

Speaker 1:

Welcome to Optimal neuro|spine Podcast, a podcast about optimizing our brain and spine in health and disease. Each episode, leading neuroscientists, neurosurgeons, educators, patients, spine care, and quality improvement experts discuss their research, experience, emerging science, surgical advances, and insights about how to optimize neurological and spine care. Now here's your host, Dr. Max Boakye.

Dr. Max Boakye:

Welcome to the Optimal neuro|spine Podcast. Today we have an excellent guest. We have Dr. Aurora Cruz who is a resident in neurological surgery at the University of Louisville where I am faculty. We'll be talking to her about neurosurgery residency, her observations, her experiences. Dr. Cruz has a MD and MBA from the University of California, Davis, with a bachelor of science in neurobiology, physiology, and behavior. She then attended the University of California, Irvine, School of Medicine where she discovered her love of neurosurgery. And she was elected president of the Arnold P. Gold Humanism Society. In 2016, she received her master of business administration at Paul Merage School of Business with an emphasis on organizational behavior and leadership, and simultaneously her MD from the UC, Irvine, School of Medicine with honors in service and arts and humanities. She received the medical arts and humanities award for her involvement in the arts and humanities throughout medical school.

Dr. Max Boakye:

She was awarded the AANS Medical Student Neurosurgical Top Gun in 2016. Since joining the University of Louisville Department of Neurological Surgery as a resident in 2016, she has served on several resident leadership committees including the graduates medical education committees, clinical quality, and patient safety subcommittee, the resident quality and safety leadership council, the graduate medical education committee, and has served two years as president elect and president of the health staff council.

Dr. Max Boakye:

Dr. Cruz won the Nursing Exemplar Award for excellence in communication with patients and staff in 2019 and the Neurosurgery Consultant of the Year Award in 2020. She was named the University of Louisville resident of the year 2019 to 2020 and was elected to the Alpha Omega Alpha Society as a resident. She has an interest in academic leadership, resident education, and organized neurosurgery and is honored to have been elected to the AANS Young Neurosurgeons Committee for the 2020 to 2024 term. She also serves in the Congress of neurological surgeons resident committee for a 2019 to 2021 term.

Dr. Max Boakye:

Her interests are in cerebrovascular neurosurgery and following residency, she plans a postgraduate fellowship in cerebral vascular neurosurgery at the Geisinger Neuroscience Institute. Her interests include outcomes in socioeconomic factors of neurovascular patients and advancements in surgical approaches to intracranial vascular pathologies. We are very pleased to talk to her today about residency in neurosurgical training and residency, leadership burnout, and advice to medical students interested in neurosurgery. Dr. Cruz, welcome.

Dr. Aurora Cruz:

Thank you, Dr. Boakye.

Dr. Max Boakye:

It's my real pleasure to speak to you. You have really terrific CV, a lot of accomplishments. You have an MBA and you've had a number of service activities in the organized neurosurgery, but I want to get to the basics. Let's start with, what is the life of a neurosurgical resident like these days?

Dr. Aurora Cruz:

I think it's an incredibly exciting time to be in training as a neurosurgery resident. It is a time of great change, not just for neurosurgery, but for our world in general. Our technology is changing every day. Our approaches to things are so much more evidence based and I think they've ever been before. The culture of neurosurgery is changing in terms of how we train our residents, the expectations of those residents, and representation of different genders and different backgrounds and different races within neurosurgery. And I think that all of these things are just going to create an absolute revolution in how neurosurgery is perceived and the advances that we're going to make in the future generations. So I think we are at now on the upswing of a great time of change and revolution in this field. And it's super exciting to be part of it.

Dr. Aurora Cruz:

I think being a neurosurgery resident now is similar in some ways to the way it's always been which is that it's hard work, there are high expectations and always changing and increasing goals. And it's very different than it has been in the past as well because we are approaching and training from a more humanistic standpoint, more focused on our patients humanity, I think, than it has been in the past. And also residents are treated in a lot ways more like colleagues. And so that is a big shift and a change and I think an mind field to make your way through

Dr. Max Boakye:

The elephant in the room is COVID. How has your training been impacted by COVID?

Dr. Aurora Cruz:

I think COVID has affected everybody's clinical experience from medical student to resident to attending. The case numbers have certainly decreased that the types of cases have changed significantly, much more focused on trauma and incidental things rather than elective cases during the height of COVID. Although I think that we are coming out of it now and a lot of the case volume has picked up significantly now that things are starting to normalize. I think that socially, it has been a very different experience. The amount of interaction that I have with my peers outside of the hospital and with my faculty outside of the hospital has decreased. And I think that that creates some difficulty in terms of bonding and team building. And that will have a butterfly effect on everything else from people's interactions in the hospital to their overall wellness and that I think can't be really quantified.

Dr. Aurora Cruz:

There have been fewer meetings. I love going to meetings. So that's been a real downer that I'm excited to be getting back more into that, but with the less interaction that I have with my colleagues and with faculty from other programs, I think that there's a little bit less agitation of thoughts and introspection and I think people have turned a lot more inward which is difficult to think outside of the box when you're doing that. I think generally people have felt more isolated and I know that has definitely been expressed by other residents. And you've seen an ACGME surveys in general people are struggling more

than they have been in the past. So I think overall it has been a challenge. I don't think it is unprecedented challenge. I think that we have experienced greater things like war and famine and plague and all sorts of things in the past that I think are, in some ways, similar that this is our generations' great challenge that we're going to have to overcome and adapt to.

Dr. Max Boakye:

What have been some of the main challenges during residency. Has there been any challenges that you've been surprised by that you didn't anticipate?

Dr. Aurora Cruz:

I think that unanticipated challenges are the ones that I did not anticipate. There's always going to be something that you didn't expect that came up. A change in plan, something that you were promised once that isn't going to be able to happen because of things outside of the department's control or anything or the hospital's control. Being able to be adaptable to those changes and plan, I think have been some of the bigger challenges. And I think they've also turned into some of the greater strengths that I've come out of residency with. I think that learning to be an adult learner has been a challenge. Undergrad is, you're basically a child in many ways. And then medical school's a continuation of that for many people. And the social expectations are not too dissimilar from undergrad. And you are, in some ways, in this perpetual childhood.

Dr. Aurora Cruz:

Residency is a different situation. You are now an adult and you're expected to be an adult and I am an adult. I'm married. I have children. I've had jobs before, by all, I have two graduate degrees, but yet I am still a learner and I'm still a student and a pupil. And there are still a hierarchy that exists. And so learning to both rise to the challenge of being an adult and having those levels of expectations and maturity at the same time that you are continuing to be maybe even more so than you've ever been in the past a learner and a pupil and a subordinate is a very interesting challenge to try to approach and come out ahead with. And so I think that learning how to do that is an important skill because we will always be subordinate to someone for the rest of our careers whenever the boss and learning how to balance your maturity as an adult and your ability to learn from others and respect other people's authority is important.

Dr. Max Boakye:

You mentioned that you're married with two children. How has it been having family during residency? What are some of the unique challenges and what kinds of adjustments are needed and what advice do you have for our residents who are planning to have a family or already have a family? What advice would you have for them?

Dr. Aurora Cruz:

That's a great question. Thanks. Yeah. There's more and more people who are experiencing this so I think it is important to talk about. I don't know anything else. I had my first child before medical school. I went through that process, learning how to prioritize, utilize my bandwidth to its maximum potential early on, but residency is certainly a different experience. And I had my second child at the beginning of my second year of residency. So I was pregnant as an intern. And that was definitely physically an interesting experience to pile that onto the exhaustion of internship. I think that having a supportive family or spouse is critical. You cannot do this alone. No man is an island. And even my single colleagues

know that people in their lives that help support them through this are critical. So it's no different and in fact, it's more so important when you have a family and you have children to care for.

Dr. Aurora Cruz:

Prioritization is critical and those priorities will literally change moment to moment, but having an ultimate big picture of what is important to you and knowing how to shift those priorities and triage things throughout the day, I think is critical. Having a supportive department and co-residents is incredible. I feel so lucky to have been at University of Louisville with Dr. Neimat as our chair and Dr. Nota and all of our wonderfully supportive faculty who embraced this challenge and this joy in my life and never questioned how it happened or why it happened or what this was going to do to my career, but just said, let's do this. We'll put you on elective time. What do you need? What kind of accommodations can we create for you?

Dr. Aurora Cruz:

And I think that that commitment that they made to me early on and the commitment my co-residents made in terms of covering call and supporting me through all of that, only strengthened my resolve to do this as much on my own and without burdening other people as possible. So it was definitely a balance of accepting help and also not taking advantage of the situation and making sure that I pulled my own weight and I did the same work as everybody else. That was an important part of it.

Dr. Aurora Cruz:

And I think it's just about maximizing productivity, not compromising other things that are important to you and your family. And that also includes your career because your career is important to you and your career is important to your family and understanding what those long term goals are and keeping those in mind as you go forward. And Oprah, I think, said it best, she said, "You can have it all. You just can't have it all at once." So moment to moment, day to day, hour to hour, you have to pick which things you're going to prioritize so that you are not trying to have it all at once and then losing out on things.

Dr. Max Boakye:

What advice would you have for medical students thinking about neurosurgery?

Dr. Aurora Cruz:

I think anybody at the precipice of a great commitment in their lives should understand what they're getting themselves into as much as they can. So understanding the sacrifices that we make as neurosurgeons and what we get in return. And for me, that was spending as much time as possible living the neurosurgery life. Showing up at 4:00 AM and pre-rounding and staying until all the cases were done, spending my vacation time on service and showing my family, my husband, and my son, what it was going to be like so that they knew what they were getting into as well. And that really has helped me question my choice even in the darkest of times because all I can ever say is, you knew what you were getting yourself into, this is exactly what you saw.

Dr. Aurora Cruz:

So understand it and get over it, right? Don't question yourself, just do whatever it takes to answer those questions before you get there so that you never have to question them again. And then you can focus on the joys of it and the challenges of it. And the pleasure of overcoming those challenges because

neurosurgery is an incredible field. It is intense, it is exciting, and there is high highs and low lows and moment to moment, your feelings are going to change and your experience's going to be at the mercy of your patient's outcomes and what's going on around you. But if you can find an even keel and know what you're doing and why you're doing it and have a north star through that process of what is important to you and why you love this, I think you're going to be successful in neurosurgery or whatever else. So don't go into anything blind, go in with your eyes wide open.

Dr. Max Boakye:

We mentioned in the beginning that you have an interest in pursuing a career as a cerebrovascular surgeon. First of all, what kinds of practice are you looking at? Private or academic? And how have you gone about pursuing your professional goals in neurosurgery?

Dr. Aurora Cruz:

I'm interested in academic practice. It's all I've ever known and I love it. And I just feel very unwilling to give up the parts of academic practice that I enjoy and that would not be available to me in private practice. So I love teaching. I love being involved in resident education very intimately and being part of the process of setting curriculums and helping people through that process more than just being a clinical instructor. I love of the research of neurosurgery, understanding every aspect of what we do and why we do it and changing how we do that. And that's an important part of academics and just the environment of inquiry and constant questioning and different opinions and different minds contributing to your patients and to your practice, I think is a very valuable and unique aspect of academic neurosurgery.

Dr. Aurora Cruz:

So for me, it was more that I just wasn't willing to give up those things. And so private practice isn't really, to me, at least in most circumstances, offer that in a non-academic pracademics setting. So as long as I can maintain those aspects of my career, I'm happy whether that means academics or pracademics or whatever you want to call it, that's what's important to me. In terms of pursuing professional goals, Ted Lasso said, "Be curious, not judgemental." I've really taken that to heart and how I approach deciding whether I wanted to be a doctor or not. Deciding what specialty I wanted to do. I had no idea I wanted to be a neurosurgeon when I started med school. And I certainly did not expect to be a super vascular neurosurgeon. Although looking back, I think that the signs were there.

Dr. Aurora Cruz:

So I just kept an open mind about my interests and really explored all the different areas of neurosurgery wholeheartedly and with excitement and passion and tried to see what stuck and what kept me excited and what is it is driving me to come back and learn more? And it turns out that was endovascular and open super vascular neurosurgery. And I was lucky to have a great mentor who took me under his wing and taught me how to do it and made sure that I had every experience both positive and negative to make my decision. But I think once you know what you want, it's about pursuing things with intention. Organized neurosurgery or just generally in my career, I've tried to say, okay, well, what is it that I want and really hash that out and then come up with a plan and just find others who have built something similar to what you want and get their advice and their mentorship.

Dr. Aurora Cruz:

And the great thing about neurosurgery is that we all love taking care of other people and helping other people along the same path that we've had. You just get brought along for the ride and if you love it and you're passionate about it, people will see that and you'll have more opportunities. And you just have to keep being intentional with your choices, with what you say yes to, where you place yourself in terms of opportunities because you will have opportunities if you show up and you're easy to get along with and you're a hard worker, people will lay opportunities in your lap and if they're not the opportunities you want, then you're doing something unpleasant. But if they're what you're excited about, then it will just skyrocket you into wonderful things that you never imagined that you'd be able to participate in so early in your experience.

Dr. Max Boakye:

Do you feel you have adequate resources to help you reach the highest you can reach? In other words, access to mentors, for example or another way to phrase the question is, is there something that you wish you had more of as you try to reach your fullest potential?

Dr. Aurora Cruz:

Time, but no one else can offer that to me. I want to be Hermione with the Time-Turner.

Dr. Max Boakye:

Let me know when you figure that one out.

Dr. Aurora Cruz:

I'll let you know. Yeah. I don't know Dr. Boakye, but it's good that we have to keep play that one close to the chest. I don't know. I think that life is all about the opportunities you make for yourself and the way that you prioritize things. And I think in any environment you can be successful if you are willing to make this sacrifices to get to the resources that you need. I don't know. I've never found the... I find buffets to be extraordinarily overwhelming, right? It's like, I don't know what I... There's so much here and there's so many options and it doesn't really help me decide what I want. It just gives me more things to sample which is great, I guess, but in the end if all you really wanted was this one thing and you filled your plate with other things, you haven't really necessarily gotten what you wanted out of it.

Dr. Aurora Cruz:

So it's great to be in an environment where you have a lot of resources. It's great to be curious and to try to utilize these resource as much as you can. But I think the key to success is being a self-starter and somebody who makes their own opportunities and is able to pursue their own resources. But I think the key at is finding a mentor who can help you navigate that because those resources may not be available at your own institution or even in your own field. If you're excited about something that your field has not really developed, then you've got to go outside of your field, right? But it's about finding people who can help you with that process. And that's about mentorship. And those mentors can be the ones who provide you those resources or help you find them. So to me, I am happy to have someone to help guide me along the process or who is invested or excited in my future, that I can utilize the resources they have.

Dr. Max Boakye:

So it's never like you say, oh, gee, ways. I wish there were more female neurosurgeons or female chairs of neurosurgery, or that hasn't crossed your mind.

Dr. Aurora Cruz:

Oh, interesting. I thought about it definitely. When I was choosing neurosurgery, there had been one female chair ever, Dr. Muraszko when I applied and started neurosurgery residency. And now we have, I don't know, six or seven, I'm losing count. There's so many. But now I'm so excited about that and it's incredible and such a wonderful change that we've seen in our field. I think that most of us who are in some minority in our field are excited to see that change, but I haven't let it get in the way. I don't know that it would've... I see the value of it for future generation. And I'm glad that as a neurosurgeon, who is female, that I can mentor other women who may be afraid or may just need to see a friendly face or somebody who looks like them or who is like them to have the strength to pursue this field.

Dr. Aurora Cruz:

But I think that you're always going to feel like you're unique and there's never going to be anybody who's just like you. And so you have to be able to find a way to find similarities in people around you. So I'm excited to see more female chairs and I'm excited to see more female presidents of our organized neurosurgical societies. And I'm just so proud of the women who have come before me and have blazed this path for us, but I don't know that it's necessarily something that was an unfulfilled need in my heart going into this.

Dr. Max Boakye:

Much has been said about burnout. From a residents perspective, how big of a problem is this and what can be done to improve? I know you've worked some in this area, describe some of your efforts in this area to improve resident wellness.

Dr. Aurora Cruz:

I think that burnout affects residents and faculty and burnout faculty affect residents and burnout residents affect faculty. And it hurts your patients and it hurts everybody around and you can no longer perform your work because you're emotionally exhausted and at the end of your rope. And I think it pushes you to the edge of reason. Neurosurgery residents historically are known as irascible and argumentative loaners and willing to sacrifice anything or anyone to get what we want and to achieve our goals.

Dr. Aurora Cruz:

And I don't think that is who we are now, and I don't think that's who we are expected to be any longer. So we're selected for and encouraged to be whole people with families and social lives and interests outside of neurosurgery. And that comes out at a price of time and emotional energy. And when you are emotionally exhausted and burned out, you can't maintain those things. All you can do is put one foot in front of the other and you can barely be a doctor much less a wife or a parent or a friend or anything else. And that creates this snowball effect that many people find themselves in. And some people never get themselves out of it.

Dr. Aurora Cruz:

So I think acknowledging the difficulties that we all face in a very morbid field with very high expectations and long training and extraordinary external pressures and expectations and having some grace with each other through that process and dropping some of that machismo that I think we've, in some ways, have come to love about our field where we talk about being the strongest and the best and winning the awards for the most painful, suffering, exhausted resident in the hospital.

Dr. Aurora Cruz:

It's not an award. It's not a competition. Everyone around us is suffering. Our patients are suffering. The nurses are suffering. Your attendings are suffering. Your co-residents are tired too. And just having grace with each other through that process, I think is important for getting people out of that snowball. So at the end of my second year residency, I had a newborn at home. My mom suddenly died and things were really tough. I was on Q3 call. It was a really difficult time. And in those dark moments, I don't know if I acknowledged his burnout, but I just went, wait a minute. I can do my job, but I can barely do my job. And I'm not doing a good job at home and I'm not being a very nice co-resident right now.

Dr. Aurora Cruz:

And I realized that I had to secure my own oxygen mask before I could help the person sitting next to me. And I think we all just sometimes need somebody there in that process to help us out. Sometimes we're putting our own oxygen mask on and sometimes someone else is helping us do it too. And getting us to the point where we can start healing and start improving our mental wellness and getting back on track so that we can not just do the job, but do it well and do it with joy and also be whole people as an important part of that.

Dr. Aurora Cruz:

So I'm really excited. I was very surprised and excited to be asked to be part of the resilience and wellness committee for the Congress. And we are working on some really cool projects right now, improving awareness of burnout neurosurgery, doing research to better understand the manifestations of it, and then how we can both build resilience and self care in neurosurgeons themselves. So treating the individual, but then also looking at the systemic issues and questioning those systemic stressors to see if we can change the environment to try to prevent burnout or to support each other when it does happen because in our field, emotional exhaustion is inevitable and it can certainly start the domino effect in our personal lives that can lead us to becoming dysfunctional humans and keeping our colleague well. And keeping ourselves well is important for being good doctors and being good humans. I think hopefully that's what we all want.

Dr. Max Boakye:

Any specific recommendations that have already come out of your work in the Congress yet or you're early in the process?

Dr. Aurora Cruz:

Well, this is a new thing. This committee has only been going on for, I think, two or three years. So there are some great minds who have been heading this process. And one of the things that we've been doing is just bringing awareness to the shared experience that we all have in neurosurgery. So we've done the Voices of Neurosurgery event at the last two meetings in 2019. And then this last year in October 2021, just having neurosurgeons, residents, even medical students share experiences that related to neurosurgery that we can all relate to.

Dr. Aurora Cruz:

And I think when we all start to go, hey, wait, me too I've had that experience. I know what that feels like. Or gosh, I could imagine being in that position and or wow, look at this great neurosurgeon that everybody knows that has struggled in this one way that's so relatable and so honest. Just getting that started, I think is the first step to acknowledging that maybe we have a problem in neurosurgery and in medicine in general. And that's always the first step to making big changes. So there's definitely been some research involved, there's been some events and some efforts that we're making to try to tangibly change this, but this is a very young field of neurosurgery research. And so I'm excited to be part of it.

Dr. Max Boakye:

What have been the biggest impediments to learning neurosurgery and the acquisition of appropriate psychomotor skill either in yourself or in your colleagues?

Dr. Aurora Cruz:

Well, I think there's a minimal requirement for natural skill and a requirement for taking pleasure and learning how to do procedural tasks with your hands. And I can only imagine neurosurgery would be miserable if you didn't have some minimal amount in either of those areas because so much of what we do is learning new skills with our hands throughout our entire careers and taking pleasure in that process. But I think that a lot of it is repetition. So one of the difficulties that we're experiencing in current residents and for the generation prior to mine as well is restrictions in our case numbers. So we're doing less surgery, for example, aneurysm clipping and bypass, we do not perform those nearly as often as we did 30 years ago. And so that training has changed significantly.

Dr. Aurora Cruz:

And so there are things that we have to do to augment that through video education, through virtual reality learning and modules and things like that. And we also have less time to do more work in many ways, we are now have work hour restrictions, 80 hours a week. And there's more documentation. There are more family discussions. There's a lot of expectations for involvement in outreach in organizations research. And then on top of that we're selecting people who have lives. So there's another thing on top of that, right?

Dr. Aurora Cruz:

All of that, I think, ends up saying, okay, well, how do you maximize the learning experience within these restrictions? And it comes down to the quality of the learning experience through active preparation, through participating actively in cases and staying engaged, through processing what you've learned with your attending or with your senior resident after the case and talking about nuances of what happened and what you could have done differently or how to move on from that, and keeping notes. Every great scientist and surgeon has memoirs and their memoirs are based off of their notes. And if you don't keep notes, there's a reason why those lessons have lived on from antiquity is because they kept a record. They weren't people who were able to memorize things and them forever, they had to write it down.

Dr. Aurora Cruz:

So writing down what you learn, reviewing that information, and then understanding as you and I talk about all the time, right? The zone of proximal development and thinking about being very intentional

with your learning and with taking things to the next steps so that you can continue to learn in a very limited environment is important.

Dr. Max Boakye:

Regarding mentors, do you currently have mentors and how did you go about finding them? And do you have mentors internally to University of Louisville and externally beyond University of Louisville? And maybe describe what your relationship is like with the mentors and how you are a good mentee?

Dr. Aurora Cruz:

Well, I think mentors are like... Being in a mentorship relationship rather as a mentor or as a mentee is a lot like friendship, right? I have many mentors in many different areas of my career and in my life. And just like I have many different friends from different parts of my life who know me in different ways who I would go to with different problems and to share different experiences with. So I think it's a natural relationship that forms between like-minded individuals. It can be intentional just like friendship can be intentional like, hey, I think that person's really cool, I want to be their friend. And then you pursue that friendship. I think you can do the same thing with mentors and you can pursue people and see if it works out and see if you have something in common that they can help build in you.

Dr. Aurora Cruz:

And it's a two way street. Mentorship is not a one way street. They're not just providing you mentorship, right? You have to, as a mentee, provide feedback about what you've learned, demonstrate that you're taking their advice and their teaching into account, and that you're doing something with it. And oftentimes that transaction includes like, hey, you're interested in getting done this project? I as your mentor, I'm going to provide you an opportunity in this area and then your responsibility or my responsibility as a mentee is to run with it and to do the best job I can with that. And that elevates yourself and your own experience and takes you to the next level which was the whole point. But also that reflects well on your mentor, especially if you acknowledge them and you continue to work with them and build this mutually beneficial relationship. It should be an interdependence or a mutually beneficial situation.

Dr. Aurora Cruz:

So I have wonderful mentors within University of Louisville and in different areas. Certainly I would consider you one of my mentors and talking about socioeconomics and our mutual interest in business and teaching and leadership. And I've come to you with certain things. And I would go to Dr. Nota to Dr. Neimat or to Dr. Ildstad with different kinds of things that I need mentorship in and just like you have different friends and different phases of your life, but usually those friendships maintain long term, I have mentors from medical school that I still call once in a while that I need their advice on something. And I'm sure my relationships with my faculty currently will continue to develop and change as I move on to the next steps of my career.

Dr. Aurora Cruz:

So I think it's important to appreciate your mentors, to have enough that you can come to people with different things that are important to you and not to put too much pressure on any one individual in your life, just like you shouldn't rely to heavily on one friend, you might overwhelm them, you need to develop healthy relationships with your mentors and your mentees.

Dr. Max Boakye:

For students that are thinking about neurosurgery or for spouses who are trying to understand what their partners are going through, several metaphors have been used to describe the neurosurgical training experience, Navy SEAL Training, landing an F16 on an aircraft carrier, message to Garcia. What metaphor would you use to describe your residency experience to give people an idea of what current residency training is like?

Dr. Aurora Cruz:

I was thinking about this. I can't really find a great one, honestly. You mentioned a pilot, people talk about pilots as being similar in a lot of ways to surgeons. The difference is that we're not on that plane, right? The plane goes down so does the pilot, right? Our patients are on their own plane and we're like air traffic controller who's trying to manage the situation, but ultimately we're not the ones that experience the downfall of the situation if something fails. I joke that neurosurgery is a jealous mistress, it is an entirely separate relationship in my life being neurosurgeon that often tries to pull me away from other things in my life, but I keep going back to it because there's something about it that just is part of who I am.

Dr. Aurora Cruz:

And so my family appreciates that and acknowledges it. And doesn't try to understand it because they never really will, but values that. You have to have some people in your life who even if they don't totally get it will admire, I guess, what it takes to do this and will not hold it against you or be resentful because it is so easy to do that. It is so easy to hold it against a neurosurgeon for the difficult life that they experience, but think that what we all acknowledge to each other is that, I want to be home with my kids too. I don't do this because I don't love my family. It's not like I'm trying to take something away from them. It's because I'm doing something that's really important and that I love. And that gives me a sense of self that's important. And what makes me a better mom and a better wife and a better friend and a better person.

Dr. Aurora Cruz:

So I think the less, the people around you demonize you for your career and for what you do, and the less you demonize yourself for the choices that you've made including going into neurosurgery, the happier you will be and the happier family will be because you can acknowledge it for a positive thing not blaming neurosurgery or your career for every bad thing that's happened in your marriage or apologizing to your children that you're a neurosurgeon and that must be really hard for them. You can acknowledge the challenges that you're in, the sacrifices that your family and that you have made for this while still acknowledging its value and appreciating it and seeing it as a positive thing.

Dr. Aurora Cruz:

I've gone off a little bit from the question you originally asked, but I think that the advice I would give is to see the sacrifices as positive and as investments that we make in our patients and in our careers and in our family's lives rather than something that we're taking away because I think that this is a great calling and a noble profession and appreciating that and remembering that you're not a bad person because you chose neurosurgery, that you're actually good person and that you are doing something noble and valuable and important can really get you through the tougher moments of self sacrifice and sacrificing your family's time with you and other things in your life.

Dr. Max Boakye:

I forgot to mention at the beginning that you're going to be PGY-7 in a few months. So likely seeing light at the end of the tunnel. In reflecting back, what are maybe two or three of the most important skills and traits that you've observed to be most important for success as a resident? Another related question is there some trait that you wish you had more of?

Dr. Aurora Cruz:

Well, I think that the advice I was given at the beginning of residency has hold true which is be available, be affable, and be able, right? You got to show up and do your job and take it to the next level and you have to be kind to the people around you. You have to be easy to get along with. You can certainly have your moments, but you can't be a jerk all the time. You got to be a nice person and that will get you really far. And you have to be able, which means being prepared, having a sense of what you're doing, working on your own deficiencies and trying to improve and just being self-directed in that way.

Dr. Aurora Cruz:

So it's not novel advice. It's just the same advice I started off with six years ago, seven years ago which was just show up, do a good job, be a nice person, and do your best. And it's okay to have feelings. There are a lot of feelings in residency, frustration, sadness, disappointment, insecurity, but you have to find a way to process them through activities or through talking to your friends or whatever your normal emotional processing structures are and behave appropriately because, like I said earlier, everyone around you is suffering and exhausted. And your patients, your co-residents, the staff, everybody is tired. Medicine is in a very difficult time right now. And just because you have the longest residency or you work the most hours or whatever it is, it does not give you cabosh to behave unkindly. And in fact, I think more so we are in a position of great respect and authority, and it is my responsibility as a resident and as a neurosurgeon to maintain that position by being kind to others and taking care of people the best you can, and it will really pay back in dividends later.

Dr. Aurora Cruz:

Building friendships with nurses as an intern has just paid dividends because these are now my friends that are there when... I was on call when my mom died and I'm on the phone crying. And these people I've known for a few years are coming around me and literally picking me up and carrying me to the call room. And I don't know that if I was an unkind person or I had not taken the time to build those relationships, if I would've received that level of grace from the people around me or would've deserved it.

Dr. Aurora Cruz:

So the one characteristic I wish I had more of would be probably patience. It's very easy to become impatient. And in fact, it's almost encouraged indirectly as a resident because you're always trying to move things along and get things going and come on, come on, come on. And you can build intolerance to obstacles that actually end up just wasting a lot of your energy. So I've tried to be more patient and take a step back and let things play out a little bit before stepping in and intervening. And I hope to continue to build that skill as time goes on.

Dr. Max Boakye:

It's kind of a surprising that there is not a formal course in leadership during residency. How do you think we can train residents to be better leaders or another way, what should be done about residents who seem to lack key leadership skills?

Dr. Aurora Cruz:

Well, that's a tough one. I think like any characteristic, there are people who have natural skills and leadership and those who have to work really hard to develop it. I think the most important thing is to of good examples around you to set a good example. You will often find that residents, especially junior residents are reflecting the behavior they see around them. And if they perceive a lack of consistency or maybe some hypocrisy in their leadership, they're less likely to respect that and to want to be better.

Dr. Aurora Cruz:

So I think it's important to set a good example. I think that there is some incredible research out there and some wonderful resources in terms of books and online courses and things you can do that will help break down leadership and what it means to be a leader into parts that can be processed a little bit more easily, but ultimately, that is just a vehicle for introspection. And for understanding yourself better because to me being a leader is about taking care of other people and being willing to take responsibility for other people's actions, for being willing to step up, for being not... The opposite, to not be self-serving, but rather to be serving others through your position and to do that well, you have to understand yourself and your own deficiencies and your own proclivities and the things that you're good at and the things you aren't good at.

Dr. Aurora Cruz:

So a lot of the research and the books, the self-help books and the books by great leaders that we have had in the past, a lot of it is, I think, a vehicle for self-reflection and a self understanding so that you can use your greatest strengths to help others, and then understand your weaknesses so that you can find people who have strengths in those areas to help you do a better job for everyone else. It's not about being perfect or being about everything for everybody, but knowing what you're good at and knowing what you're not good at and building the best team that you can.

Dr. Aurora Cruz:

So as far as helping people who don't have those skills, I think encouraging them to self reflect, offering them resources, setting a good example, and the constant process, if they don't have that already as part of who they are of action, reflection, and then a reaction to that process and changing their behavior through small steps of self-analyzing and then making small changes as they go through. So to me, I think it's extraordinarily difficult. I don't know how you make... I certainly don't have the answer of how to make a leader out of somebody who thinks at it, but I think that there are resources that can help people grow in different ways. And there are different kinds of leaders, so you can help build people in what they're naturally good at.

Dr. Max Boakye:

You mentioned books, is there any one particular book, one or two particular books that come to mind that have made quite an impression on you?

Dr. Aurora Cruz:

How to Make Friends and... What is it? How to Make Friends and Influence People?

Dr. Max Boakye:

Dale Carnegie. Yeah. Right.

Dr. Aurora Cruz:

Yeah. Exactly. That one was a great one. That really breaks it down into basics. And then there was a great book... Oh, what was the name of the author? I'm going to have to look it up, but it was called Influence by Robert Cialdini, The Psychology of Persuasion. And the thing I find interesting about that book is it really sounds like it's meant for somebody who's trying to manipulate the situation or something. What it really does it actually teaches you how you are influenced by things around you and how you can process that and understand it for what it is so that you can react appropriately to situations.

Dr. Aurora Cruz:

So as a leader, I think understanding that... And you're a leader in every way, right? When you're a medical student, you're a leader in the eyes of undergrads. And as a resident, the medical students look to you or your junior residents look to you. And as attending, obviously you have even more people looking up to you. So we're all leaders, but we can all be influenced by the things around us that are happening, including our own cognitive biases and personal weaknesses and difficulties that can lead us to making the wrong decisions or to not totally understand what we're doing. So I thought that book was great and breaking that down. Those are two favorites.

Dr. Max Boakye:

All right. A couple of more questions for you. What advice would you have for struggling residents?

Dr. Aurora Cruz:

It's hard. It's supposed to be hard and that is not a sign of weakness. It is a truth. Residency is very difficult and it only is there to build your strengths now because you're going to sure need them later, right? The things that were hard for me as a junior are easy for me now, but thank God because I have new challenges as a senior resident and as a chief and I'm sure that... You all keep telling me that it just gets worse, so I'm ready to build these skills so that I can move on to the next challenge.

Dr. Max Boakye:

Yeah.

Dr. Aurora Cruz:

But it's supposed to be hard and I ask my four year old, right? Tying your shoes is really tough. And it's only hard because you don't know how to do it. And it's only hard because you haven't experienced this before. And for a lot of people, they have not dealt with the bottom of the barrel. Oh, my God. My life is ending. Challenges that some people have had to face. And you may feel like your life is ending or that this is the worst thing that's ever happened to you, but it probably won't be in the long run. There probably will be something worse if it hasn't already happened. And you build yourself, you build your resilience through challenges. And so seeing this as an obstacle that can't be overcome it's just nihilistic,

right? You have to see this as what are the things that I can learn about myself so that I can be stronger for the next challenge because there will be another one and I will survive this and there will be day.

Dr. Aurora Cruz:

And having the self-reflection again, to understand why you're struggling and what needs to be done and utilizing the resources around you, i.e, your mentors or people that you trust to help you find the resources you need to get better at whatever it is, whether it's interpersonal interactions or clinical knowledge or surgical skills or leadership. All of those things are very unique challenges and very difficult to navigate through as a young person in a very challenging environment, but you can do it, you just have to have the right resources. And that means understanding what the problem is and then asking for help.

Dr. Max Boakye:

My final question for you it's a magic wand question I ask everyone. So if you had a magic wand, would you make any changes in neurosurgical residency and training? And if you would, what changes would you like to see? How would you improve things? You can say you would make residency a 20 hour week and with 16 weeks of vacation a year.

Dr. Aurora Cruz:

Oh, that's nice. I would not be interested. Thank you. I think it is the way it is for a lot of reasons and that we don't understand at the time. And there have been a lot of things that I thought that I thought were awful or unnecessary that I've come to appreciate. And I don't know if that's just the Stockholm syndrome or whatever, but I think that life and neurosurgery is full of extraordinary challenges and they just make you stronger. And there are some things that we have that are, I think, maybe are unnecessary, but I honestly don't know what they are because we haven't gotten rid of them yet, right? You got to get rid of them to see what happens. I don't know. I'm very experimental, right? I don't know. I can have a hypothesis that I can't really say it's going to be better until we've tried it out.

Dr. Aurora Cruz:

So I think there are a lot of things that we could do better in terms of having more grace with each other including our faculty and our residents, building more better relationships. I think all of these things are already in the works. And so I'm not going to claim any ownership of the changes that are already happening in our culture, but I think that I want the Time-Turner.

Dr. Max Boakye:

Yeah. I viewed Dr. Nota the other day, he's our residency program director. And he mentioned that he wished he had a magic wand that it was a world where residents taught each other much more. So each residents basically teaching themselves, he said he believed there's not in enough of that.

Dr. Aurora Cruz:

Yeah. I think that's probably true. I would venture to take that to the next level and say that I think faculty should teach each other more too. I think we all need more of that. I think that interacting with each other more and breaking down the barriers of ego and insecurity and hierarchy and all of those other things to be open to learning from each other more and listening without responding and without reacting, I think that would be an amazing world. I think that we all have a difficult time as people in

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general, but as surgeons specifically, we tend to build up barriers and walls thinking that if somebody is suggesting something to you it's because they must not like the way you do it or you have to defend yourself or defend your way of doing things. I don't think that's true. So yes, I think residents should be more open to learning from each other. And I think that that should just continue on forever and ever

Dr. Max Boakye:

Fantastic. Well, we've done as we come to the end of the interview, been a fascinating conversation with incoming PGY-7 chief resident, Dr. Aurora Cruz. It's been really a valuable discussion. I've learned a lot and I hope that this is useful to either medical students or other residents and faculty in neurosurgery as well as spouses and other observance of residency training. Thank you very much. Dr. Cruz, it has been wonderful talking to you.

Dr. Aurora Cruz:

Thank you, Dr. Boakye. This is wonderful. Thank you for inviting me.

Dr. Max Boakye:

Thanks.

Speaker 1:

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