

## What Makes an Engineering Curriculum Gender Inclusive?

**Host:** Donna Milgram, Executive Director, Institute for Women in Trades, Technology & Science

**Presenter:** Dr. Julie Mills, Head of the School of Natural and Built Environments and Professor of Engineering Education, University of South Australia

### Interview Transcript:

**Donna:** Hello, and welcome to the 10th session of the *STEM Success for Women Telesummit*. My name is Donna Milgram, Executive Director of the Institute for Women in Trades, Technology, and Science. I'm so excited you could join me and our very special guest, speaker Dr. Julie Mills, Professor of Engineering Education, and head of the School of Natural and Built Environments at the University of South Australia. Dr. Mills started out her career working as a structural engineer for 15 years, before becoming a lecturer in civil engineering. She has received teaching awards at both the national and university level, and has co-authored two books, *Gender Inclusive Engineering Education and Knowledge*, *Sex and Power: Gender, Work and Engineering*.

I first met Julie when we were both speaking at the American Society for Engineering Education conference in Vancouver, and I was so excited to go to her talk and hear her talk about her book, *Gender Inclusive Engineering Education*, which I promptly bought, and it has really become my bible. Since then, I've shared the book and the many lessons from it in our WomenTech Educators Training, because they are so powerful. I think my biggest takeaway is that teaching engineering in a way that appeals to female students also appeals to a large segment of male students who are otherwise turned off by traditional engineering curricula. Teaching in a gender inclusive way not only helps improve female enrollment, it also increases female and male retention. Welcome, Julie, and thank you for joining me for the *STEM Success for Women Telesummit*.



*Dr. Julie Mills*

**Dr. Julie Mills (Julie):** Thanks, Donna.

**Donna:** Could you just start out by telling our listeners, what do you mean by a gender inclusive engineering curriculum? Is it just about what you do in the classroom, or is it more than that?

**Julie:** Okay. I might start by explaining what I think gender inclusive engineering education, as a whole, means, and then I'll focus a bit more on the curriculum component. When I talk about gender inclusive engineering education, I mean the whole spectrum of education at college level, all of the components that contribute to developing and implementing a strategy to increase the number of women entering and successfully completing engineering undergraduate education, and then going on to work as professional engineers.

That means gender inclusive engineering education includes high school outreach programs to attract girls to study engineering in the first place, then supporting and mentoring them once they are enrolled in engineering. It includes role modeling from senior female students, from female faculty members, and from female professionals from industry. It certainly includes gender inclusive curriculum, which needs to be embedded throughout the program of study. In order to do that, it also needs to include

professional development and training for faculty members to develop and deliver gender inclusive curriculum, and to know how to support women students. To do all those things, it needs leadership from the management level, and their support for those activities and initiatives, and also from professional and accreditation organizations to support those things, as well.

All of those things are important, but I know that not every individual faculty member listening to this can actually get involved or may be able to influence all of those things, but everyone can do at least some things and have the power to change what you teach and how you teach it to make it more gender inclusive. So that's the gender inclusive curriculum component, and when I talk about that, I mean curriculum in the broadest sense, so everything you teach, the way you teach everything, and the environment in which you teach it. That includes assumptions about the prior experience and interest of the students, the actual syllabus or content of the course or program, the teaching and learning methods you use, and the management of the classroom environment, as well as the ways in which students are assessed.

Because the curriculum provides students with what they need to know and the skills to apply it when they enter the profession, choosing the knowledge and skills to be included is the responsibility of the faculty, as well as whatever guidance they need from the national accreditation body, which, in the U.S., I guess is basically the Accreditation Board for Engineering and Technology, Inc. (ABET). What you select shapes what students perceive to be important and what the students perceive to be the attitudes and practices in the profession. The curriculum is not only the main influence on students' learning experience, it also provides the foundation for their professional lives, and it influences their attitudes to things like creativity, innovation, professional behavior, and it influences their values and perceptions. Therefore, it can influence their perception of the value of women engineers in the workforce.

A gender inclusive curriculum is one that's been consciously designed to recognize and acknowledge that all individuals bring different cultural baggage to their learning experience, and there may be some differences between the baggage brought by males and females because of the gender socialization in their lives before they come to your classroom. That includes things like prior knowledge, their outside interests, the way they approach their learning, their strengths in different types of assessment tasks and so on.

In an applied area like engineering, an inclusive curriculum recognizes that students experience the applications of engineering in their daily lives, and that that experience will vary according to their gender, race, culture, and class. It's also really important to realize that, contrary to what some people think, a gender inclusive curriculum can be introduced without any loss of rigor in the program, and it should also improve the quality of education for all students. Men and women from cultures other than Western scientific traditional culture can also feel alienated and uncomfortable and unrecognized if the system practices the Western tradition. By recognizing the different values, perspectives, and learning styles of all students, including those of the dominant group, an inclusive curriculum can and should be both gender and culturally inclusive. Those concepts aren't mutually exclusive. The principles of gender and culturally inclusive curriculum are similar, and so they apply to curricula which are inclusive of other differences between groups and individuals, such as ethnicity, age, disability, and sexual orientation.

**Donna:** And I'm so glad that you bring this up, because I know that's often the concern, "Okay, are we going to be watering down the curriculum?" But what was so amazing to me in your book, and I wish you could see it with actually all of the sticky notes that I have. It's a well-used book. What is amazing is that there's actually improvements in what the students learn, and you're able to measure that, and

that is part of the book itself. And so that's something that I find so exciting, and there's a materials sciences example that you give, and what's been changed is the process and not the content, and the students end up doing significantly better on materials sciences, and it was very exciting to me.

**So I know that our listeners are going to want to know, what are the key elements they should keep in mind when they're designing a gender inclusive engineering course? What does that look like for them on the ground level?**

**Julie:** Yeah. That's really important, and as you say, what we tried to do in the book was kind of give some really practical ideas on how to do that. The basis of that is that research has demonstrated that the ways in which specific knowledge is taught tend to be tailored to the interest and the perspectives of either the teacher or the dominant social or cultural group of students in a class, or both, and obviously that means that since the majority of engineering faculty members and students are male, that male interests and styles and interaction have tended to dominate in engineering classrooms. And that's the way it'll be, unless we consciously try to change this.

And also, research has shown the language and materials used in engineering classrooms have been shown to teach that, implicitly, engineering is a masculine profession. It's essential that faculty members use inclusive language and avoid stereotypes. So stop referring to engineers in examples and examination questions as he, and only mentioning or depicting women in stereotypical feminine roles or context. If you do that, then it excludes women from believing that they can have an engineering identity. And people sometimes think that's trivial, but it's not in any way trivial.

It's essential that if you want to design a gender inclusive engineering course, you always keep those things in mind, and often those things are unthought. They're just things that are kind of part of who we are, but you need to really be conscious about those all the time, and that'll help you work out what you need to do.

So an inclusive curriculum works by incorporating a range of teaching, learning, and assessment approaches. A faculty member who's committed to designing and implementing a gender inclusive engineering curriculum has to have respect and concern for every student as an individual, and of course, most faculty do, and so this is just stating the obvious, but that's essential. They also need to recognize that students are individuals, and that they're also members of cultural and gender groups, and that those groups may bring different background knowledge to the classroom.

They need to be aware that those differences exist in terms of interests, values, perspectives, prior experiences, ambitions, learning styles, and home circumstances, even, to name a few, and they must have a commitment to acknowledging, recognizing, respecting, and accommodating these differences in all parts of the curriculum, and they need to use those differences in a professional way to enhance the learning experience of all students. Of course they need a commitment to enabling each student to realize his or her full potential, which probably goes without saying, and they also need to be aware of and address their own unconscious bias, is a common term that's used. The attitudes and values that they have themselves, which can impact on student learning environments.

A couple of other things are they really need to be aware of are student to student interactions in the class, and you have to be committed to influencing those if they are negative, if they impact negatively on any aspect of learning. So, in other words, it's not okay to hear sexist jokes or comments in the class

and leave them go, not remark on them. It's not okay to see that particular students are kind of getting excluded from groups or are being always asked to kind of take the notes or whatever, or the males are always dominating conversations and females are not speaking up. You need to notice those, and you need to do something about that.

Of course, it's really important to listen to the student evaluations and comments. Not just the formal kind of evaluations that we all know are done, but there are evaluations of the kind of informal learning environment as well. And so I find that, to get that kind of feedback, it's much for useful to have things like focus groups or more kind of informal evaluation methods to get the feedback you need.

So if you're going to design a gender inclusive curriculum, you have to consider all of the components of the curriculum, and I've put them kind of in order starting from how you're actually going to set up your curriculum. But over and over again I keep emphasizing, you need to consider the assumptions that you've made about the perspective, the experience, the values, and the backgrounds of the students. You need to look at the aims and objectives of the program or the course. You have to look at the kinds of assessment that you use. Of course, you need to look at the content and the way in which you deliver that content or the teaching and learning methods, how you put those into practice. And you need to look at the learning environment, and that can be the physical learning environment, like is the classroom situation that you have appropriate for the kinds of learning you want to take place, but also the social environment within the classroom and, of course, any resources that you need.

Most people want to focus on how to make the content more inclusive, and there's three approaches to that. The probably most obvious one is that any applications or illustrations that you use, examples that you use, et cetera, need to span the range of experiences and interests of people in the classroom. For example, if you teach fluid mechanics, look at the examples. They're always talking about the airflow over an aircraft wing or around Formula One cars, but you could talk about that in terms of the aerodynamics of dolphins as they swim, for example. You don't always need to pick the kind of traditional examples.

The second approach is to provide students with opportunities to investigate the social and humanitarian aspects of engineering, so not just always focusing on the technical. Engineering is about making things better for human being, basically, and for the world. So bring that into your content.

And the third one is probably a bit more controversial, and possibly a bit more confronting and difficult for people to do, but it's to actually talk head on about the issues of gender and culture in engineering and engineering work. Talk about the issues faced by women engineers in the professional workforce, encourage the graduates to consider how gender issues permeate engineering, and from the male point of view, encourage them to think about what they can do to make things better for their female colleagues, rather than just following on with the current situation, and therefore not helping. I'm not saying that needs to be in every course, but certainly somewhere in the program that needs to be done. You may need some support to do that particular session if you're not confident about doing it yourself.

Making any of the components of a curriculum more gender inclusive can help to make a course more gender inclusive, but ideally, you should have all of the curriculum components in that process. And even more so ideally, if the whole program is gender inclusive, you need to look at the overall assumptions, the aims, the objectives, student learning experiences, as well as the individual courses.

So you can improve a program by adding gender inclusive courses to a traditional curriculum, but really, that should just be a step along the way, and ideally, what you'd want to look at is the program as a whole and having every course gender inclusive and an overall gender inclusive program design.

**Donna:** So I love your example of fluid mechanics being as much about the aerodynamics of dolphins as they swim, instead of only using Formula One cars or aircraft wings, and you're describing some of the interests that might appeal more to female, but might also appeal to some males, as well. Your book has much evidence of this, but there's many other projects as well that show the importance of the social and humanitarian aspects of engineering, and what a difference that makes not only with female students, but also with students of color, and also some male students. **You have a lot of beautiful examples in the book, and I'm wondering if you can share some of them to really help our listeners understand on the ground level what that looks like. What is gender inclusive? What's not gender inclusive, on the ground level?**

**Julie:** Sure. Okay. I'm going to start with an example of something that wasn't gender inclusive, because I just thought it was a really good illustration about those unthought biases and the assumptions that are being made, even from people outside of the engineering faculty. All of the examples I'm going to talk about are from my own university, which is obviously because I'm most familiar with those, but this particular one related to marketing for an Open Day, for potential students to come onto campus and find out more about engineering.

Our central marketing team of the university produced these draft fliers that they were going to hand out for this, or probably email out. And somebody in our local marketing team saw it, and thought, "I'd better run that passed Julie," because she wasn't real confident about it herself, and my goodness, it was really bad. So our state has a large defense construction industry, especially ship building, and the flier had a picture of part of a submarine, and it said, "The Collins-class submarine has over a million different parts," and then it said, "Your mission is to put them together." It's something like that. I can't remember the exact words, but I was absolutely horrified. Even though our marketing team's largely female, the inherit assumption was every potential engineering student was going to be interested in defense, and they thought combat based language, saying your mission, would be attractive to them.

Their target audience was clearly male, and clearly a particular sector of male. But anyway, Buckley, their head, sent that to me, so I kind of went off at them, and they did change the fliers completely. I can't even remember what it was changed to exactly, but I know it was something about, "It's your role to make this more sustainable," or something like that. It was a more environmental focus, and it still was very inclusive. That was a good example of what not to do.

**Donna:** I mean, that is a great example, and I'd like to point out that, that was actually not with the engineering faculty, even.

**Julie:** Correct.

**Donna:** It was with your marketing team, many of whom were female. And if you don't mind, before you go on to give some examples of what to do, I have one of my own I would like to interject, which is I had a school team I was working with. In one of the WomenTech training plan elements, the school team will indicate how they're going to make it more appealing to female interests, similar to the

dolphin example you just gave. And so I'm reading through the plan, preparing to give them plan feedback on their recruitment plan, and I saw that they were going to use sumo wrestling.

**Julie:** Oh, God.

**Donna:** And so, and this was a co-ed team, and it was in fact engineering focused. Actually it wasn't recruitment, it was retention. But nonetheless, when we got there I said, "What percentage of sumo wrestlers do you think are female?" And it so happens that I happened to see a documentary about female sumo wrestlers. It's a very small number, very small number. And so they were like, "Oh, wow. Okay. Yes. I guess a very small percentage. I think we have to change that." So it's amazing that this is actually pretty common, that it still happens. So I interject there, but just to lay the groundwork for that this still really happens, and now we need to hear what it looks like on the other side.

**Julie:** Sure. Okay. So I'm going to do three quick examples. One is a kind of typical first year professional practice type course, and people might say, "Well, that's an easy one to make gender inclusive." And yes, it is easier to see how that can be. It doesn't mean that it's easy to do it. The second one is a technical course that I'll talk about, and the third one's just quickly to give you an example of that kind of third thing to mention of having a specific session about women in engineering.

So the first course I was going to talk about it one that's taken by all the engineering students at our university, and it's called Sustainable Engineering Practice. It has a number of elements that make it gender inclusive. It's a typical first year introduction to engineering kind of course, and the students in our university are very diverse, not as diverse as we'd hope for gender, but certainly diverse in terms of race and language and cultural background and socioeconomic circumstances. We're one of those universities that has a mission to take in disadvantaged students.

So I guess one gender inclusive aspect of the course is that it's coordinated by a female mechanical engineer who's assisted by a female civil engineer, and often, most of the tutors are female as well, so we think that's a kind of really good thing for students to see first up in their first year.

In terms of the content, it's got several gender inclusive components, and one of them, I'm not sure that it's in America, but it really should be if you can get it over there. It's a student design project called the [Engineers Without Borders Challenge](#) (EWB). So Engineers Without Borders you'd possibly have heard of. It's a humanitarian engineering organization, and this is supported by them in Australia and it's taken by most universities around Australia and New Zealand now. The students work in teams of four to six, and they have to develop conceptual designs for real, multidisciplinary, international, sustainable development projects that are being undertaken by the EWB group itself. This is first year, first semester, so it's not like anybody has a huge technical background at this point. So a lot of it just relies on a whole lot of the stuff I was talking about in terms of prior knowledge and so on.

So each year, the project's focused on a different community. So people like people in the Tonle Sap region in Cambodia, areas of India and Sri Lanka. We've had indigenous communities in remote Australia. This year it's Vanuatu in the Pacific Islands that's been battered by some cyclones and things. So the EWB organization provides some resources online, and they provide a representative who comes and introduces the project to the students. But then, really, the students have got a huge range of opportunities to choose from in terms of what they want to focus their project on. So it can be things

like housing or water and sanitation or energy supply or information and communication technology (ICT) supply, managing waste, the social environment, improving education facilities and so on.

It's a great project. It's particularly gender inclusive because it involves social and humanitarian aspects, but also because it requires culturally appropriate solutions. Plus, there's a lot of freedom for the student groups to choose the project topics, and it's interdisciplinary, so that also helps.

The other part of SEP, that's Sustainable Engineering Practice, that's very gender inclusive is the tutorial workshops and individual portfolio assessment that's included in the course, and that focuses on a range of areas. Again, some of them you'd think as traditional, how to write reports and all that kind of stuff, but we focus particularly on how they communicate and how that communication impacts on others, and how they work in teams and what factors influence teams. So the concept of personal rank, for example, and that the rank of a white male is different in a team than the rank of an international student whose English isn't as good or a female from a different culture and so on. How to understand cultural differences, we have a particular focus on working with aboriginal communities in Australia, and ethics in engineering. So a lot of them are things, they're really important in terms of their professional future, but we introduce them right up front, and then we come back to those all the way through the program in various ways.

So if I move onto a technical course, you mentioned earlier materials science, our course called Engineering Materials is one where it used to be a very, very traditional engineering materials course and it was taught by the same lecturer who had been teaching it for a long time. One of the other things I mentioned earlier was about development for faculty to get them to understand and learn how to be more gender inclusive. And when we ran a series of inclusive curriculum workshops at the university, this particular faculty member was a participant in those and became a real kind of champion for this, and he really restructured his whole course around gender inclusive principles.

He was somebody who's retired now, but he was somebody who had always had a lot of involvement in the industry in terms of being a professional expert for material failure case studies. He did a lot of demonstrations and things in his lectures, talking about failed materials, connecting theory in real life, which is also a very gender inclusive approach. He used those case studies to demonstrate and use as problem solving exercises in tutorials, but he linked it to real life situations, so environmental and human factors. Examples where he looked at the fracture of a marine oil pipe coupling, which resulted in an oil slick. So looking at how material behavior could influence the environment and the impact of work practices, and how you, if you diverted from standard operating procedures, these were the kinds of consequences that could occur.

He looked at corrosion of steam pipes and pressure vessels, and the potential for injuries in work places because of those. He talked about the emphasis between materials and maintenance and management of financial decisions. Another example that he used as a tutorial exercise was looking at who was responsible for the fracture of our hired front end loader. So was it the responsibility of the owner of the cracked component or was it the person who used it incorrectly? They talked about the failure scenario and the fracture details, and then they got the students to do a kind of a role play in terms of what the judgment should be on the verdict, because this case went to court, and what should the distribution of damages be according to the responsibility. Again, this is a first year course, so a lot of it has to be based on prior knowledge, but this enabled students to kind of solve these problems looking at ethical considerations, looking at different people involved. So it's a good example of interdisciplinary engineering work and requiring students to take on a professional role.

One last aspect of engineering materials that was a very inclusive kind of way that it's run is that it has ongoing assessments, so in class quizzes and online quizzes and tutorial assignments and practical reports and things like that. What he did was that students could choose to take their continuous assessment as 100% of their assessment, if they wished, or they could sit the examination, and if they sat the examination, the exam mark would replace the quiz mark. Or, they could sit the exam to improve their mark, but with a guarantee that their mark won't be reduced from what they got from their continuous assessment. So it basically gave students options of being able to get assessed in the way that suited them best, and also for things in terms of personal circumstance, if exams weren't going to be possible for them.

The very last quick one I want to talk about is, I talked before about having a kind of explicit workshop about issues for women in engineering and so on, and I have run mine like that for many years in our final year civil engineering design project course. I'm not teaching it anymore, so I've got other people running that now. The workshop's called Engineering A Better Workplace, so it starts out with kind of the statistics and the research about women and minorities in engineering, and where you do a bit of a quiz to test students' knowledge of those kind of data, and then we use some short videos of harassment and discrimination scenarios in a university setting in engineering classrooms to raise awareness of what can happen and generate discussion amongst the groups, small groups of students about what they think about those situations and what could be done about them.

Then we broaden that out to talking about students' experience both at the university, but also industry placements, and we get both women and men students speaking up about either things that have happened to them or things that they have observed in the workplace. I guess we're trying to emphasize that it's everybody's business, it's not just something that women have to try and navigate. I must admit, also, it's often a little bit confronting, and so I always kind of say to the women in the class that if they want to come and talk afterwards, feel free, and often a lot of them do, so. Anyway, that's kind of three examples.

**Donna:** Those are three great examples, and I know our listeners are wondering if the Engineering Without Borders is in the United States. That's where the majority of our listeners are, and it is in the United States. **And I'm anticipating that some of our listeners are also wondering the professional development that you described in your last example, if that is available in any kind of format, if they were interested?** And giving it in the U.S., would they be able to get in touch with you, or maybe it's less transferable to U.S. What's your response to that? I know that would be a question.

**Julie:** Sure. [Engineers Without Borders Challenge](#). They could look at the Australian version and get an idea, and then, yeah, start lobbying the American EWB group to try and set something similar up in America, because it's an awesome project. And as I said, pretty much every university in Australia does it now.

In terms of the inclusive curriculum development workshops, I've got to admit, we haven't run those for a long time. The people that ran them are not around at the university now, but I could look that up and kind of see if I could put together some of the resources for that and maybe send them through to you and at least give people an opportunity to have a think about it.

**Donna:** That sounds great. Now, one of the things that I get the most is, educators come through the WomenTech training, they understand the importance of gender inclusive projects and exercises, and they say to me, "Donna, is there off the shelf content that I can use?" or, "Where do I get more



examples?" And, of course, I attribute your book and actually give them the order information. I tell them not related to you at all, but how helpful I found the book. What suggestions do you have for educators that, they're listening because they are committed to this, they want to do it correctly?

**Julie:** Sure. Obviously the book would be one. Sometimes journals, and certainly conferences in engineering education. So, as you mentioned, we met at a conference, the American Society for Engineering Education Conference. The ASAA conference can be really daunting because it's huge, but pick out the stream that you're going to go to. Sometimes within the women and engineering streams, you'll find papers that will give you some examples, as well, but it's still not all that common. I guess the other thing I'd really emphasize is that you don't necessarily need to go out and find somebody else's example. Often, the examples that you're using are totally fine, as in the projects and exercises. You just need to look at them with fresh eyes.

So think about what assumptions you're making about prior knowledge and experience. Think about your own biases and how that might be coming through, and just think about how you can do things differently. So what could you change or add, or what should you take out to make the projects more gender inclusive? And if you're not confident in doing that, the other thing I would strongly suggest is go and get to know the people in your women's studies faculty or your sociology department or whatever.

*The Gender Inclusive Engineering Education* book and the other book that I wrote, they were the result of a long-term partnership collaboration with women faculty members in other departments, so, sociology, education. There's likely to be an education specialist who looks at women's issues, girl's education, that kind of thing. So talk to them. Go and get to know them, and that'll be a really valuable experience no matter what, but they would be able to, and they would probably be delighted, to help you with reexamining what you currently do with fresh eyes, so.

**Donna:** I think that's a wonderful suggestion, and some of the school teams that have been in our WomenTech educators training have done that kind of brainstorming. I think it's so valuable. It's not always easy to see yourself, and if you've been something a particular way, to see it another way, but bringing in that female perspective from others is a great way to do that.

Well, in closing, I have to say. I think you have probably convinced many more educators to try making their STEM course more gender inclusive. **And let's just, in closing, talk about, what could the first steps be as they go on this journey to create a more gender inclusive STEM curriculum?**

**Julie:** Okay. I think my main advice would be to just do it, to get started, and it doesn't matter if you just start with just a few small changes. Any steps that you take are better than staying with what most engineering programs actually are at the moment. We've said before, you can't do any harm. Like, the research shows that doing this kind of thing makes it better for all students, so you can't do any harm, and you're not dumbing down anything.

From a practical viewpoint, I think I've emphasized over and over again, you've got to try and think about the backgrounds and perspectives that your students come to your classroom with, especially the female students. So think about it from that perspective, and that's the first step. And remember that all knowledge is gendered in some way. So you'll get people saying, "Well, I teach math. Math is math," but think about the examples that you use to illustrate mathematical concepts, and also remember that there's a lot of unexamined or unthought gender assumptions in lots of our social interactions. All the

research that talks about, no matter how good they think they are doing, teachers spend more time answering male questions than female questions in a classroom, for example. So you do need to examine your own practice.

And remember that however the curriculum's been designed, even if it's been designed in a gender inclusive way, it won't be experienced as inclusive by the students unless the teaching and assessment methods are also inclusive, and the learning environment is managed in such a way that it's inclusive of all students. So if you illustrate all the applications of a theory in a Western male context, like we talked about in terms of motor vehicles and things like that, then the course isn't gender inclusive. But if the content has been designed to be gender inclusive, but you then still allow a particular group of students to dominate the class, then the course isn't gender inclusive.

Sometimes you might not get the chance to design the curriculum, so you're just given a course and told, "You've got to go and teach this course this semester." And you might think, "Well, what can I do? It's already been designed." But, there's always things you can do. So you've probably been told you've got a description of what you can teach, maybe you've been told how you teach it in terms of it's got lectures and tutorials or whatever, and maybe you've been told you've got to have an exam and you've got to do this, whatever. But that's still only part of what you do. You can still think about how you maybe sequence the content, what examples and applications you use, and you're the one managing the classroom or laboratory environment, so what the students experience. And you can possibly negotiate with students on some of these matters, depending on what the rules are in your institution.

Even if the assessment structure is mandatory, you've got to have an exam or whatever, you can still control the content of the exam. You can make the curriculum more gender inclusive, even if you haven't been able to design it that way. But obviously, ideally, you can design and implement the curriculum. But I guess, in summary, I'd just say you can always make a difference to the experience of learning for all students in your classroom.

**Donna:** And you have helped our listeners with how to do that. So, once again, thank you so much, Dr. Julie Mills, for making time in your schedule and coming to us from Australia. I know that many more educators are going to be able to improve their curriculum and make it much more gender inclusive as a result of this session. Thank you so much.

**Julie:** Don't worry, it's all good.