

The Art of Engineering with Denise McIntosh

Episode 011: Dr. Namrata Karki Kandel, Product Development Manager with [Ortho Molecular Products](#)

In this episode, Denise speaks with [Dr. Namrata Karki Kandel](#) about her journey all the way from Nepal to Stevens Point, Wisconsin. Growing up in Nepal, her parents stressed the importance of education. Her passion and love of higher education pointed Namrata in the direction of America. Today, she leads a team of scientists and engineers at Ortho Molecular, and mentors other up-and-coming experts in the field. She and Denise share inspirational stories of how to push through and go after your dreams.

Denise McIntosh *Good afternoon. Coming to you from Springfield, Missouri, this is another podcast of The Art of Engineering from Custom Powder Systems. I'm Denise McIntosh, and today I'm excited to have Dr. Namrata Karki Kandel, a PhD in Food Science and the Product Development Manager at Ortho Molecular Products in Stevens Point, Wisconsin. Welcome, Namrata.*

Namrata Karki Kandel *Thank you so much. It is so pleasant to be with you here this afternoon.*

Denise McIntosh *Well, we got connected because we have built some equipment for the facility where you are located in, Namrata, and I'd like for you to just share your story of how you found Ortho Molecular. And let's start back at your childhood, and food science, and how you came to be here.*

Namrata Karki Kandel *Sure, that's a long story. I would say, we found each other, actually, at IFT, which is the home organization I belong to. It's [Institute of Food Technologists](#). And the meeting usually rotates between Chicago, Las Vegas, or New Orleans. So it was in Chicago in the year 2016, and I found Ortho representatives on the expo floor, and, yeah, they were recruiting for this position for machine engineer. And I was, I had just graduated from school with my PhD and, yeah, we found each other there.*

Denise McIntosh *What got you to food science in the beginning?*

Namrata Karki Kandel *I'm originally from Nepal, and my whole mission to come to the U.S. was for higher education, for my love of research. And to pursue higher education, that's how I began my journey here in the U.S. So in terms of applying to different universities and different programs, [Food Science at Louisiana State University](#) caught*

my attention. I applied because of Dr. Jack Losso. So his research was of interest to me. He was working with various nutraceuticals that's good for your health, right? The nutraceuticals against various diseases, chronic diseases. So that's, really, was very interesting. I applied, and I was selected for that school under his mentorship. And that's how I started my journey in the U.S. and did my Master's and PhD in Food Science with him at OSU.

Denise McIntosh *Tell us what Ortho Molecular does.*

Namrata Karki Kandel *So we are a company with a vision of transforming the practice of medicine. We are a dietary supplement industry who, are very proud to say, makes quality, efficacious, dietary supplement products. So that's what we do. And we only sell our products to functional medicine doctors like practitioners.*

Denise McIntosh *So you and I, earlier in the week, talked about that we need to trade field trips for your group to be able to come here to see how we build the equipment for your facility, and I would love to go there to see how, then, the products are made at your facility.*

Namrata Karki Kandel *Yup. It'll be like, we will, we are waiting for that day. My team is very excited. So I not only manage products, but I also get to manage a team of scientists and engineers here at Ortho Molecular Products. Most of them are female, and so they are like bright, talented ladies. I recently hired a gentleman too, so we are a mixed team. And, yeah, like we talked about our trip to your company so that they can see where the equipments are built, and they are the one who designs the scale-ups or from product ideation to commercialization, right? Like we work with lab and samples to scaling up to like big, thousands kilos of samples. So they do the work on engineering side and, yes, it will be a great opportunity for them to visit your plant.*

Denise McIntosh *So tell me a little more about the process on your side from the scientists who, like when your clients come to you, then what is the process to go from their idea to an actual product?*

Namrata Karki Kandel *Definitely there are various phases of product development, right? And it all begins with an idea. That's an idea. And ideation happens as a beginning phase of product development. And as it passes to ideation, the product enters the feasible development phase, where, like my team actively works on the development side, and it's a cross-collaboration between various departments here. Like making sure it's tested well, good quality. So a lot of collaboration between quality*

departments, procurement sourcing, purchasing. All of the departments come together to make sure that idea is being transformed into a real product.

So especially the formulators and scientists, they work with the material itself to see how to make sure it tablets well, or capsules, or flavors are good, consumer acceptance is there. So they work in the development phase in that regard, and also scaling, because when you work with small-scale R&D samples, it's only like bench scale samples, but we need to make sure that product goes to a bigger vendor so that there is upscaling, like products are made in a higher volume. So they take responsibility of analyzing that part as well. So that's done. And then once testing meets specifications, then protocols analyze well by regulatory quality so that we meet all the specifications and criteria, and it's finally released to the consumer or your customers.

Denise McIntosh *So I do understand in some of my prior interviews that sometimes the real trick is to take that small bench-size product, and it doesn't always relate on a bigger size, even from the chemistry.*

Namrata Karki Kandel *Right. And that's where you put your science and engineering concept behind to make sure the materials are behaving the way you want them to behave. So that's where a lot of analyzes happens, and there's a team who is analyzing that for it. And those are the formulators and scientists.*

Denise McIntosh *Well, glad to hear that you're encouraging young women scientists to join you there.*

Namrata Karki Kandel *Thank you. Like we, yep, we have like two formulators and scientists, and men, who started, actually, this week.*

Denise McIntosh *Oh, very good. Very good. So, Namrata, throughout your career, who have been your influencers or your mentors or your guides that have helped you along the way?*

Namrata Karki Kandel *The list is long, Denise. I have had mentors in every phase of my life, right? But right now, when I think of a mentor in terms of career I like to mention Indra Nooyi, the former CEO of PepsiCo. I love her so much. And yeah, like she came into the U.S. in the year 1980, and we are from a completely different generation, but still there are a lot of similarities. And when you have models like her, you can relate to her journey, her experiences. And, yes, I'd like to mention her as one of my, I mean, it's not that I've met her in person, but I follow her along through her speeches or*

experiences. I read about her, her LinkedIn, I literally stalk her on LinkedIn. So I like mentioning Indra Nooyi.

Denise McIntosh *You know, when she was appointed to that position, I was like, “Yay! Here is a huge company, and here is a woman, yes, from not the U.S., but this is a global company. And what a great example.”*

Namrata Karki Kandel *Yup, right? And I think like, if she can do it, I can do it.*

Denise McIntosh *Yes.*

Namrata Karki Kandel *Yeah. So I definitely have a lot of mentors. Like even my company right now, like, people who you work for, like, you know, like you find mentors in every phases of their life, and, like, they help you to help you see the bigger picture. And the list is so long that I don't want to take names here, but thank you to all those mentors. If you listen to this podcast, you know who you are.*

Denise McIntosh *Well, you know, as someone who has not left the country to explore, you know, another country for education, or another country for a career, can you tell me how that process, or what guided you to come here?*

Namrata Karki Kandel *Passion. I was twenty-two, you know, like you can do anything, you, I can still do anything, but passion, that energy, that love for research, and that love for higher education. And the U.S. was, is still the top for providing higher education. So out of all the countries, U.S. is like the top-most where you want to go and learn more from the experts. And yeah, that was the main reason that drove me here. And courage, like you believe in your dreams and it happens.*

Denise McIntosh *So did you have other family members or friends that had made that journey?*

Namrata Karki Kandel *At that point I had a cousin in California, came from Nepal. I would say, in the family for coming for grad school experiences, I was the first one to come to the U.S. for grad school. So yeah, the first one, the eldest out of all the children. I have two siblings, two brothers and a baby sister. So yeah, the first one to come to the U.S. for higher education*

Denise McIntosh *You were the guide. You were the one going out in front. Congratulations.*

Namrata Karki Kandel *I've made it so far, so thank you.*

Denise McIntosh *Well, I also think from our earlier conversation that you have a young family. So how has that experience been in juggling all these things? The work, the family, the friends, the COVID.*

Namrata Karki Kandel *So, yes, I have a very young family. I have a daughter who is thirteen months old, so it wouldn't have been possible without a supportive husband. He gets all the credit. So like, how do I juggle work and life? I think my formula is disengagement. It has worked for me, meaning when I'm at work, I'm at work. The hours when I'm at work, I try to stay disengaged, just focus on work, get what we need to accomplish, like get things done. And when you go home, I'm only a wife and a mom. So I try to keep that work-life balance by making sure there is disengagement between work and life. And that has helped me. And it wouldn't have been possible if I hadn't had a supportive husband.*

Denise McIntosh *That's interesting. That's harder to do than, Tim and I could attest to that, simply because we sort of live and work where we are. But yes, I admire your approach to that because it's difficult to do, particularly when you're passionate about what you do, and you obviously are, and yes. And choosing those mates that help support us in those endeavors is... It's important.*

Namrata Karki Kandel *Yup. And especially not having Indian families around, like, you know, so having him as a core support, it's been, I'm very grateful.*

Denise McIntosh *So you've mentioned the mentors you've had in your life. And are you now being a mentor to some of the young scientists who are joining the organization?*

Namrata Karki Kandel *As much as I can, yes. They are my priorities right now. And I think the number one advice I have for them is, "Dream big. Sky's the limit." Right? We can do anything, like just put your mind and heart to it, We can achieve anything. And like, especially like, I think like more, I have a key message to young scientists outside our, though, is like, "If I can do it, if my team can do it, you can do it. Just get the fear of, you know, don't have the fear in you, like, just believe in you." And I think other thing I have really thought of, like imposter syndrome in women, learn about that. Read about that because I found women, like those terms were new to them. Read about imposter syndrome and how you can find ways to cope with that, because, yes, I think it's still high in women. And one part I make sure, like in my team, try to learn about that and find ways to deal with it.*

And as a manager myself, like I think your company, you're like, a manager can play a big role in helping women overcome that. And I'm trying my best. So a message to younger women and younger professional, learn about those terms. Those are real. See if you're experiencing those, and find ways, like talk to your mentors, find mentors, and it will be easier. And there was one statement from Brittany, one of my team members, who works in the manufacturing facility, and her key message is, and her name is Brittany Lists, great scientist, and as women in this industry, we bring a different side to things. We have the technical knowledge, great multitasking skills, but we also have a lot of strength in relating to people, which helps us excel in the industry. Smart women really can change the world one department at a time.

Denise McIntosh *Oh, Namrata, that was absolutely perfect. And it's encouraging to me, Namrata, to hear those conversations from the younger women who are coming up in careers, because those things were just simply not available when I started. So even having the conversations and discussing, you know, how it makes you feel when you feel like an imposter, or that we truly do need the encouragement from each other. Regardless of whether we're male or female, the support system we offer each other is... It's invaluable. It's invaluable about how we feel about ourselves on a day-to-day basis.*

Namrata Karki Kandel *And especially the gender gap too, right?*

Denise McIntosh *Yes, absolutely.*

Namrata Karki Kandel *The gender gap in the engineering sector, that's a huge gap. We understand that. How do we, what are the ways we can do better about it? So like, I would like to refer to one paper, if time allows, like there is a paper that was published in 2017 by Alison Master from the University of Washington, the title is "[Building bridges between psychological science and education: Cultural stereotypes, STEM, and equity.](#)" So this is a problem around the world, this inequity, gender gap, and workforce, and such, it's such a nicely written paper about how to spark a change and how to minimize that gap. So definitely read that paper if you have time, because it's such valuable information that was published and a good resource.*

Denise McIntosh *Very good. So you see you've come from a part of the world, Namrata, that is one of the places, it's still on my bucket list to get to, which is Nepal. We were fortunate to build some equipment for Dr. Reddy's facility in India, but I didn't get to go there. So what would I see if I went to Nepal?*

Namrata Karki Kandel *Friendly faces, good food, welcoming heart. So like, yeah, like Nepal is known for the land of Mount Everest, right, and all that. And it's a beautiful country. It's very untouched, very natural, and, yeah, lots of warm heart that will welcome you. So anytime you decide to go Nepal, let me know, we have family to welcome you there.*

Denise McIntosh *Oh, I absolutely will do that. I have a next question. I'd like to hear about your parents.*

Namrata Karki Kandel *Okay. My parents are still in Nepal. I'm the first daughter, and I think what I am today is because of them, they're investing their investment on us. I think it was all about education. Education was the first important thing in the family, making sure we got good education from good universities. Their life savings were invested on us in our education. And like my parents, both my mom and dad, and a special thanks to my mom especially, I think her hunger for education, that made her, you know, made sure that her kids were educated well.*

And then here we are. Like my one brother is a doctor. Another one is an engineer. And I am here with a doctoral degree in food science. So yeah, their investment has paid off. And I think that was the number one priority for the family. Their life savings was invested on our education. And thank you, mom and dad.

Denise McIntosh *Well, what an inspiration. And thank you for sharing that story.*

Namrata Karki Kandel *Yeah. Parents can make, like, you know, when we talk about exposure and young, like early childhood, parents, teachers, they're the first people we can think of. Like we can make impact on a girl's, on a child's education. So big responsibility to bear.*

Denise McIntosh *Yes. So is there anything else that you would like to share about Ortho Molecular, about the job you do there, and about what the plans are for Ortho in the new year?*

Namrata Karki Kandel *Well, I would like to say how proud I am to work for Ortho and our company. Like our manufacturing facilities got expanded this year. So we're a growing company. We are recruiting so much. So job positions, please take note if you are listening to this podcast, it's a great team to work for. And one thing I noticed, they're really good at identifying talent, recognizing the right, qualified person and putting them in the right position. They're really good at it. And it does make a very big impact, right, in operations and making like, yep. And yeah, this company is so good at*

that. And I'd also like to proudly mention that there are so many women in this organization, in the leadership roles, they have been great role models for employees like me. And I think that's one of the greatest strengths of Ortho too. So definitely we are expanding. There are a lot of jobs that's opening. So please check out, even like in my team where recruiting right now for a vendor sourcing specialist. So check those open positions, and if any of that interests you, please reach out.

Denise McIntosh *Well, Namrata, this has been delightful, and you are quite a good advertisement for that company and for other young scientists looking for opportunities within manufacturing. And that's really been my intent with these, is to help close that wage gap and to help young people explore the opportunities that are available. And thank you for helping me do that.*

Namrata Karki Kandel *I think like, well, again, like thank you so much from bottom of my heart for taking time to hear stories from us, from people like us. And one thing, like I was like, you know, we're busy. It never ends like day-to-day life, work life that happens. But, you know, with this, I think for me, I cannot, it's been recounted too, but like with me, I think it's a key turning point, like if you have turning events in life, and I think this is one of the moments, it's my first podcast ever, but it made me sit. It made me sit down and think about the bigger picture, right? Why am I doing what I'm doing today? So is it about work, making paychecks, making, it's not only about that. It's like we can do more, and just joining that, like yeah, learning and educating about the issues out there and like that whole gender gap defenses, it's a worldwide issue, right? And taking time, and acting on that, and how we can contribute one little thing at a time. And I'm thankful for you, like for that, like that was the biggest part of this podcast for me, personal experience.*

Denise McIntosh *Thank you so much for being with us today Namrata.*

Namrata Karki Kandel *Namaste.*

Denise McIntosh *Namaste.*