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PROGRAM NAME: WOMANITY - WOMEN IN UNITY

GUEST NAME: DR BERNADETTE SUNJKA – SCHOOL OF MECHANICAL, INDUSTRIAL AND AERONAUTICAL ENGINEERING – UNIVERSITY OF WITWATERSRAND

SPEAKER	TRANSCRIPTION
DR. MALKA	Hello, I'm Dr. Amaleya Goneos-Malka, welcome to 'Womanity– Women in Unity'. The show that celebrates women's milestone achievements in their struggle for liberation, self-emancipation, human rights, democracy and much more.
DR. MALKA	Joining us today is Dr. Bernadette Sunjka who is with the School of Mechanical, Industrial and Aeronautical Engineering at the University of the Witwatersrand where she heads up the Industrial Engineering stream. This is our last show in a series on Women in Engineering. Welcome to the show Dr Sunjka.
DR SUNJKA	Thank you so much Amaleya, I feel privileged to be here.
DR. MALKA	The School of Mechanical, Industrial and Aeronautical Engineering is structured to supply a solid grounding in fundamental engineering science, with an emphasis on generalised problem-solving skills. Engineering is cited as one of the four STEM subjects that contribute towards innovation and development; please can you tell us about some of the responsibilities that you hold in your position?
DR SUNJKA	Okay, as you've mentioned I head up the industrial engineering stream, which means I am responsible for curriculum development and management within that stream. I am also the postgraduate coordinator so I manage our postgraduate cohort and sort of the admission of postgrads, examinations, all of that. I do have a wonderful postgraduate officer, Tebogo, and I keep on threatening that she is going take things over, but she shies away from that. I am also so on the Graduate Studies Committee at a faculty level, on the Curriculum Committee at the school level, on the Management Committee at a school level, so yes, I think I wear quite a few different hats.
DR. MALKA	You do sound very, very involved. Research is such an important aspect of universities as one of their core outputs; can you tell us about some of your core research focuses?
DR SUNJKA	Okay so I completed my PhD in supply chain risk management between small and medium enterprises and I always seem to have this attraction to the underdog and the SMEs tend to be a little bit of the underdogs in the economy, so I generally do not do research or promote that, students come to me with topics and if I am interested in that topic I say right, let's go and explore this and sort of develop it into a research project and I find that the students have their fingers on the pulse of things. Most of our postgraduate students are in industry, so when students come, they will come with something that industry is grappling with and then we will say okay how can we formulate this and let's look at it from a research perspective. So I have had students from the banks and they are engineers working in banking and we have looked at digitization and

	<p>the Fintech in that, or else I have had some of my fourth years' who or one of my fourth years last year that I was really impressed with, he and his brother run their own chicken farm out in Mpumalanga, so we looked at how we could apply industrial engineering tools and techniques to improving his chicken farm and how it was working and he spoke to all the chicken farmers in that area, what are the problems they experiencing. So it is just so exciting and also with energy, the energy crises around the world, I have got a PhD where we are looking at the hydrogen supply chain, so it is looking at industrial engineering applied in numerous different contexts. So that is what interests me, I tend to have an attention deficit, whereas I need lots to sort of keep me stimulated and interested.</p>
DR. MALKA	<p>It sounds like a fascinating field and one which has got a really meaningful impact on day-to-day activities, particularly on the SME sector, which is such a vital part of our economy.</p>
DR SUNJKA	<p>Yes, well strangely enough I have just had a meeting prior to this with a potential PhD student and I am going to supervise her, she is looking at contract SMEs that get brought into big fast moving consumer goods companies, when the consumer goods companies do not have the capacity for production, so they contract SMEs to do some of the work for them and we are going to then be looking at developing a framework to assist these SMEs in being sustainable in these kind of roles. So yes, the SMEs are fascinating and when I did my interviews for my PhD, it was just wonderful seeing how these SME owner/managers managed their company, how they treat their staff, they know everything about their staff and their staff have been there for decades. So I think I interviewed with them after the 2014 strikes in the steel industry and just how they managed and how loyal their staff are to them and, you know, and how they're like the daddies or the mummies there that take care of their staff. So I just thoroughly enjoy talking to them, we'd sit for hours talking and they'd offer me lunch and I dragged some of my students along with me, so they did some projects as well with that, so my fourth year students.</p>
DR. MALKA	<p>And just as a side bar, I mean this is really talking about entrepreneurship and the dynamics of having your own business and that independence; what would you say are some of the benefits of being an entrepreneur that you observed from the people that participated in your research?</p>
DR MALKA	<p>Well I think it is that you've got the freedom to apply your knowledge and also you're learning all the time and you also are able to apply ideas that maybe you've got and if you're working in a bigger company you might not be able to do that. Strangely enough one of my master students, he is under examination now, he looked at young tech entrepreneurs and he interviewed 10 of them and it is just fascinating how these young people, some of them without even qualifications, just a matric, are passionate about certain things and you can now, you know, sort of explore your passion and take it to potential customers and your ideas about technology and how it should be applied and used within the economy, you know. So I don't know, I am just always so amazed at young people of today, the young people of this country, that is why I have so much hope for this country because I see these young people</p>

	doing these things.
DR MALKA	And in doing these things, we know that we have a major challenge on unemployment, that figure just keeps getting higher and higher.
DR SUNJKA	Yes, yes.
DR. MALKA	What do you think we could do to stimulate people to take on more entrepreneurial positions or not positions but go and start businesses themselves?
DR SUNJKA	Well out of this research is the key thing is finance and I think that, you know, when we look at anything, any research or any sort of interviews done with people that are trying to get businesses off the ground, especially small businesses, it is financing and it is maybe looking at, I know the training, I know the Wits Business School does a lot of entrepreneurship training, we actually have an entrepreneurship course for our fourth year industrial engineers and they come up with new products and look at ways of marketing them and it is really just giving ... there is a certain amount of freedom that a person who is going to be an entrepreneur and it is a type of person, we are not all entrepreneurs and perhaps that is also realizing that maybe you need to identify people with that entrepreneurial spirit and that entrepreneurial mindset and maybe people that are not entrepreneurs need to partner with these people, where they do perhaps the more sort of, they might be better at the admin side or that kind of thing, but it is sort of creating like these clusters of support around entrepreneurial people and people with those kind of mindsets, because it is a very unique mindset, I have discovered.
DR. MALKA	I think those are great points, thanks for sharing some of your views. When I look at your profile as well as that of many of our guests, education has been a prerequisite to help them advance. Can you share some of your perspectives on the role of education?
DR SUNJKA	It is vitally important and I think my dad sort of ensured that we were orientated towards always pursuing education. He came from quite a poor immigrant background and worked on the mines, but he got his bachelors in engineering and all of us kids he certainly ensured and encouraged us to get an education, but I think an education is, you know, I have read it is an equalizer to a certain extent and it opens doors for you. It opens your mindset, it opens the way in which you see the world, it shows you different perspectives and it gives you confidence that you can go out and be, you know, you can literally choose where you want to go actually with education and if you are continually educating yourself, you have a dynamicism in your career and, you know, I have worked in banking, I have worked at Eskom for a very short period of time, I have worked in education and it is just a matter of ensuring there's a certain dynamicism to your career through what you've been educated with and through your pursuit of education, even if it is a postgraduate diploma or a certain certificate in something, but that continuing striving for more knowledge that underpins your skills, your development of your skills and it gives you self-confidence and that is the most amazing thing about education. You can have conversations with a lot of different people about a lot of different subjects.
DR. MALKA	I love the attributes that you've brought out and things that perhaps we don't really think about from an education point of view, like we may think about

	<p>knowledge gain, but this idea of being able to steer your career path and your life trajectory, to converse with literally anyone, to have the dynamism of not being boxed in and the ability to make choices, because if you don't have education, you don't have a choice often.</p>
DR SUNJKA	You are fairly limited in what you are able to do and pursue.
DR. MALKA	In the introduction I spoke about STEM subjects and the impact of them on innovation and on development. Engineering has traditionally been regarded as a male dominant field; as a woman in engineering who is now effectively developing this pipeline of future engineers, what do you think needs to be done to encourage girls and women to participate in STEM subjects?
DR SUNJKA	I think it begins at a primary school level even and it's about exposure, number one, saying look, women are doing these things. Right from a young age I certainly know that because my dad was an engineer and I had three younger brothers, you know, they were always fiddling around with engineering type things, I wasn't allowed to because I was a girl, there as quite a traditional view of what the women did, go and help your mother in the kitchen, but it is exposing young people and children are so impressionable, young children even in grade nought, grade one or grade two, you know, those younger grades and if you see somebody doing something, oh, my mom she is always in the kitchen washing the dishes, but oh, look at that person, oh that woman she is sitting in front of a computer and she is making that little drone fly, you know, and that makes an impression and especially when you are young and it is really about exposing children literally to these things and then as they grow, giving them the opportunity to explore these things, you know, use simple labs, you don't have to have anything very sophisticated, where they can play with three dimensional things. I know I used to teach at Mangosuthu Technicon, it was the Technicon, so Mangosuthu University of Technology, which is in the Umlazi township south of Durban and a lot of the students coming in, it was difficult to perceive three dimensions and how that worked and it is about exposure, play with this block, perhaps look at how you can build, just give some blocks and pieces of wood and make something out of it and tactile type of experiences with engineering things. I know I used to hide in the cupboard as a child and play with a Meccano set because it was only for the boys, but it is just having that tactile and being able to explore and play; play is so important and you gain confidence through play. Oh, look what I made, you know, those kind of things and then reinforcing that children grow older and giving them opportunities with simple laboratory work or simple project work. The other thing is changing mindsets, families, moms and dads, that oh my daughter or my son. Yes, my son can go into engineering, but my daughter no, she can't get her hands dirty and she's going to get hurt if she goes into engineering and I had to change my dad's mindset around it.
DR. MALKA	What did you do, how did you do that?
DR SUNJKA	I basically just, I don't know, maybe I am a bit hard-headed but I did start out and I was going to do a BSC majoring in maths and science and I was going to probably be a teacher, but after first year I found I was bored with the lack of variety and I read James A Michener's Space and I wanted to become sort of a space engineer. So I just went and spoke to

	<p>the people and I transferred without even really talking to my dad because it was so important to me, okay my dad didn't speak to me for three months, but he came over when he saw I could do it, I was coping with it and it was actually quite nice having a daughter in the same profession or with the same degree, I went to the same university he went to, you know, that kind of thing. So sometimes you just need to sort of go ahead and do what you want to do even if you're going to face some backlash from family or the community or that kind of thing.</p>
DR. MALKA	<p>What you're saying I find really interesting because first of all you were talking about how young people are impressionable, so you had probably had this impression of your father being an engineer and looking what he is doing and liking what he is doing and yet then you have the gender stereotype dynamic where he is going no, this isn't for girls.</p>
DR SUNJKA	<p>Yes, exactly, and you know sometimes it is just, you know, I never really fought with my dad, it was standing up to him and even as women in engineering standing up to male counterparts, because they tend to be more dominant in the way that they speak, women perhaps have a different way of communicating and yes, so breaking the gender stereotype, yes it's like bursting out in a bubble. You're sitting inside a bubble and you've got to actually prick that bubble and you've got to sort of dissipate the bubble and break free of those perceptions and they are other people's perceptions, they are not necessarily your perceptions. So it is believing in yourself, I can do this, I was always like okay so other people passed matric, so I can pass matric. Other people have done this, so I can do it, you know and why can't I do it if I want to do it and it is really just perhaps just having a little bit of the courage of okay, let me go, I am going to do this now and believing that what you're doing is the right thing for you.</p>
DR. MALKA	<p>So confidence, self-belief, courage have been some of the factors that you use to help overcome gender stereotypes or boundaries.</p>
DR SUNJKA	<p>And it is not that I was even a very confident person or an assertive person. I simply just believed, there was something in me, it was sort of something that in sort of retrospect there was an innate belief that this what I needed to do and this was the right thing for me and every time I sort of ventured out and I went into banking, no, I came back to engineering. I went into this, but I came back to engineering, you know, and it is maybe testing it to see if it really is what you want to do by doing something else and go, okay, I'm being reeled back in, you know, the universe is telling me something.</p>
DR. MALKA	<p>Yes, finding your purpose, which is -</p>
DR SUNJKA	<p>Yes and the thing is to go and explore, you've got access to your smart phone, go and do research, go and see what other people are doing. It was always this curiosity, as my mom use to say to me, Bernadette you always need to know and understand, so you know, go and explore, don't be held back by people's opinions of where you are supposed to be because you're a woman or whatever.</p>
DR. MALKA	<p>Often younger people, purely because of their age and their experiences, they haven't been exposed to a multitude of things and opportunities. For younger women who are contemplating a career in engineering, what are some of the, let's say the career streams that they could go into, if you could share a few?</p>

DR SUNJKA	<p>Okay so I am quite involved at ECSA, the Engineering Council of South Africa and there are three really sort of streams of being an engineer, a technologist or a technician and you can become a professional engineering engineer, a professional technologist and a professional technician and your qualification is globally recognized in countries that are signatory to what we call The Washington Accord which is for engineers, we have I think the Sydney Accord for technologists and the Dublin Accord for technicians, which means in countries that are signatories to those accords, you can go and work. So it is very good, you know, if your marks are not great and you can't get entry into the engineering, like the bachelor of science or the bachelor of engineering, go and consider doing a bachelor of engineering technology at a university of technology, it doesn't mean you're excluded from being an engineer if you can't make the engineering qualification or get into the university, go and do something, or else go and become a technician, which is also at the universities of technologies, but also vocational training. We are so lacking in artisans in this country, people that are tool makers, people that can do things with their hands and they support the engineers and go and do that, go to a technical college and get a qualification, that is an N6 or something like that, you know, and also within engineering is obviously the Built Environment that surrounds that, so there is architecture, there's construction economics, go and do that or else, you know, do something on the computer side. AI is such a big thing, you know, Artificial Intelligence, machine learning, go and do something in the computer side of things, computer science, because you are going to be supporting engineers in doing the work. So you don't have to be the engineer, you can be in one of the support roles that sort of like the rings of Saturn, you can be one of the rings that surrounds Saturn and support it, you know, those kind of things.</p>
DR. MALKA	There sounds like there are abundant opportunities that are very, very diverse.
DR SUNJKA	They are, yes, absolutely, absolutely.
DR. MALKA	You've shared some of your passion for the subject as well as a few of the obstacles, hindsight is 20/20 vision; if you had an opportunity to redo anything, is there anything that you would change in your career?
DR SUNJKA	<p>No, because whatever has happened has brought me to where I am and I think sometimes you need to go through a winding road in your career, because it either solidifies that you're doing the right thing and you're pursuing the right thing or else it puts you on the right tangent to that and I always say to my students that come in fourth year, towards the end of fourth year, Ma'am, I don't know which job to accept, you know, should I be doing this, because our students do get multiple offers of jobs and they're kind of confused about what job they should take and I just say to them whatever job sparks your interest at the moment, don't worry about your career, it is going to take the first 10 years of your life to find actually what you want to do, the first 10 years of your professional life and if you have two years here and you don't like it, go and find something else that is going to spark your interest and keep you progressing in that area. So this whole thing about oh I've got to now plan my career, I am not a supporter of that, because mine has been windy and I have come to a place and doing things that when somebody</p>

	asks me what do you do to relax and I go please don't ask me that question because I feel that my job is my vocation, it's not a job it's a vocation. So I am here to support and develop the young people that come through my classes.
DR. MALKA	What a good place to be.
DR SUNJKA	Yes.
DR. MALKA	Looking towards the future for women, what do you think we need to do to help build a more egalitarian society where there are no limits imposed on women?
DR SUNJKA	Well I feel, as I have said before, it's about perceptions. World views that are held by people, you know, a lot of parents perhaps haven't been exposed to what careers their children could have and it is really about breaking down those kind of barriers that, you know, the glass ceiling or the sort of perceptions that certain people, oh this person can only do this and they're only allowed there and women should be in the kitchen baking and they can't be on oil rigs somewhere, you know, and some women want to do that, I don't, but some women would like to do that and be out there and the thing is, it is just women who know this is what they want to do and women who are educated and have the skills in those areas must just go and do it. It's going to be the trailblazers, the women who simply go out and burst through those bubbles of prejudice or perception and that type of thing. In terms of sort of helping, I think it's a question that we're grappling with in many different places, I am currently doing some research for the Engineering Council of South Africa and how can we support women more through the Engineering Council of South Africa and, you know, if you look at the figures in our faculty, there's twice as many men as there are women, but over the 15 years I've been in the faculty I've seen that changing. My fourth year industrial engineering class there are more women than men and beautiful, intelligent young women who are brighter in a lot of instances than the men, you know, and also my PhDs are only women and black women and it's about helping people who want to go into certain things like lecturing and that type of thing, to break those barriers, go and apply for the jobs, because I know when I first graduated I went for job interviews at two prominent engineering companies, the one the men treated me like an object, they just said you've got such lovely blue eyes, it's like interview me, you know I am a graduate. So I didn't really want to work for them and I went to another company where I walked into the entry and they said why did they send me you, as a woman, and I just gritted my teeth and sat down and he interviewed and I got offered the job and then I said no, I don't want to work for a company that had those kind of stereotypes. So, you know, don't let those things, they are not about you, they're about the perceptions of other people and if I wanted to work at the second company I probably would have gone okay fine, I will work, but I will just set what my boundaries are, if you are going to come with that kind of attitude towards me, I am a human being I deserve respect, it doesn't matter that I am a woman or a man. So treat with respect and often the way in which you project yourself is the way people treat you and I've learned that, that's been one of the things I have learned perhaps the hard way, through this, because I have had a,

	not that anybody believes me, but I am shy and that kind of thing, but you know, it's basically saying I am worth standing up for. Me, I am worth standing up for myself and you know, don't let other people try and tell you what you are and what you can and can't do, it's only you that knows.
DR. MALKA	That is such a powerful lesson, thanks for sharing, particularly this aspect of other people's prejudices over another individual, that it's got nothing to do with you as the individual, it's helping them overcome their prejudices against you.
DR SUNJKA	And like I did with my dad, you go and show them that you can. It doesn't matter, man, woman, whatever; you show them that you can.
DR. MALKA	Taking that action. A question that I ask all my guests on this show who've made tremendous achievements in their respective fields, is about some of the factors that they feel have contributed to their success. Sometimes people talk about discipline, hard work, values, faith. What have been some of the key drivers for you?
DR. SUNJKA	I think for me it has been really, you know, so I have faith and discipline, yes, it is how do you manage your time and all of that type of thing so you can get things done, but for me it is saying I want to see if I can do this. Can I do this? It's something I want to do, am I able to do it and then you try and then you see yes I can do it and then maybe I can't, am I really interested in doing this and my sort of mantra has always been will I regret this if I don't do it or if I do do it and that is why I wouldn't change anything in terms of my life and what my career has done, because I have always asked will I regret this if I do do it or if I don't do it. So and then it's kind of just visualizing if you do do it, what could be the consequences, if I don't do it, how am I going to feel.
DR. MALKA	Reflecting for a moment on your past as you were growing up, tell us about some of the pivotal moments in your life.
DR. SUNJKA	I think the first one was standing up to my dad; that I could and that he saw that I could and I think in the end he invited me to do, he was also in education and he invited me to do some of the postgraduate lectures and I don't know, I have got multiple sclerosis and I was diagnosed when, well I started with it when I was 23 and I was diagnosed perhaps when I was 28 and just recently, 2021, I had a relapse and now I have difficulty walking, so I have a disability and somebody said to me and has been pivotal, is you don't define yourself by your disability or your illness and it is the same thing as don't define yourself by what people say to you, and I think that has been also a key sort of mantra. It's like I am disabled now, so I have declared the disability, I have told people what I need, sometimes they've given it to me, sometimes they haven't, but I am still doing my job and I've still got students coming to me and I'm still teaching, I am still doing everything, but under perhaps slightly different circumstances and thank goodness for the pandemic, one of the good things, is that we can do a lot of things online. So it's always about I think that, with the illness and realizing that I can stand up to people and also I think realizing when I need help and what type of help I need and finding the right people to help me. So if you've got a problem with standing up to men, go and find a psychologist that can help you or else a career counselor that can help you, go and find the people that can help

	you and yes, so perhaps not pivotal, but perhaps realizations that have evolved as things that have made a difference in my life.
DR. MALKA	Definitely important factors and I see this in the same way as we were talking earlier of entrepreneurs not having access to finance, it's all about finding the right resources that you need in order to fulfill your purpose or your next step and believing in yourself, I think that for me has also been one of my key takeouts out of today's chat. As we close out the conversation, please use this platform to share a few words of inspiration or motivation with girls and women who are listening to us on the continent.
DR SUNJKA	Education. If you have access to education it is the most valuable resource you have and it is to make the most of what you have access to, because the minute you start on that journey of education, it's a journey that will take you forward throughout your life. So for me even if you're sitting somewhere out in the veldt and you've got somebody teaching to you on a board that is standing on an easel, take that opportunity, because you're going to always learn something and use every opportunity and every experience as a way of learning, whether it is more about yourself or more about your environment.
DR. MALKA	Great lessons, I have certainly learned to look at things differently through our conversation today, I really appreciate your time and thank you for joining us.
DR SUNJKA	No, it has been a pleasure Amaleya and yes, I wish everybody who is listening to this lots and lots of good wishes for your career and for what you're going to do in your life, because you will, you are on this earth for a purpose, find that purpose.
DR. MALKA	I echo your sentiment; find your purpose.
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