like buy school supplies and like, school was always a positive thing in their eyes. And it was, so it was like a good experience for me too.

23 Weverton: Did Your parents or other family or friends have careers or exposure to math?

24 Kate: My mom's sister, She's she's a middle school math teacher for a while. A lot of my family was in education, but only the aunt was in math education. Aside from that, I don't think there's anything else.

25 Weverton: Did that ever influenced you?

26 Kate:um, no, it's it influenced my sister a lot because she's now a middle school math teacher. But I never, I don't think I ever wanted to be a teacher when I was younger I think it just made me like school. Like my sister and I would play school for fun.

27 Weverton: Nice. Let's transition to high school. So can you tell me about your experience in mathematics during high school?

28 Kate: Yeah, I think I was, I was really lucky to go to our high school with a good math program. I know, it's not typical, you know, across the US. I was in like, the honors classes, honors math classes through high school. I did. Like I took statistics and took the AP exam for statistics and the AP exams for calculus. I guess my calculus teacher was the best math teacher I had. I think aside from my geometry teacher, they were all really great. I had a, they gave a really in depth.

29 Background, and it moved quickly. So like, for example, in calculus, calculus Teacher, He taught calc, calculus one, two, and three, and then did like half of a differential equations class. And then in pre calculus, we also did some group theory, some number theory. So it was just fairly, It was a good spectrum of things. I didn't appreciate it until like, I got to college, but it was

30 good.

31 Weverton: So What was the worst thing about your high school math experience?

32 Kate: Maybe just like losing people, because you kind of go through the same math class, you're in the same math classes with the same people. And then some of them, like don't go on to do the higher calculus class, it was kind of sad to see them go, because it's It's fun to work with people that are like on your level and enjoy the math as much as you do.

33 Weverton: What is the best experience?

34 Kate: oh, the best the calculus class for sure, just because the teacher was really great.

35 Weverton: And In what ways? Have you been encouraged to excel in math in high school?

36 Kate: uh, Junior year, I was chosen to do like a math competition. So like my teacher, like specifically approached me and he was like, do you want to do this? So I did that for two years. Another thing is, there's a regional math competition. And again, like the best students from the class, were chosen to go take a test and compete against other students in Tennessee. So I was chosen for that. Every year.

37 Weverton: Nice. And Did anyone ever discourage you from pursuing math in high school?

38 Kate: No, no, I can't think of anyone that did.

39 Weverton: Cool, what about college. So can you tell me about your experiences as being a mathematics student in college?

40 Kate: I remember my first semester, I had to take calculus three, which was kind of like everything I'd seen before. So I was pretty bored. And I started doing research,

like my second or third week. And I went to the chair of the math department and because I, I had talked to him when I was thinking about attending. And so I already had, like a, like a connection with him. And so that started out. I mean, that was great for the, for the two years. I was there. All the classes were really small. So I liked that. I don't think I had any really bad professors. Anything more specific? Okay

41 Weverton: Can you describe maybe this one. Can you describe a memorable experience in your college math classroom?

42 Kate: [thinking] um

43 Weverton: Any challenging moment in college?

44 Kate: Oh, Yes, I did. I remember taking real analysis, as it was my first year I took real analysis. And the professor was a little crazy, but he was a good professor.

45 Weverton: How So?

46 Kate: How was he crazy? [Weverton: Yeah and good at the same time] .Oh, he was very knowledgeable. And he cared about like, people asking questions, things like that. He just said weird things, like. Just again, an eccentric person.

47 Weverton: And and let's talk a little bit about your math confidence. If you're to grade yourself, which rank yourself from one to 10? One the least confident and 10 the most content in math? How do you classify or rank himself? from elementary, middle school? high school, college, and now. PhD

48 Kate: Okay, Elementary School. It's in be like, nine, the same in middle school. And then High School? Probably like saying a, I would say an 8. In undergrad it would probably range between like a seven and an eight, depending on the class. And then now, I would say on average seven.

49 Weverton: Why, why do you think a seven now?

50 Kate: I guess the number keeps going down as I get older. And I'd say it's because like, as you know, more like you realize that you don't know a lot of things as well. And also, like, as I've progressed, like, I become a contact with them more and more like diverse group of people. So you see, like, oh, if I just because you're the best, say your high school does not mean you're the best at your undergrad institution, and doesn't mean you're going to be like in the top, you know, 10% of your graduate school either. So I guess that's where the seven comes from? Because I do know, peers that just they're really strong and the classes that I've had with them.

51 Weverton: I see. And do you feel comfortable asking or answering questions during mathematical classes?

52 Kate: It depends.

53 Weverton: During your PhD.

54 Kate: Yeah, it depends, I'll speak up a little bit more and like numerical analysis than I than I did and like algebra, or

55 Weverton: any in specific reasons why?

56 Kate: I just have more confidence with the material. Yes, or maybe not confidence, but like things are a little bit more. they're easier to follow along in that class. So I can select whether it's a complex analysis, I didn't always I didn't understand everything, as it was said. But if I, you know, thought about it, and I, like looked over the notes, again, I could catch back up, but it didn't like happen in real time when I would need to answer the question. So that's why, like, I don't usually answer the questions a lot in class.

57 Weverton: Nice. All right, let's see gears now for some questions about gender identity. And before we do that, I'm going to give you some background, what I think about gender and yeah, just so that, you know, like what I'm thinking about, as I'm asking those questions, even though it doesn't need to be the same tha you think about it. So for me, gender is socially constructed. So It's a construct that, that people created, to classify different sexes in terms of behave, behavior, and in terms of performance in terms of the ways we should act in our societies. According to the sex, we are assigned at birth. Having that said, I believe that we have normative genders, which is the genders that defines the sexes, male and female. And we follow along with those two genders, mostly, which classifies groups of men and women. So that's from where I'm coming from. And now I would like to know, can you tell me about your understanding of gender in the context of American society?

58 Kate. Okay. I guess my perspective is pretty biased for where I've grown up. So I grew up in the south. My, Like, when I grew up, I grew up in like a Southern Baptist Church, and then kind of change to a different church in the middle. So I guess from that view, genders pretty traditional, and like biological. i guess in is still like, gender has gotten a lot more attention I guess in terms of media, and you see it a lot in like college campuses, because they are like more. They're more liberal, liberal places to be just because you're around young people. Also question like the roles of gender in society,

59 Weverton: just like your understanding about gender in the context of American

society?

60 Kate: I think it's pretty divided and how people feel like there's like the traditional two genders and, like, biologically two genders. And then there's also like a, like, you're, you can define what gender that you are. And then there's like, in between that, it's like you can, they're more than two. So Yeah, there's like the, I can't think of the word. But some people like prescribed to the notion of like, multiple genders. And like, I know, there's like a non binary or gender fluid. And there's different things I might be leaving out. But

61 Weverton: So when you talked about your understanding that the first time you mentioned a little bit about the south, Can you tell me a little bit more about it? You said, You grew up in the south? [Kate:Oh, yes.] You you said things chnage because of that.

62 Kate: I just think that like, not philosophically, but like, how people think is pretty the same, just because it's like the Bible Belt. So it's kind of safe to say at least half the people you're around, are familiar with the Christian church, and like the either go, or they have family that have strong attachments to it, As it like, either their parents or grandparents. And so I feel like people think, close to the same in that sense. So you're not really in a diverse environment, in terms of those kinds of social problems. Yeah.

63 Weverton: I see. And What does your gender mean to you?

64 Kate: [thinking] I don't think I've thought about that very much. To be honest, is their ah

65 Weverton: it’s your story, it’s your story.

66 Kate: I don't think I've ever been in a place where I felt limited. By my gender.

67 Weverton: And How do you feel when talking about gender with people you don't know very well.

68 Kate: I don't think I've ever done that. Actually. Just because it's kind of like in the joke way, with strangers, you don't talk about religion, or politics or something else. It's like things that are off the table to strangers is like religion and politics. And I guess the same thing, because I know that gender is personal to a lot of people. So it's not, it's not really a great conversation starter. So I don't think I've just been in that situation of talking to people

69 Weverton: have you ever been in a situation where you were with people that you knew Well, and discussed about gender?

70 Kate: um, Maybe a little bit, I just don't, I can't not know conversation stand out to me right now.

71 Weverton: And, [Kate: yeah, I think something] all right, and what does it mean for you to be a woman in the US?

72 Kate: What does it mean to be a woman? I think that is changing from like, the society point of view as in and I think we've pretty much gotten away from you know, women have to be housewives. And So now it's more, I think, just determined personally, like, if it just means that you can do what you want to. You know, there's not like a set path In terms of like education, or, you know, having children or if you need to be married, If you need to be in a relationship in the first place.Yeah.

73 Weverton: Nice. And What does it mean to you to be a woman doing a PhD in mathematics?

74 Kate: I guess. Is it I mean, it feels good to be in. Feels good to be in the minority. I mean, it feels good to be, like proving that, that you're capable, and like a historically male dominated field, not that the atmosphere here is that women aren't as good at math as men, but just the Just like, the society's view of like, academia is probably all male professors. And, you know, Christ, formally and teaching.

75 Weverton: Can you tell me more about this atmosphere?

76 Kate: About the atmosphere? [Weverton: yeah] um It seems very collaborative, at least from my year, I know that different programs can be very competitive. And it's kind of just based on the people that are there not really the professor's of the director that's trying to change things. So I think the The group of students that I came in with were very collaborative. for male, and like, there's not like a male group of people that I know that just, It's only males working together, even even an older students, I see them like having people working together, there's always like, it's always a mix of male and female.

77 Weverton: Nice. And, and tell me a little bit more about why you feel like it feels good to show to society that like women can do it? As being Part of the women's group.

78 Kate: Just to I guess, see that there are a lot of different tracks that women take, I think it's pretty. It's not really seeing that males have to go one direction or the other. But I think that like female careers are normally clustered, you know, like in different areas, like God's Administration, or like something related to like, home economics and that sensor, like working from home, like, you know, women are people that work from home, and less men do that. So I think it's just, it feels good to not be in one of the clusters and just to show that you can do something

different.

79 Weverton: Can you tell me about a moment that you felt frustrated about being a woman in mathematics?

80 Kate: Maybe with confidence, either, I know that it's not a female problem to have low competence, I just think it's more prevalent. And I'll give them male, it seems like males that have low confidence, don't really talk about it, or it's always, or it's a joke, Kind of like you kind of brush it off. And so I guess it's just frustrating. Like, it seems like no one are like, none of the guys around me are struggling, which I know is not true. Like, it's not like I'm not as good as you know, the other people around, it just seemed it's just frustrating. Like, no one shows it. And it does, it seems weird that like everyone would not show it. So I'm guessing it's like a societal thing that they're not willing to show, like their own frustration.

81 Weverton: So that'd be like men does not show it or any of your colleagues or your peers?

82 Kate: I, I think it happens more with men, I don't think.

83 Weverton: And Could you show it when you struggling? Do you show it or you also?

84 Kate: I think I I've said out loud? Oh, I don't understand this, or like, this doesn't make sense to me. So I don't think I am hiding the fact that some things are harder to grasp than others.

85 Weverton: Interesting. And I think you touched a little bit about it. But maybe let's be more specific. Can you tell me a moment you felt positively about being a woman in mathematics?

86 Kate: [thinking] Should it be from graduate school? Or?

87 Weverton: It could be more than one time? Yeah, maybe you felt positively. Maybe in elementary or high school is fine?

88 Kate: Okay. I Guess again, back to I think I told you yesterday about the women's conference, like the undergraduate math conference, and that was maybe the most positive for like feeling, like proud to be a woman and mathematics just because there is a room full of women. And I felt good to be the one giving a presentation. Like I, you know, had the I had the confidence and then I had built up the knowledge to give that talk. Oh, sorry, [Weverton: go ahead. Go ahead] in

89 grad school. I Think yesterday said it was like a negative when I looked around, and they're like no other women in the class. But there's also like a little bit of like, pride

in that. Like, oh, like I'm doing well in this class. And, you know, there's only a couple of other women, so just yes. I don't know what to say about that.

Weverton: All right. So How would you describe the gender makeup of your department?

Kate: I think it's probably 30 ish percent women.If I had to guess.

Weverton: And is it like for grad students.

Kate: Yes.

Weverton: What about faculty?

Kate: for faculty? I don't know. I mean, I know of. I know by name more female professors than male professors. I'm not sure how to place them. And like all the professors, I know, the department's like 80 something people? And I think maybe between 10 and 20%. Female.

Weverton: So it's much less?

Kate: Yeah.

Weverton: Hum, How do you feel about it?

Kate: um, I guess it would be. I mean, historically, the classes that I've had with female professors versus male professors haven't been strongly worse or better than compared to having a male professor. I think I, you know, feel the same, like comfort level in the class having male or female professors. So I don't, I don't really view it as in like, the people don't think that the female like females are worse professors, it could just be a matter of interest. I think just happens like all the females that came in with me, like, we don't want to go into academia. So I don't know if like having less women, it's just because they don't want women. They could just be a less woman end up choosing the academic route.

Weverton: Interesting. And would you say that these gender makeup here is typical or atypical across departments of mathematics in like, in other universities.

Kate: I think compared to the other universities that I looked at Frank is a little bit higher in terms of female, female versus male in the graduate students. I'm not sure about faculty. In my, I did a campus visit at the University of Kentucky, I don't think I saw any female professors. But I did see a few female graduate students. I'm not sure about

Weverton: did that inflence like coming here, like, Did that make any influence for

you to come here, to study here?

103 Kate: Yeah. It does. It's not like in the top three reasons to come to school. But Yeah, it's just it's nice being around. Other women, I mean, for the same reason, like when I was looking at undergraduate universities, I did look for like a larger percentage of like, Asian Americans are just non Caucasian, because that mattered to me. And I didn't have that in high school. And never, I never had that in elementary school or middle school. So like that, as well influenced my decision to come here, because I knew that there are a lot of international students, and that there are just be different people, whether it's gender, or whether it's like, ethnic or socio economic.

104 Weverton: And, this is interesting, What are the things that you think people from a different gender than yours would be surprised to know about your experiences as a math PhD student?

105 Kate: [thinking] um, Don't know if it's a surprise, but I think all the women are funded, like fellowship funded and I know not all the guys are.

106 Weverton: Do you Know why that happens?

107 Kate: I don't know how they, I guess it's the budget, how they determine how many fellowships that they're allowed to give for each type is just from like, talking to people that you just realize. We just realized that all the women have fellowships. But that could not be a surprise to some people. There's like, oh, like, special groups always get money. So I can't think of anything else. I feel like my experience so far has been pretty standard for you know, every other student that came in with me.

108 Weverton: And who do you think, are the mathematically strongest people in your deparment?

109 Kate: Student wise? I guess students? Is it students or anyone? You don't get to see everyone, I guess the people that I know the most are the ones like I work in the library lounge here a lot. So I mean, the older students that I saw working here, I mean, they seemed pretty well put together and they knew what they were doing. A strong I guess, people that like, organized things like or him had seminars and stuff, because I, you probably wouldn't take on that role unless you're doing well, like in the program, before taking on extra responsibilities.

110 Weverton: What about professors?

111 Kate:um, I don't know much about like their work, or I mean, I don't, honestly, I

don't really care how like how often they pub they publish things or stuff like that, is I have the most positive opinion of people that I see the most like, either for like the department like the coffee hour that we have, or, and like informal chats with. With speakers, or like aWm did does like a lunch occasionally for like, female faculty and female graduate students just eat lunch together for like an hour, hour and a half. So The professors that show up to that, is they just have a more positive opinion of I don't know mathematically how they are.

112 Weverton: Why do you think people are seeing as strong folks in a math department?

113 Kate: um, Maybe just by either how hard their class is, or like, how many things that they're involved in? Maybe how many graduate students that they have, how many like thesis? How many people they're advising? I haven't really thought about thought much about that, like, from the advisor point of view

114 Weverton: And so you see how hard it class is like, it's harder, they're seeing in better way?

115 Kate: I guess If they they're, like their lectures advanced, not only like yesterday, I talked about how algebra was hard, because there's a lot of memorization in it. So like not that kind of hard, more hard as in. Like, the professor will make connections to other areas of math that you don't know about. But they just they just talk like they know what it what it is. Yeah.

116 Weverton: So What would you do to improve women's experience in the math department?

117 Kate:um, I think AWM is a great thing, if you just have just more like people talking to you like you can't force people to show up to a meeting, of course. But just like keeping, like having activities, like that, I think is helpful. Yes, any kind of social reason to have, I think it is important to have some things just for women. So Yeah, beyond that, I'm not sure what would be effective in terms of like, you don't want to, like enforcing a mentorship sometimes just doesn't work because you're not like neither person might not be invested in what they're doing. Yeah, so just having more voluntary events.

118 Weverton: What do you think works well for women in the math department?

119 Kate: Just this in terms of like, what kind of things? Just anything that works well, Okay.

120 Weverton: That you think you works well.

121 Kate: I don't know if anything specific to women, like it seems very just, This is how

it is for men and women and doesn't seem like men have them would have an easier time. Like for the for the qualifying exam setup. There's no advantage to that. From like the gender perspective, it's just, you know, study for the test, take the test, try to pass the test.

122 Weverton: And can you Tell me about a faculty member in your PhD program that contributed to your academic success?

123 Kate: I would say, my professor for the bridge algebra class, and my first semester, I went to his office hours a few times, and he would just like, kind of share some advice in class, in terms of like, it's, like, we got our first test back. And it's like, really low scores. And you don't really you don't expect that because most of the time, it doesn't happen and undergrad that you may get 20 on a test. And he did. Okay. So. So he was good in terms of just like, setting up some expectations, like what expectations to have and what expectations not to have. Like you, just because you, You don't really think about Practice, practice taking a test. But for the qualifying exams thing, A lot of times you need to practice. Just sit down and try to take the test for two hours. Yeah, I'm just saying Don't be, you know, discouraged from a low test score, you know, low test scores are Going to be common.

124 Weverton: And What advice would you give to a woman that was thinking about majoring in the PhD in mathematics?

125 Kate: Probably Just don't be afraid to contribute, like, a lot of times, you don't want to contribute, because you're afraid that people have something better to say, so just wait for them to talk, you know, before you say anything, So you don't want to like repeat something? So just. Yeah, so just have the, I guess, just have more confidence. Not that you're better than everyone, but just that, you know, you earned your place here, too. So what you have to say matters.

126 Weverton: Usually do you Are you afraid to contributeor no?
127 Kate:um I will, I guess I'm more hesitant in certain things, but I will contribute.

128 Weverton: Do you know the women who would be more afraid?

129 Kate: Yeah, I think it's, it might just come from just comparing yourself too much like you have this like notion in your head that that's the best person in the class and that they know everything. And so you don't want to is like embarrass yourself in front of someone else? Who would like maybe not embarrass yourself for the professor. But sometimes, like your peers, opinions matter more than what the professor is going to think about you. If you speak up in class or in like a study group, it's like, people aren't going to kick you out of the way. You don't want to, like, say dumb things all the time. Because I don't know. Yeah.

Weverton: people get frustrated

Kate: Yeah people will get frustrated.

Weverton: All right. We are done.