

The Art of Engineering with Denise McIntosh

Episode 002: Kim Duncan, Founder, President, and Owner of [Duncan Enterprises](#)

[Kim's](#) engineering story began abroad while attending high school on a ship. She was the only woman engineer in her graduating class and earned her degree almost two years sooner than others. In this episode, Kim shares several stories with Denise about her career journey, starting with navigating chauvinism as an employee, all the way to becoming the founder and president of her own company.

Denise McIntosh *So welcome, Kim Duncan, who is the founder, and president, and owner of Duncan Enterprises, has joined me today on this "Art of Engineering" podcast, talking to women in engineering and women in manufacturing about how we got here and the fun we've had along the way. And Kim, you and I have worked together on some projects in the past. And given that we're in this time of the COVID virus, and we're working remotely, and we can't travel, and you just happened to mention that you had done a birthday party remotely, and I'd love to hear about it.*

Kim Duncan *Well, you might want to segue it into, "Who were my influencers?" because my mother, being a physician that graduated in 1953 with my father, also a doctor, both parents in the medical field were some of my influencers giving me the impression that I could do whatever I wanted to do, and definitely discouraged me from medicine.*

So my mother moved to California about eight years ago, and she was turning ninety-one. She lives a block and a half away from me. We had a nice ninetieth birthday party last year with a lot of my friends who were able to join, and her best friend from Jacksonville, Florida flew out, but this year, that was not possible. So I made a dinner, took it up to her retirement center at six o'clock, and then we had our, my first Zoom meeting, and my mother had actually been having some Zoom meetings, ironically, more so than myself. I've always used Skype and WebEx, so I'm new to Zoom. And my two brothers, one from Milwaukee and one from Ottawa, Canada joined, and sat, and chatted with us while we enjoyed our birthday dinner and blew out the candle on the cake, and my mother said she felt better this year than she did her ninetieth birthday, so that was a good sign. She's still kicking, and enjoying life, and loved her hour-and-a-half Zoom party.

Denise McIntosh *Great! We can get very inventive in these times. So, speaking of early influencers, talk some more about how you went from parents in the medical field to engineering.*

Kim Duncan *Well, the short version is, both parents were pretty busy. So I went away to boarding school at a very young age at twelve, and after a few little hiccups and incidents, and I was a little bit of a rebel at fifteen, I got kicked out of a few of those. I wound up, my last school that I graduated from was a high school abroad on a sailing ship. And I had enough credits to graduate as a junior with a college-preparatory degree in high school, but they offered a pre-engineering discipline. It was actually a diploma from high school where you worked in the engine room, you worked on the generators, you worked on the engines that ran the sailboat when you were not, when you were under power versus under sail. And I was the only student, in the twelve years of this sailing tall-ship school was in existence, that ever completed and got that pre-engineering diploma.*

And I will say that I was a little smitten with one of the guys that did a lot of work in the engine room. He was a staff member, and we would have little make-out sessions occasionally down there, so I kind of wanted to show him that I was pretty smart. So that's my story, and I'm sticking to it.

And then I got out of high school, decided I wasn't sure after six years of boarding school that I really wanted to jump right into engineering. Actually, my grandfather had a lumber company. I thought about joining that, decided against it because he was retiring and on his way out, took a couple years to kind of figure out what I wanted to do. I lifeguarded, I waitressed, I did a number of different odd jobs.

And finally I worked in a factory, and I looked at the women. I was making, you know, good wage back in '77 or something, you know, six or seven dollars an hour. Then I looked at the women that were fifty-five, and they were making the same amount I was, and I thought, "That doesn't look like much of a long-term career." So I decided I would go back to engineering school. And then I moved from Illinois to Arizona and graduated in three years with a mechanical engineering degree.

Denise McIntosh *So in all the years I've known you, I've never heard the story about the engineering on the ship.*

Kim Duncan *I have so many tales that, you know, we'd have to have a sister's week for you to get fifty more.*

Denise McIntosh *So tell me about your experiences in engineering school, because I can only imagine there were not many women.*

Kim Duncan *I was the only woman in my graduating class. I started in '78, and I graduated in three and a half years mid-year in December of '81. So there was fifty graduating mechanical engineers, I was the only woman. I did have a few girlfriends that I had classes with and knew during the time I was going to school, maybe a handful, four or five. They all took five years, and I got out in three, so I got out before they did. I'm still good friends with one of them that went into the aerospace industry, and has kind of built bombs most of her career, and always hated her career path because she felt she was in the defense industry and didn't like it. So I'm happy that I didn't choose that path.*

Denise McIntosh *So how did you choose the path that you're on?*

Kim Duncan *Well, okay, it kind of chose me. When I was graduating and I got my first job, I decided that my personality probably wasn't going to be well-suited to sitting behind the desk, and drafting, and doing engineering, and being locked in a cage. So I thought, "Wow, I think I'd probably be pretty good at sales engineering." So I looked at sales engineering opportunities out of college, and my first job was with [General Electric](#), a big, huge conglomerate. They had a program called the technical marketing program. Unfortunately, I went to work for a guy that was kind of a chauvinist, and the last girl that worked for him had a marketing degree, not an engineering degree. And she kind of played to his favor, and got his coffee, and did all kinds of stuff. And so when I got there, he thought I was going to do the same thing.*

And I didn't think that I was supposed to get his coffee as an engineering protégé, so I worked hard and sold a lot of projects, and after six months he gave me a bad review. They flew me to Bridgeport, Connecticut to tell me they were going to lay me off after six months, and it was rather rare. I took a list of the projects I'd sold in the past six months, because I was working under another engineer, but they had all my estimates and information on it. And I went and said, "Well, he might say I wasn't doing my job, but here's three-hundred-thousand dollars worth of work I sold." And they changed their mind and decided that they thought that they should keep me. Well, I had already started looking around and had a better offer from [Honeywell](#), with a company car, and I got to stay in Phoenix.

If I'd gone, stayed with GE, I would've moved to Denver to a different division. They offered me to move to the turbine division, but I'd already been proactive and found another opportunity, but at least I didn't leave there being laid off. They wanted to keep

me, even though I had a chauvinistic boss. So then I kind of went from the frying pan to the fire because, next guy, well, I replaced a black 40-year-old sales engineer at Honeywell that had died of a heart attack, and he was kind of a token. So guess what I was? I was another token. I was working for a Mormon. So the only good news was, I had a mentor, a guy named Doug Miller, who had been there a hundred years. Everybody in all of Phoenix knew Doug Miller. He took me under his wing and taught me all about building automation and temperature controls.

And I stayed there for two years until he was ready for retirement. Of course he retired, I didn't get any of the accounts because the Mormon boss didn't think that I needed to, you know, that he needed to give a female anything really. I was just there for the numbers. I had decided that Phoenix was way too hot and wanted to move to San Diego. So then I had been looking for jobs in San Diego, and I landed a job as a mechanical contractor working in estimating in a lot of different fields with a company called University Mechanical. So I gave my notice at Honeywell, at about the same time Doug Miller did, we left concurrently, and I kept in touch with him. We were very good friends, and he did teach me a lot.

So then I moved to San Diego and started with a mechanical contractor. Well, as another situation where there's another chauvinistic bunch of guys, didn't really think women needed to be there. I stayed two years kind of getting pigeonholed from engineering to estimating kind of thing. I mean, I did some project management. I did a little bit of everything. It was a good experience, but I still saw that the guy that was running the department wasn't crazy about women. And I had a friend who was a president, but he was so high up that he couldn't really shelter me. I wasn't working for him. So I looked around, and I found a job as western regional sales manager, which utilized my controls background. I was working remotely, and I gave my notice. I was there for two years.

So we're almost to the point where I started my own business. I worked for [Anemostat](#), which was fume hood controls for about a year. Their competitor, [Kruger](#), which was based in Tucson, offered me a national sales manager job. So I started doing, I was managing reps and selling fume hood controls and laboratories. And this was in, the, about '87, '88. And I was working for a guy who had worked for Anemostat for the previous company, and he'd left there and gone to Kruger. Well, he met his wife. She was the secretary. So guess what? She wasn't too crazy about a guy having a female work for him. She was afraid maybe the same thing would happen to me that happened to her. You know, she took him away from the previous wife. So I was going to move to Tucson. I actually agreed 'cause I'd gone to college there. So I was going to move back there, but then next thing I know, he's like, "Well, we've decided you can stay in San

Diego.” Well, that was because the wife didn't want me in Tucson. Well, and then it really boiled down to every time we'd have a group meeting, you know, she didn't want us together. So there was always this underlying, the wife was kind of pulling the strings and controlling things.

So, lo and behold, I was doing the job of the national sales manager, and the reps were air distribution reps. They sold grills and grates like they were bean counters. They counted, “How many openings in the ceiling do we need?” They didn't know the engineering side. They didn't know the startup side. They didn't know the electrical control side. So I would sell the job, and then they'd call me to come and manage the project. So I was doing the job of the sales manager and the rep. And I thought, “Well, wait a minute, if you're going to do two jobs, you got to do the one that pays the most.”

Denise McIntosh *Yes!*

Kim Duncan *So I made the business plan to rep this company for California, because I had laid out like a couple million dollars worth of work as the national sales manager, and the rep wasn't participating in doing anything once I sold the jobs. So I put the business plan together to, for me to become a rep and to rep their product. So I'll take a breath and see if you have any questions with all that.*

Denise McIntosh *Well, no, but it just reminded me of a story when you said the wife who was concerned about you working with her husband. In one of my very first jobs, I didn't realize it, but my boss who would travel, I mean, I was in a sales territory in Iowa, and he would travel with everybody else in the region, but he didn't travel with me. And I was so naive, it didn't even occur to me that there was a problem with his wife having him travel with me. So I finally called the regional office in St. Louis, and said, “I don't know if there's something wrong with me?”*

Kim Duncan *Did anybody ever admit what was going on?*

Denise McIntosh *Well, yes, actually. But it was kind of the beginning of a really great mentoring relationship with the marketing manager in St. Louis. And, in fact, he and I are still in touch today. But he came out, and traveled with me, and I just needed somebody to say, “Am I doing this right? Am I doing this wrong?” You know, “I need somebody to watch me work.” But we've been through those similar situations.*

Kim Duncan *Well, it gets better. So I kind of saw the writing on the wall. I put the business plan together, everybody agreed to it, but the president of Kruger at the time was a five-foot-five, little, short-man-complex accountant, bean counter nerd, who, when*

he saw my business plan and how much money I was going to make, he thought to himself, "Well, she's going to make more than I am." So before I knew it, he squashed, like two weeks before I was going to stop working for them and start being the rep, he squashed it and said, "Nope, she can't be the rep." Well, I had already laid, put all the balls in motion to start my own business. So I had to go back to the company I repped before, Anemostat back in Scranton, Pennsylvania.

Well, I'd already laid out all the equipment around Krueger, but all of a sudden, John Hanby decided I couldn't rep because he, first of all, he was a little nitpicker. Every time I'd send in a, I took a client out to lunch or dinner, he would scrutinize it. And then he said, "Nope, she's not happening. It's not happening." So I started my own business with Anemostat, and it was rough because I'd laid everything out around Krueger. Nine months later, Hanby gets fired and, lo and behold, guess what? They come back, and they beg me to take the line. As a new rep, I've only, I'm getting married. And two weeks before I'm getting married, they want me to take the line. Hanby's been fired from Krueger, and I ended up repping them and selling millions. Even though I'd only been in business nine months, I got two or three other product lines at the time, and I sold a few projects in the pharmaceutical industry.

You know, it was a little slow going, but, and my ex-husband worked at the time, and so he was helping support me, but by the time I'd been in business two years, I was profitable even with kind of the slow start that I had the first nine months that I didn't rep the product line that I'd laid all the equipment around. So I had to do some quick thinking and strategizing. And, obviously, to go to a company that you left to go to their competitor, and then to go back, I mean, to jump twice and to get back to again, it was challenging. But I've had that happen on a number of product lines where I repped a competitor, something happened, they changed management, so I went to their, you know, their biggest competitor. Then they went out of business, or they filed bankruptcy, so I went back to Brand A. Now I'm back with Brand B. So I've done flip-flops two or three times and I've been successful with all of them. So a lot of times it is the people and the relationships that you have.

Denise McIntosh *And the perseverance.*

Kim Duncan *And to be an engineer.*

Denise McIntosh *Yes. So you have a daughter who is about to graduate as an engineer.*

Kim Duncan *I do. And that's not the best, I had a possible project and job for her in Italy, working with one of the compressor manufacturers, and then look what happened. Well, first she decided she doesn't know if she wants to go into engineering. She's got her engineering degree, but she might want to waitress, and she's got to figure it out. But I'm kind of glad she didn't get the job in Italy and have to go back there with all the COVID going on there. So that kind of worked out. I'm just happy she's going to get her degree, and I hope she'll figure it out.*

Denise McIntosh *And she will. I mean, look at your history who didn't just jump in.*

Kim Duncan *Yes.*

Denise McIntosh *After the ship experience, sometimes going away, and doing other things, and then realizing that those people that have been at that company for how many years are still only making that much money.*

Kim Duncan *Exactly. So it took me two years of kind of working. She'll already have her degree when she figures that out. She's talked about doing something in the ecological, you know, working in the marine industry, or doing something to save the planet or save the oceans. So, when she decides that she wants to use that engineering degree, I'll try to steer her. But, right now, Mom's not pushing anything as much as Mom would like to be pushing.*

Denise McIntosh *So what advice would you give? Because I know you've been active in [ISPE](#) for many years. So what advice would you maybe give other young women who you've met and are up-and-coming?*

Kim Duncan *Well, one of the things that you mentioned is finding a mentor, finding someone to groom you, to kind of show you the ropes. That's probably one of the best suggestions you can have and find that type of person that is willing to help you get a good start. Since I'm self-employed and don't have any employees, I don't get to mentor too many people. That's one of the beauties of the ISPE. I'm in the [BPE](#) as well, which is the biopharma equipment division of [ASME](#), American Society of Mechanical Engineers. Very few women in that, and it took a little kicking and screaming to get me in there because it's an old boys' school. So mechanical engineering is still a strong old boys' school network. And you can't take it personally if someone, you know, if they don't treat you with respect.*

I mean, I've found that a lot of Japanese engineers, when I first started, didn't think women should be in the industry or women should be engineers. There's certain,

Indians on the other hand have always embraced and seem to welcome and think that engineering women are fantastic. So certain nationalities and cultures really embrace women in the field. And I guess it's just a broad generalization. Maybe there's a few Asian engineers that think women are good in the business. But my personal experience, when I first started 30 years ago, was that there was a lot of old-school guys that really didn't comprehend how women could be an engineer.

Denise McIntosh *I've said this before, but I, and I think I mentioned it to you the other day, but the most condescending thing I was ever asked was by a customer who asked me if I felt bad about taking a man's job.*

Kim Duncan *Yes.*

Denise McIntosh *And I couldn't answer, but I finally did by saying, "I thought my dad who raised four girls and educated all of us with a college degree, I thought he probably wanted to see an ROI on that investment."*

Kim Duncan *Yes, absolutely.*

Denise McIntosh *So tell me what you do for fun.*

Kim Duncan *I love to travel, and I have been scuba diving in many countries, and I like to horseback ride, and I like to bike ride when I'm in a new city. So I just really enjoy going and traveling, and playing tennis, and staying active. I'm pretty active. So, yes, being locked up in COVID, I played tennis for the first time yesterday in six weeks.*

Denise McIntosh *So in all of your travels, because I know you've been all over the world, have you run across something culturally that you just found fascinating, whether it had to do with engineering and women, or just an interesting travel experience?*

Kim Duncan *I would say Fiji was one of the most exciting, entertaining, truly cultural. We, Jeff and I, went to Fiji in 2015, and we went into some of the villages, and they did songs and dances for us personally, you know, just very small group of four or five people. And it's probably like Hawaii was a hundred years ago, still very cultural. And you can really see how the people work and go into their villages. And they're not, it's not modernized at all, but they're, the happiness and the joy that those people have is very rewarding to see.*

Denise McIntosh *So we had an interesting experience going to the Masters a year ago that has turned out to be, a gentleman that we met just simply at the event, that has*

turned out to be a great business contact. We've already gotten some business with him. I can only imagine, as good as you are at networking, that your travels have probably resulted in some business somewhere that just was unexpected.

Kim Duncan *I have met people at the pool in Puerto Rico, at BPE meetings that worked for [Merck](#). Actually don't think I ever really got any business out of it, but got contacts who, and then they introduced you to somebody else. So, but I don't know that I've actually just randomly ever met somebody that I got an order out of.*

Denise McIntosh *Well, I've admired you over the years at your ability to network. And I would say if anybody's looking for a mentor for teaching networking, Kim Duncan would be one that would dominate.*

Kim Duncan *Well, thank you. I will end by saying, I've, I'm involved with your product line with isolators and process equipment for pharmaceutical. But one of my passions lately is working nationwide as a natural refrigerant specialist, helping different pharmaceutical companies, [Roche](#) being the biggest one. They were the ones that kind of kicked the ball off. And now that nobody's driving, and all the plants are shut down, our environment is getting much better. But as soon as, if we ever get back to normal, part of what I've been doing is educating pharmaceutical clients to reduce their global-warming potential and ozone-depletion potential. And so that's one of my passions and one of the things that I'm involved with that I really like*

Denise McIntosh *Great. Well, thank you for taking time to talk with us today. We hope to share this across LinkedIn with ISPE Women in Pharma and other places. So, Kim Duncan, thanks for sharing.*

Kim Duncan *You're welcome. Thank you for asking.*