



**Leading Women podcast  
Commonwealth Bank Women in Focus**

**Episode 3: Professor Lisa Harvey-Smith**

**Hosted by: Shivani Gopal  
Interviewee: Professor Lisa Harvey-Smith**

**Featuring: Julianne Price, Executive Manager Women in Focus**

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Professor Lisa Harvey-Smith, Astrophysicist & Australian Government Women in STEM Ambassador at UNSW on propelling the pathways for young women in STEM, how influential family and community are when it comes to engaging children in a more gender-balanced way.

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**Julianne** [00:00:02] Welcome to Leading Women, your place to share and celebrate real stories and access the tools and resources to help activate your leadership. Hi, I'm Julianne Price, Executive Manager of CommBank's Women in Focus and Leading Women is just one of the ways we support women at all stages of their business journey. So no matter where you are on your journey, we're here. Enjoy this episode as we redefine the business landscape together.

**Shivani** [00:00:34] Welcome to Leading Women, where we support your leadership journey. I'm your host, Shivani Gopal, and today's episode is where art and science collide with an ambitious woman whose purpose is to propel the pathways for young women in STEM. Professor Lisa Harvey-Smith is an astrophysicist, author and Australian Government Women in STEM Ambassador, who shares navigating leadership and life while driving systemic change, transforming her ambitious ideas into a bright future reality. Always taking the path less trodden, Lisa's intrepid journey begins from long walks in nature as a child to now paving the way for young people to engage their imagination. Lisa shares how influential family and community are when it comes to engaging children in a more gender-balanced way to give every child an equal chance to express themselves and open their possibilities. Lisa, welcome to Leading Women, it is so great to have you. Tell me, where are you joining us from today?

**Lisa** [00:01:48] Thanks so much, Shivani, it's great to be talking to you today. I'm joining from beautiful Muwinina in nipaluna/Hobart.

**Shivani** [00:01:55] Oh, goodness, that does sound beautiful and I am in studio here on Gadigal land. Lisa, your leadership journey has had many paths that all led to advocating for women's participation in STEM. Can you share with us how your journey has unfolded to here?

**Lisa** [00:02:15] Wow, it's a long journey. I guess it's one from being a kid, I grew up in kind of a rural area in the UK, a small village called Wethersfield, just north of London. And I had a simple life actually, a lot of time spent in nature. My dad and I would go on really long bike rides; really long walks, and it would all be amongst the fields of crops, barley and canola and watching the seasons change, watching the rivers flood in autumn and winter, and watching the leaves on the trees change. And it was all about just observing that nature and asking questions and that's what science is really. You know, it's what people have been doing for tens of thousands of years observing what happens in the world and trying to figure out why, asking those questions. We didn't have the Internet. I mean, there was no Internet back then. So we kind of asked those questions. We went home and we looked in the encyclopedia and tried to find the answers to our questions. You know, looking forward a few years, I wanted to become a scientist. I was enthralled by nature. I was enthralled by the earth and the natural world, and especially astronomy, the stars, because those are things my dad and I would look at. And yes, I became a scientist. So I went to uni and did physics and astronomy and astrophysics and I became a researcher. Nobody in my family or my circle had gone to university before. It wasn't very common in those days, so it was really a path that was, I guess, unusual. And I just did it from the love of it, really. I didn't really have a long-term game plan, but I kind of fell into communicating science and the impact that science has on the world, but also the kind of social elements of science. And through my research, I

went through a leadership journey, of you know, stepping up through the ranks, starting to mentor students myself, you know, starting to work on large international projects, building telescopes, developing things like the Square Kilometre Array, the world's most powerful radio telescope, kind of a huge collaboration of tens of countries from around the world to build this \$1 billion instrument that will look into the deepest, darkest regions of our universe that we've never seen before. But in doing so, you know, looking at those societal elements and how does this impact on the traditional owners of the land where the telescope is sited? And, you know, how are different demographics in our society either included or excluded in science, all that became interesting to me too.

**Shivani** [00:04:56] Isn't it interesting how you took the path less trodden by going on all of those long walks and your early childhood journey then informed your adulthood journey into the career that you now have. Lisa, we hear more and more about young women's participation in STEM, which feels like positive progress. But could you please set for us the scene that has some cold, hard facts and maybe some surprising elements?

**Lisa** [00:05:26] Yes, well, STEM is often talked about science, technology, engineering and maths because we like to bring together all these subjects to explain how evidence and the use of empirical evidence can drive change in our society. That said, when we break down women's participation in STEM, it's very different between the S, the T, the E and the M, Australia's women are the most educated women in the world. And in fact women make up more than 50% of the science graduates in Australia. So you look at those stats, you say no problem; women are going into the STEM pipeline, wonderful. But when you look at vocational pathways, when you look at trades, when you look at engineering and I.T. and technology, women are vastly underrepresented. We're like 9% of vocational entries into STEM careers. Women are like 16% of the STEM qualified workforce in Australia. So you can either paint a good picture with the steps or a really, really bad picture and that's where because we have this kind of gender segregation in our society. We tell girls these are boys' things and these girls' things from a very young age, toys and clothing and then activities. And that translates in our society into this great gender segregation in our workforce. And we know that women's work is less valued by society. The pay and conditions are less. But, even when women are in male-dominated professions, their salaries are lower anyway. So we've got all of these layers upon layers of problems. But the story is getting a little bit better. You know, since I began my role as Australia's Women in STEM Ambassador in 2018, the number of women working in STEM qualified jobs has increased by 34%. So we are going in the right direction. But in those sort of vocational trades areas, we're going far too slowly, there's a lot more work to be done.

**Shivani** [00:07:24] It's so interesting because we do need to be real about the extra work that needs to be done. Otherwise, we end up celebrating the wins and focusing on that rather than doing the continued need for real work. And speaking of real work, one of the many things that you advocate for and raise awareness for is the real need for jobs, because we're filling the funnel around the STEM, but we're not actually creating enough roles for women to graduate into.

**Lisa** [00:07:51] That's right, I think one of the problems, you know, a lot of parents say to me, it's great to advocate for STEM and for kids to be interested in STEM. But their impression from school is that there's science and there's biology, chemistry, maths, there's physics, and that's it. So they go into these kinds of channels and they might study biology in university. Most young women do study biology or the biological medical sciences at university, and then they graduate and parents say, well, my daughter's got a degree, a first class degree in biology and can't get a job. What are you going to do about it? Well, because we frame it wrong, there aren't loads of jobs as a biologist. There are jobs with STEM skills or jobs in look at cyber security, look at the cyber risks nowadays. You know, people need technology, IT skills mixed up together. They don't need this kind of precise funneling into these little silos. We need to broaden the conversation around STEM skills to explain the real situation to young people. Otherwise, they're going to keep doing biology degrees or chemistry degrees and finding there's no jobs for them. And the answer isn't creating more biology and chemistry jobs, necessarily, it's explaining, well, this is the skill set that the world needs, let's teach that in schools. Let's make the curriculum reflect that and let's have our conversations reflect that, too.

**Shivani** [00:09:13] Yes, really practical advice about reframing that and it sounds like there's a real industry need there to reframe job descriptions as well so that it does seem more inclusive for a skill match versus the actual roles that are out there. You spoke a little bit about conversations, and I know that in your role you

actually have the great privilege of having many conversations with young girls. What advice do you often see yourself imparting?

**Lisa** [00:09:39] Well, you know what I try with young people, I don't think they want advice. I think they want inspiration in many ways. And you got to try and match that as I just said with the reality of the situation. All any of us can do really is to talk about our own experiences. And when I tell my stories about falling in love with the night sky as a youngster and reading all the books that I could find and pursuing something that I was interested in, but also looking realistically at what the world needs in terms of those skill sets and trying to get the experiences, the work experiences along the way that help you in addition to your qualifications, I think that's probably the way that you can sneak some advice in for young people, kind of like sneaking broccoli into an omelette or something for kids. You know, kids don't want to be told what the path is for them, but they want to know how they can get the best chance to succeed. And I think it's really around, yes, not just doing school and exams and all those basic things that everyone's expected to have. But, you know, how do you muscle your way into get some work experience, some real industry experience so that you can really understand what a job is and what it means to have a career?

**Shivani** [00:10:53] As a young mother myself that is some leadership lessons and motherhood lessons I'm going to take on myself to sneak in inspiration like advice just as much as I do broccoli. I love that and very practical. And of course, when it comes to inspiration, one of the ways to do that is through the powerful art of storytelling. Lisa, how do you see the role of storytelling in shifting our societal biases, and how are you embedding this in your initiative, Future You?

**Lisa** [00:11:23] Future You is a national awareness raising initiative for young people to help them to understand. And this is for primary aged kids, a bit younger than a lot of people focus on, to help them understand what I was articulating earlier really about the pathways where STEM skills can help you in careers that might not even exist yet. But these kids are 10, 11 years old, in ten, 20 years time, when they're looking for jobs and when they're developing their careers, maybe hovercraft mechanic will become a really common job. Maybe there will be technologies that aren't invented yet. So it's really storytelling around career journeys, showing role models from diverse backgrounds, really showing that STEM is for everyone, and that's what Future You is all about. We have films. We have people telling their own stories. First Nations women highlighting why their culture brings a unique perspective into the work that they do with technology, for example. Highlighting different career paths for maybe less academic young people, who might not want to sit at a desk or, you know, study books or things like that. But they want to get dirty, get their hands dirty and become a heavy vehicle mechanic. Like one of our role models, Louise Azzopardi who fixes big trucks, you know, it's showing that huge range of career pathways that are possible. But we also kind of try and engage in digital storytelling as well. So we've engaged some fantastic authors for young adults and they've set these beautiful stories up, five short stories whereby they've set a scene in the future where families are going out to live on the largest moon of Jupiter, Callisto, and they come across all these STEM challenges. And some of them use, you know, First Nations style knowledge to solve these challenges or technical knowledge or creativity. So we're trying to encompass kids, not just the ones who are STEM-focused or particularly academic, but also those who enjoy other types of pursuits, practical or creative. So in that way, I think storytelling brings in all students and all young people and that is so, so powerful because we know, you know, brute force. You can't make kids like an equation. It's just not going to happen. So rather than pitching it at that level, it's really telling stories. It's allowing the young person to imagine their own future and that's what we try to do with Future You.

**Shivani** [00:13:57] It is indeed very Future You because of course the roles that exist today when you and I were growing up simply didn't exist back then. We wouldn't have ever thought of them or been able to prepare ourselves for them. And I think the power of imagination, the power of storytelling, the power of inspiration really ignites the path for all of those things, which, of course, you are also just as involved in because I understand, in addition to hiring incredible authors, you are also midway through writing a kid's book yourself about a little girl. Tell me more about that.

**Lisa** [00:14:30] Yes, look, I've written five books already published a couple for adults, but more of a series for young people now really focusing on storytelling around how young people can stumble through their imagination, through a little bit of both, pluck into situations where they might end up flying to the moon, for example. And these stories really try and engage young kids, six to eight years old, eight to 12 years old. So

those both primary kids who can get excited and imagine sort of magical scenarios where an interest in science and technology can just get them somewhere super excited, whether they're surfing gravitational waves in space or flying to the moon. You know, who wouldn't want an adventure like that? So bringing stories in with diverse protagonists, showing culture diversity, showing gender diversity, showing people with disability succeeding, and talking about First Nations knowledge and science as the foundation of wisdom, really, for a situation where, you know, we're destroying the only planet that is known in the universe to be habitable to human beings. And in passing that knowledge as well to young people, how do we look after our beautiful planet? How fragile is our solar system? The bringing in all those sort of areas of adventure and attention really about what we've done to our world. So I hope young people can engage with all of that and get excited. Check out my books.

**Shivani** [00:16:05] We all can't be authors and great articulators of the inspiration and tension. But as professional women, as mothers, aunts, sisters and grandmothers, how do we participate in telling these stories differently for the young women and girls that we have the ability to influence?

**Lisa** [00:16:23] Oh, wow, I mean, those family members are just so influential. Going back to research, right, there's a research study and several of these that show that parents talk to their boys about numbers and counting when they're toddlers three times more often than they talk to girls about numbers and counting. So often they'll say to boys, how many cars can you see? One, two, three, four. And they talk to girls, how many flowers? Like what colour are the flowers. Look at those pretty flowers, it's pink, it's yellow. They just don't speak in the same way and engage with it in the same way with their girl children as they do with the boys. And there are similar studies when families visit museums. They talk very much more to the boys about the technical aspects of the knowledge that's being presented in the museum than they do girls. So we don't want to be doing this. It's just kind of programmed in us. We unconsciously talk to girls and boys very differently. We talk about pretty dresses or hair or what they might be wearing or how well they're behaving. Boys get praised for different things. So this is something as parents, you can be very kind of aware and open your eyes about how you might be talking to your children. It's not a blame game. It's not that someone's being a bad parent, but it's just stuff that we do as humans. We take shortcuts. And the more aware we are about these things that we do, the more we can try and rectify them and give every child an equal chance to express themselves in a way that they want to, in a way that might set them up for a great future.

**Shivani** [00:18:01] And also setting up unaware parents for a better future, because, of course, no parent wants to intentionally set their daughters up to not have a fully encompassed career and involve anything and everything, including STEM. But as you've said, there are so many biases out there and it's just like that book, you know, thinking fast and slow. For example, you are encouraging parents through awareness and through knowledge to say, hey, just as much as you're counting the cars, you can count the cars for the girls as well or count the flowers. And then talk about the very many textures across that and the different scientific elements that may bring that beauty about that is such important work. And it also goes to the whole micro and macro of things, as you, you know, so creatively articulated. We also need to highlight the facts for systemic change that needs to happen and that needs to happen from families as well as at grassroots level of inspiring children. And in that same kind of way, you're also doing that same work from trying to challenge the top down and using storytelling to shift the hearts and minds from the grassroots up. You're doing a lot of double tasking there. It's quite the job. So we're keen to know in having such a big job and an ambitious purpose and so many roles, Lisa, how do you manage your leadership and life?

**Lisa** [00:19:28] It's a difficult question, I think. I mean, my leadership journey has taken me through obviously, you know, management roles, roles that leading groups of 30 staff and trying to drive forward change in organisations. You know, when I was just in the pure research and science phase of my career, I was always kind of striving to get the next rung up the ladder. You know, I was a team leader, I wanted to be a group leader and then I wanted to be the leader of the division then. And, you know what, it's such narrow thinking. And I think that striving within one organisation, it didn't bring me joy. It didn't allow me to grow as a person, as a professional, and it didn't give me the opportunity to see what else was out there in the world that really taught me that every time I moved countries or moved organisations, I learnt something. I stayed too long in one organisation so I think that really was a lesson for me too, to get out, to keep moving. And when this role was presented to me as an option, the role as Australia's Women in STEM Ambassador, I was tentative. I didn't want to give up my permanent career job as a scientist, a government scientist at the CSIRO. But I knew I needed to take the leap to do something that was engaging with the real world, that was

meaningful, that would have a lasting impact. Because I felt, you know, I'd been working in science at the time, maybe about 12, 15 years. And, you know, your ability to create meaningful impact, I think, wanes in the same role. So you do have to keep moving and keep developing. And I felt that was time for me.

**Shivani** [00:21:09] It's such a moment of clarity, isn't it, Lisa because when we're often striving, we get caught in this hustle culture and we all buy into it. You know, you've got to work hard, you've got to keep moving, you've got to keep pushing. And we do that without the ability to step back and go, hang on a second. Am I actually achieving something here? Is this actually serving my purpose or do I need to take a step back and loop back around another way? If anything, it brings me back to your early childhood stories about, you know, just taking a moment within nature and reflecting and seeing what's right for you. And in your case, it was a big change. In your case, it was becoming a STEM ambassador and you brought so much good through that. Now, given that is such an easy trap for so many of us to fall into, in fact, I would imagine so many of our listeners are probably listening and nodding along and going, maybe I am stuck in strive culture. How do you take a step back and make your own leap? What's your advice there?

**Lisa** [00:22:11] I think I did an exercise from a really good leadership course that I did, but I'm sure you can do it without the leadership course as well. It was really matching your vision, what matters to you personally as a human in your core. And I think in particular, women I've noticed in my career, when women do have children and do have caring responsibilities, sometimes their priorities can shift. So I think we need to keep in touch with our core purpose and our vision for our lives and what matters because many of us believe we do have this one life. And we've really got to keep striving, keep striving to understand ourselves, to look inwards, to match that purpose, to realign that purpose with what we're achieving in our professional lives because, after all, most of our life is our professional life. We spend so long focusing on it. So yes, do an exercise that maps out your purpose, what you can achieve in your current role. And then I really did on a sheet of A4 map out the next ten years of my life, not the precise roles that I wanted to do, but the types of roles that I was interested in. And that really helped me then move through my career and set my direction and purpose.

**Shivani** [00:23:27] I just want to pull that into a goosebump moment that I had with your quote. And it was along the lines that of matching your vision to your core, there's so much macro and micro to that that really brought me home. Thank you for sharing that. Lisa at Leading Women, we are committed to activating women's leadership, what tool has ignited your leadership that you can share with us for the Leadership Toolbox.

**Lisa** [00:23:54] For me, I think my, if I could call it my superpower that I've developed is to develop the ability to see the big picture, to actually nut that down to identify what's truly important to you, to the organisation at that moment, and sort of cutting out the dead wood. There's so much noise, there's so much and we talked about striving before, there's a lot of busyness in our corporate culture. But if you can cut out the dead wood to understand the core of an issue and you can focus on that, then you can effectively articulate a vision for your organisation or for your action. You can create a strategic direction and you can take people along with you if you can articulate that. So I think it's focus. It's focusing on what's important and that works in your professional life and in your personal life, I think.

**Shivani** [00:24:47] Cut out the dead wood by blocking out all the busyness and just focusing on what's really important, incredible advice, Professor Lisa Harvey-Smith, thank you so much for joining us today on Leading Women.

**Lisa** [00:25:03] It's been great, Shivani, thanks ever so much for talking with me.

**Julienne** [00:25:07] Thanks for listening to Leading Women, where we can all activate and redefine the business landscape. So now it's over to you, access the links, tips and tools discussed in this episode at [womeninfoocus.com.au](http://womeninfoocus.com.au) and subscribe to leading women so you don't miss an episode. Leave a review, spread the word and let's commit to keeping the conversation going at [#leadingwomensaus](https://twitter.com/leadingwomensaus)

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