

“Because I Believe in You”

By Sofia Martínez Alberga

“What did you get for number four?” Mamá said, sitting next to me at the kitchen table. “Three?” My third-grade self asked.

“I think it’s negative three, Sof, because seven is bigger than four,” she explained.

“Ay Mamá, I keep flipping the signs,” I grumbled as I erased my answer on the worksheet.

“It’s okay, don’t be negative solo que sea el tres,” she joked and we laughed.

Growing up, conversations like these formed a dense subset of the dialogue my mamá and I would have over the course of homework time. Since I was raised an only daughter to an immigrant father and a first-generation mother in Southern California, arguably one of the most culturally diverse places in the world, I spent a large portion of my life with my family. My parents were high school Spanish teachers, so language, literature, communication, and education were considered living virtues in our home which gave rise to my mamá’s loudest piece of advice, “si no pides, no recibes.” As a child, I did not know that I wanted to study math and my parents never pressured me to study anything in particular, but they did make a strong effort for me to love school. I was not really aware that I loved learning until my parents urged me to join Academic Decathlon in high school; this was an extracurricular activity that focused on studying a variety of subjects, taking tests on the given subjects, and scoring as a team in a quiz-bowl format. More than formal material, Academic Decathlon taught me that studying can be fun and even more so when you are not doing it alone. Now at twenty-four years of age, I am still in school, so I guess you could say my parents’ goals were met.

When it came time, my seventeen-year-old self saw no option but to apply to college, an idea I was not entirely enthused by. On a fall Saturday morning, my parents and I were filling out

college applications when the natural question of what major to choose arose. Even though I wanted to study something in the humanities or social sciences, my pragmatic parents foresaw, I am still not sure how, a brighter future for me studying mathematics. In fact, they claimed I was good at math, a comment I quickly refuted:

“¿Que dices, Papá?! I just got a C+ in honors math analysis.”

My papá just as quickly rebutted, “Y que? Mamá y yo te vemos. We see how much fun you have working through your homework. You know the material and aren’t being assessed in a way that reflects that, asique la nota da igual, Sof.”

With that comeback I was muted and being an only child with parents that had given me practically everything, I had no strength to continue the argument. To further prove their point that their idea was better, they explained that at worst I would become a high school teacher like them, which in retrospect does not sound so bad. As a result, I ended up hesitantly marking the box labeled “Mathematics (general),” but as a consolation prize, they reminded me that I could change my major later if things did not work out as I expected. In addition to this, I made a deal with my mamá: I would live at home during college so that I would not have to take out loans for room and board, and she would pay for my undergraduate and graduate program tuition, the latter of which neither of us knew at the time could be funded.

While without a doubt, my parents have supported me and been advocates for me in so many capacities, I want to focus the rest of this narrative on advocates I have had in academic settings. All figures in this narrative will not be named explicitly by name or pronoun for the purpose that any reader of any identity can identify with the advocates I describe. I would also like to remark that I will be describing the traits, via examples, of advocates that benefit a student like me specifically. For the most part, I would say I am a self-motivated and direct student, so I appreciate it when my advocates are transparent and sincere when guiding me. Additionally, I have found that advocates that have supported me selflessly are the ones I am most thankful for because they have made it clear to me that they are not supporting me for a superficial reason, for example, to meet a quota. I hope that my story will showcase a type of advocacy that has brought

me success; in general, when doors with opportunities behind them are pointed out to me by an advocate, I choose whether or not to open it and how to open it. Since I am not sure that this sort of advocacy has a name I'll take a moment to coin it with an uncreative term: "pointing advocacy." By the same token, I will comment on how I learned about self-advocacy and how it has manifested in my life.

Now back to my story.

Before I knew it, I was granted early admission to UC Riverside (UCR) as a mathematics major, a piece of news that completely astounded me. Given my recent past with the math classes and this new fact, my brain could not follow the logic of how the situation came about. "How and why did this just happen to me?" were questions I constantly was trying to answer. I had never met anyone on this admissions committee nor had any of them met me, to my knowledge, so why would they advocate for me being a mathematics major? Now it is clear to me that this was an example of advocacy that can be done on behalf of individuals that you have never met. In fact, I would argue that sometimes advocacy must happen in this way because normally those for whom they are advocating do not have access to the exclusive space of the advocates. Based on my application, someone saw potential in me and my ability to be successful as a math major and if I were to ever meet said admissions committee I would thank them for taking a chance on me. Generally speaking, I think good advocacy is selfless and those who have advocated well for me never made the advocacy about themselves.

In September 2015, I started my undergraduate program at UCR and, as a foolish eighteen-year-old, was very much in denial that I was a mathematics major — I actively dodged the question, "What is your major?" Honestly, I was ashamed to call myself a math major just for the sheer fact that I did not feel like one. It became blatantly obvious that there were very few people majoring in mathematics and even fewer math professors and teaching assistants (TA) that looked or even grew up like me. It was not until the end of my second year that I had a TA who noticed my work and, by extension, me. I attended many office hours and while getting help on homework sets, they took some time to get to know me as a person and learned about my goal to attend graduate school, and since this person related to me culturally, taking their advice was that

much easier. By the end of the quarter, they encouraged me and a couple of other students to take a reading course with them to study the representation theory of Lie Algebras, which I decided to do because I thought, “I could use some more math major friends.” This advocate also nominated me to attend my first math conference and shared opportunities that may be good for someone who wanted to go to graduate school and was in my situation. By the same token, this advocate was clear and direct in their guidance, so when they said that attending this conference was a good first step towards my goals, I took it.

Unknown to me, this nomination came with funding to attend the 2017 Field of Dreams Conference, where I met fellow undergraduates and conversed with them about math, math adjacent, and math complement topics. This made me feel like there was a place for me in mathematics and the mathematics community, at least as an undergraduate. More than this, I learned that Ph.D. programs in mathematics were fully funded, how to apply to them, and what makes a competitive application. With respect to the latter, I found out about research experience for undergraduates (REUs) which seemed like a crucial opportunity to pursue; also I was exposed to other potential experiences like the EDGE program, a program designed to help women succeed in graduate school. My advocate had brought me to this place where I belonged and while there they allowed me to make a name for myself. Of course if I ever needed a tip or trick or had a question I could rely on them to support me, but in general they gave me space to be the most honest form of myself. In a system where there is little space for someone like me to exist, a good advocate makes room for me in said space, allows me to express myself honestly within the space, and provides me with the opportunity to learn. This is exactly what my advocate did for me.

At the end of a full day of math talks and networking, I remember going back up to my shared hotel room and researching all logistical information I could find regarding REUs: where they were hosted, deadlines, application questions, and the number of recommendation letters. I remember myself getting excited about what kind of math I would do next and was just excited to learn more about math research. Due to attending this conference, I can truthfully say my entire attitude towards viewing myself as a mathematician flipped a complete 180 degrees. It was from then on that I started using my voice at college outreach events to express my love for math and

sharing my experiences in the community with the hope of getting others involved. I enjoyed the experience of my first math conference so much that throughout the rest of my third year I kept my eyes and ears open for more opportunities to get funded to attend more conferences. That spring quarter, I attended the Infinite Possibilities Conference, where I was convinced by big-name voices of the field, one who later became one of my mentors in the EDGE program, that math was a place for me, and I agreed with them.

During July and August of 2018, I participated in the REU program of my dreams at the Fields Institute in Toronto, Canada. Throughout the summer I worked with a diverse international team of undergraduate researchers with backgrounds in mathematics, which were different and what felt like more advanced than mine. Despite how true that fact may have been, my research advisor never made me feel like the sharpest lower bound. I worked many hours on understanding the background material, finding possible research questions, and preparing slides for our weekly advisor meetings so that I could present my ideas. But in every meeting, I could not shake the feeling that instead of presenting my work, I was explaining why I was hitting a dead end. Even though I felt this way, this advocate never showed signs of disappointment or irritation, and in turn made an example of my preparedness and professionalism to my research team, as well as pointed out more research avenues I could explore. More than this, I also felt like they saw me as a human and even celebrated me as such; for my birthday they bought me a charming little air plant in the most beautiful spherical glass bowl I had ever seen. This is an act of kindness I still think about and cherish to this day. My advocate fostered an energy in our research group which manifested in us continuing to keep in contact to this day. In fact this person was a reference letter writer for me until my second year in graduate school because I felt like they were someone I could rely on as a person but also, as a mentor. They could speak to both my mathematical abilities as well as my professional skills.

Starting in the fall of 2018, I continued working on my course load at UCR and as tutor at UCR's academic resource center as well as applying to graduate school. Since I had been working there for almost two years already, our resource center supervisor shared an opportunity with me. They recommended that I apply for the National Science Foundation Graduate Research Fellowship Program or as they put it "a bucket of money," and I decided to give it a shot.

When I met with said supervisor for our first appointment I remember saying, “Alright, you have convinced me I want to try to win this bucket of money.”

They smiled as if they expected my confession and said, “Fantastic! Okay so you have the research project idea already so you just need to write about it and we will tweak your grad school personal statements.”

Agreeing with the plan, I confirmed, “Yes, that sounds great!”

Knowing my course and workload now they confessed, “I want you to be aware that this application is due in a month and half and this plan will take time.”

“I’m not worried about that,” I confidently replied.

They said, “You are the only applicant I know who I would let start the application this close to the deadline,” a statement I took as a massive compliment, “but if you aren't worried neither am I.”

I spent many hours writing drafts and in meetings with said supervisor to work on this application. Despite the fact that this person was not part of the math community, they never failed to try to understand my place in it. They also pushed me to think about how one could write mathematics in a more accessible way, a concept that for whatever reason seemed foreign to me. And now this brings me to beg the question: do advisors or advocates for mathematicians need to be mathematicians?

Per this advocate’s recommendation, I had, what felt like, ten thousand pairs of eyes read my drafts. I still remember, the night after giving my first research talk at the 2018 National Association of Mathematicians (NAM) Math Fest conference, sitting in my, again, shared hotel room by myself revising my research and personal statements, which would later win me the fellowship. A fellowship that allowed me to continue studying mathematics at the graduate level.

Soon after graduating from UCR, but before starting graduate school, I participated in the

EDGE program, an experience that showed me the interplay between community and advocacy. First and foremost, I gained a network of soon-to-be or already math-PhD-holding women, who were not only my supporters but also my friends. This sparked the revelation that when looking for community, I search for not only shared interests but also shared experiences. I also learned that people and mathematics have an intimate relationship and that what makes learning, teaching, and researching mathematics enjoyable is made in part by the math and in part by the people one does the math with. Along with this, I was made aware of how dynamic and flexible one would need to be to learn graduate mathematics, while also knowing your limits.

Over many lunches and dinners, my professors, colleagues, and I would have deep complicated conversations regarding potential instances of misogyny, racism, and personal crises and then would share strategies for how to deal with these scenarios.

“What do you do if someone touches your hair?” proposed a colleague.

“I’d turn around, and ask ‘EXCUSE ME!? What do you think you are doing?’” suggested another.

“Smack them,” whispered another and we all laughed in agreement.

“I definitely wanted to” added a more senior mentor, “when this happened to me but neither of these options were healthy or safe for me.” Some listeners were in shock that what should be a nightmare was a reality for others but the mentor provided an alternative, “I politely told them to stop and explained their mistake.”

“Why be polite? Why do we need to explain?” asked the proposer.

“What does a concerned bystander do?” I asked.

Discussions like these prepared me for the unexpected, provided me with solutions to unknown problems, and challenged me to think about how speaking up for myself can not only be done but how it can be done effectively. And for the first time in a long time, I could hear my

mamá's whisper: "si no pides, no recibes."

EDGE provided me with a community of advocacy that was different from what I had previously experienced at my summer REU and UCR. Even though I do not see the faculty and mentors who supported me during the program regularly, they are always there for me within a reasonable capacity. In particular, when they are privy to opportunities they think would be good for me, they do not hesitate to share them. This is how I ended up working my first summer position at the Mathematical Sciences Research Institute (MSRI) after my first year in graduate school, an opportunity I would not have known about otherwise.

In August of 2019, thousands of miles away from home, I started my graduate career at Purdue University and even though this was the first time I was truly on my own I was more excited than ever to meet my cohort and study more math. I quickly made friends and formed study groups, but it was not until attending our department's graduate student town hall assembly when I recognized that the delicate dialogue that we had at EDGE pointed to learning a new lesson: the power of self-advocacy. Seeing my peers speak so strongly about issues in the department convinced me that one should be a stakeholder in their own advocacy and begged me to reflect more on the trails of conducting good advocacy. Little did I know that this experience would manifest itself in me starting a conference with two other graduate students with the goal of helping well-intentioned faculty become better Ph.D. advisors.

For me finding a Ph.D. advisor felt like I was trying to solve a Diophantine equation: time-consuming and extremely straining. I had some idea of what characteristics I wanted in an advisor, but I had no idea what I didn't want and what tradeoffs I was willing to make. Given my history, most of my advocates found me whether it be via a class or an application but now it felt I had a choice in picking an advocate. Yet simultaneously, the advocate also had to want to advocate for me as well. After many discussions with faculty and other more senior graduate students, I got the sense that in some way I had to convince people to advocate for me. This was new for me and in some sense made me feel objectified; with all modesty taken into account, if I had to convince someone that I was a cause worthy of advocacy, I did not want them as a supporter. Moreover, there was a long while when I felt like faculty members did not want to be

my advisor and by extension my advocate. I started to believe that this was because there was something wrong with me. I thought that perhaps they thought I was not “smart” enough or they thought I was not capable of meeting their demands.

By the time I finished passing my qualifying exams, also known as nerd hazing, I had some conversations with faculty about doing research with them, but none of which went well. I had my mind set on whom I was going to approach next when I took a Zoom meeting with a responsive mentor who quickly gave me other alternatives of whom I should talk to next, and as a result, I felt more confused than ever. Upon further reflection, I concluded that this was probably going to be the best, most explicit advice I was going to receive, and it was really in line with the advice of a few other mentors, so I thought I better take advantage of it. One of their action items was to email a current professor, who would become my research advisor, to set a meeting. This meeting ended up happening that same afternoon, which felt ridiculously coincidental and for which my incredibly anxious self felt extremely unprepared for.

Come three o'clock that day the Zoom meeting started as naturally as it could. Despite that I had attended many office hours discussing homework problems, I found myself extremely tense and struggling to start the conversation properly. Unfortunately for me, I think they could tell:

“How are you doing?” they initiated.

“Honestly?” I responded.

“Yes, of course,” they affirmed by which I proceeded to word vomit my stresses and concerns for three minutes straight.

Without any judgment on what I had mentioned, they suggested a roadmap to continue the conversation which would inevitably lead to talking about rather heavy topics; we had an open dialogue about math interests, career goals, and teaching and learning styles.

After this earnest discussion, I felt an injection of confidence which came to fruition

when I very frankly asked the following question, “Would you be willing to take me as a student?”

They very emphatically replied, “I would be more than happy to have you as a student.” Then leaning closer to the screen with one hand on their head they expressed in a more cautious voice that the research journey would be arduous.

Appreciating their concern I replied, “That won’t be a problem,” and continued, “I would not have made it this far in grad school if I was afraid of hard work.”

“That’s true,” they agreed “okay good, because I believe in you and I believe you can do this,” a phrase that told me everything I needed to know about this potential advocate. Yet they furthered by expressing that they would support me in trying to achieve the previously addressed goals. With my anxiety at ease, we planned a new course of action.

Now, upon rumination, that was the first time since I had started graduate school that someone had actually said those words to me; “I believe in you.” Broadly speaking, advocacy is a form of support and advocates need to believe in the cause they are supporting; my advisor definitely made me feel like he believed in me and my cause and continues to make me feel that way to this day.

If advocacy had to come in the form of a person, good advocacy for me would look like someone who has eyes to see my value, work, potential, and has ears to hear my voice. It would be someone who encourages me to stay focused on current goals and continue to work on myself and my understanding. My story exemplifies that in general when doors with opportunities behind them are presented to me by an advocate, I choose whether or not to open it or how to open it. Strings are never pulled open on my behalf or in my favor to ensure that I receive certain opportunities. I in fact think this method of advocacy can be toxic and results in resentment from the student towards the advocate. Overall bad advocacy for me would be advocacy that happens behind closed doors without me in the room, essentially where my voice is not being heard in its own right. Also since it is a very possible reality to not find advocates, self-advocacy is required. In this case, institutions should implement mechanisms for self-advocacy to be executed, which is

left as an exercise for the higher-ups reading this text.

Going forward, I hope that my advocacy comes in the form of conversations of which I am a part of. And for those faculty members looking to become better advocates I would recommend following the action item list below, which need not be done in order or simultaneously:

1. Give space to your mentees. *It gives them a sense of independence.*
2. Honestly and genuinely believe in those whom you choose to advocate for and support.

This is motivating for students.

3. Recognize that advocacy is a continuous action. *It is not a one-and-done deal.*