➢ *Dr. Streveler: Welcome to the Research Briefs Podcast.*

I'm your host, Ruth Streveler, coming to you from the School of Engineering Education at Purdue University.

The goal of Research Briefs is to expand the boundaries of engineering education research. In these podcasts we'll speak to researchers about new theories, new methods, and new findings in engineering education research.

My guest today on Research Briefs is Dr. Nadia Kellam, Associate Professor in the Polytechnic School of the Ira A. Fulton Schools of Engineering at Arizona State University. Prior to joining the Polytechnic School, she was an associate professor at the University of Georgia.

I have had the pleasure of knowing Nadia for about 10 years and I always know she's pushing the boundaries and I can count on her to have work that is intriguing, that energizes me, that's a little different. She's worked on some fascinating topics like STEAM, which is putting art in STEM, Maker Spaces, and emotion in education.

So, instead of just discussing one particular topic, since Nadia has continued to do so many different cool things, I've asked her to give us a sense of her own narrative to inspire us all to think outside of the box.

Nadia, welcome to Research Briefs.

❖ **Dr. Kellam: Thanks so much, Ruth. Yeah, I've always enjoyed our conversations and our chats, so I appreciate the opportunity to be a part of this cool podcast that you're doing, this cool thing that you're getting into. Thank you.**

➢ *Thank you. So, to start us off, can you tell a bit about your pathway into engineering education research?*

❖ *Sure. So, I started doing engineering education research as a Ph.D. student. I was in a traditional mechanical engineering program and did all my degrees in mechanical engineering. And I had done, sort of on the side, some conference papers and gotten a little bit into engineering education and I was trying to figure out a dissertation topic. And I had gotten to the point where I had taken all the required courses for my Ph.D., so I was basically where I just needed to figure out my proposal, figure out what I'm doing. And my advisor kept . . .*

➢ *Just that little piece, right?*

❖ *Yeah, exactly, just a minor detail. And my advisor wanted me to do something around like industrial parks. And I remember I was in a lab for sustainable solutions, so I'd go and read all this stuff; I had these big binders full of articles and trying to find a niche or something that made sense for me to do in there. Something I cared about and, you know, could go through with. And, I went through a couple of different topics like that and*

just wasn't happy at all.

Finally, after some time I think my advisor noticed that I wasn't happy. And, I'd thought about doing something with engineering education and I was interested in complex systems; so, something between those two. And finally, he sort of gave me the opportunity. He said, "Well, what would make you happy?" And I'm like, this would make me happy and he's like, "Okay, do that." So, that was awesome to have that sort of opportunity in a traditional mechanical engineering program.

I remember when I decided that and started doing the research proposal and started moving through the process, other faculty started asking me what I was doing, and sort of what I was thinking. So, there was concern about like what are you going to <u>do</u> with this engineering education? And this was sort of at the cusp of, I think it was just before Virginia Tech and Purdue had started Schools of Engineering Education. So, it was a new thing, or something they hadn't heard of before. It's like, "Are you going to go into administration? What are you going to <u>do</u> with this?" I'm like, "I don't know, this is just what I'm excited about and what I'm passionate about, and this is what I want to do and I'll see what happens later." So, it was kind of cool to be able to do that.

And then I ended up, which I thought was a little bit funny later on, I'm sure they were all sort of amazed by it, but people who had done more traditional mechanical engineering dissertations, you know, stuff with automotives, and engines, and whatever, the were having trouble getting

placed into faculty positions and these were good, like really good Ph.D. students, some of my colleagues. And then I did this weird whatever engineering education dissertation and then I ended up getting a job right away in a faculty position at the University of Georgia. So, it ended up working out in the end, but I definitely didn't know it would work out; I wasn't quite sure what I would do. But I think that sort of started the whole like just doing things because it felt right and then hoping things would fall into place later on.

➢ *Right. So, when you were thinking about complex systems, what part of that began to intrigue you? So, were you thinking about how students learned complex systems versus just trying to map out the system, or?*

❖ **Yeah, so when I was an undergraduate student, I actually transferred to an engineering school at a Liberal Arts school first, so did a pre-engineering program and when I got into the engineering school about my junior and senior year, by that senior year I was totally bored with my classes. Like it was very much making lots of assumptions and looking at these really simple systems in mechanical engineering. And so, it was difficult at first but then once you sort of figured out how to do the equations and whatnot like it wasn't that difficult.**

And I felt like there was just something really missing from my education. So, it was never thinking about the <u>people</u> in the system or how things <u>emerge</u> in complex systems. And so, the complex systems really made sense to me that this was something we need to know the details and we do

need to be able to drill down and get into the math and equations and stuff, but I feel like engineers also need to have a broader understanding of what's going on. So, being able to go up into the air and seeing the bigger picture, and what is, yes, I'm designing a bridge or a dam or something, but how is that going to impact the local ecosystem? How is that going to impact, you know, who can cross that bridge? Is there a tight tunnel where only people who own cars can get through it and then it limits people that are in busses so they can't go to that area? You know, trying to think more about systems in a more complex sort of way.

I think for me that interest in complex systems is what eventually led me into qualitative research and then eventually led me into like narrative research methods and some of these things. So, now looking back I'm like, "Oh it all makes sense," but at the time it didn't necessarily.

➢ *Yet they always say that, you know, what happens and emerges in your life in a forward direction when you look back you can see that pattern that isn't there.*

So, you went from complex systems and being able to look at problems in a broader way. Do you remember a bit about the steps of what came next as you began investigating different areas? You get this job at UGA and kind of what happened after that?

❖ Yeah, I learned a lot in the process of the dissertation. I had one of my Committee Members he was like you need to triangulate. And to him that

meant I needed to do a mixed methods so I looked at websites and those sort of as artifacts, and I did qualitative focus groups of students and interviews with faculty. And then I also did quantitative surveys that I sent out. So, it was almost like it could've been three different dissertations.

And what I learned in that was the survey part of it, like I got what I thought I was going to get. Now that I know more about instrument development, it wasn't the best example of a survey or an instrument. But for me it was just like this qualitative research is so much more rich, there's so much more to that. So, I think that was sort of what led me into doing qualitative research.

So, yeah, I interviewed at the University of Georgia and I think I was the fourth person interviewed.   I think I was the, you know you bring someone in and you're like, "Well it looks like there might be something to them, but probably not, but we'll just bring them in anyway," I'm pretty sure I was that person.

So, they brought me in and then they ended up loving me; like they loved the sort of complex systems aspect of things. I don't know, for whatever reason, they just really loved me, so I was really fortunate to end up getting that job.

But then I was in the agricultural and biological engineering department within the College of Agricultural and Environmental Sciences. And so, I'm the second female faculty; I think at the time it was 50 or 55 faculty and I

was the second female. At that time there weren't many Assistant Professors. And then I come in and I'm starting to build this research program where I'm doing qualitative research. And so, I was definitely sort of an odd duck for a while.

Fortunately, a couple of years later we hired Jo Walther, and so then I had sort of a counterpart or someone else that was doing engineering education research, and it was really exciting to be able to work with him and talk to him and explore ideas and stuff together. But prior to that it was a bit difficult.

And then I had done some research around sort of art and engineering, and I had a great collaborator in art education and then someone in creativity, and then eventually we added Jo to the team also. But looking at this transdisciplinary studio where we had art and engineering students and we started the research project.

We were planning to do a case study and it was sort of an intervention doing this thing; it was super cool, and a lot of really interesting stuff emerged out of it. We would do focus groups with students throughout the semester. So, really interesting dynamics that sort of emerged and as we started doing the research and started analyzing the data I started to feel like something was just missing. Like we had this rich data but then when you start doing the codes and categories we were losing the voice of the participants and these really powerful stories that these students had were just sort of lost. And I guess that's what happens whenever you start

looking across lots of data.

So, that was when it was like I feel like here's something else to this that we're missing out on. So that's when we started looking at narratives as a possibility of a way of keeping the voice of the students in the dissemination efforts. So that was kind of cool.

And then the other thing we came to was the role of emotion in learning, in student learning. And so, we had always before, I don't know, a lot of times in engineering I think we like to think we're analytical and logical and think in this very cognitive sort of based. But we started seeing stuff that we couldn't quite make sense of and then started reading about the role of emotion in learning and that they're not separate; it's not a right-brain versus left-brain thing but they're actually intertwined. And for us to make decisions, you know for example, we have to have the emotional capacity also to make good decisions. So, then I started looking into emotions and this totally completely new big area; and that was around when I was writing a career grant.

I remember I was super excited about it and so I told one of my mentors at UGA and he was like, "Look, Nadia, I think this is a really bad idea. Emotions?" I'm the second female faculty ever in this really traditional land-grant university, ag and biological engineering, agricultural and environmental sciences, and then I'm a female, and then I'm doing qualitative research, and <u>then</u> I'm going to study emotions? He's like, "Just wait. Wait until after tenure. I think it would be better not to have the

word 'emotion' on your CV."

So, I was a little devastated by it 'cause this was what I was all excited about, what I was passionate about; I knew it was risky writing the whole career grant about it 'cause it wasn't something that I had developed throughout my whole career so far. It was this new area that I was interested in exploring. And after thinking about his advice for a while I just decided, "You know what? I'm not going to worry about it. I'm going to tell the story that I want to tell. I'm going to do the things that make sense to me at the time and hope that they work out for the best." I don't know like if I hadn't gotten tenure, you know, then this isn't the right place for me. If it's a place where it doesn't value my work and my contributions, even if it's around emotions, then maybe it's not a good place for me.

So, I ended up not getting the career grant; it reviewed really well though. So, I just resubmitted it for what used to be RFE, I don't know what it was called at the time, REE maybe? But anyway, it ended up getting funded shortly after that. And I think with the NSF funding it sort of helped. Like, "Okay, if someone thinks this is valuable; we don't get it but."

> *Money is green no matter what the strange topic, right?*

❖ Yeah, and NSF money especially was very green in that program.

> *Yes. So, a little bit selfishly, I'd like you to, if you would, say a little bit about the narrative methods because we haven't had a guest yet who*

used it and I know people tend to point to your work as a place where it's been used in engineering education research. So, if you could just kind of introduce it to the listeners a bit?

❖ Yes, so narrative research methods there's not, like most qualitative research methods, there's not sort of a formula that you can follow, or a specific way to do it. One of the things that I think is true for all of my research now is I always do narrative interviews for the most part. I guess I'm always interested in things like, identity development or the experiences of underrepresented students or whatever it is, and the narrative, sort of hearing people's story, and the things they choose to include as part of their story can really help you get to some of that richness of the data and of what makes them sort of unique.

So, with narrative interviews I sort of start with just a really general question; you know, something basically like if I was doing an interview with you it'd be like, "So, Ruth, I'm really interested in your story and I'd like you to tell me your story. Feel free to take as much time as you like, but I'd like to know how you got to the point you're at now where you're a Full Professor at Purdue. And this could go back from when you were a child, or when you were an undergraduate." So, trying to encourage people to think back and make connections across their background. And that's the narrative part of the interview.

Now, sometimes that'll take 30 minutes, 40 minutes and that's awesome. Sometimes people are a little bit more abbreviated, or they're not used to

taking long turns like that, so they'll sort of shorten it.

And then you enter into more of a conversational phase. And the interview protocol is super-easy to write, but what that looks like is, "Oh, you mentioned getting Full Professor, so can you tell me more about that?" And so then like keying into certain points of their story, or things that you're interested in, and then just getting them to tell you more about those specifics windows in their story. So, that's what a lot of the interviews look like.

And then for the analysis of them it can take a couple of different forms. So, some of the stuff I've done sort of falls into the narrative analysis category where you basically construct narratives out of the data. So, this could look like, it could be that I take your interview and construct the narrative from that interview. A lot of times I like to try to use all your words; sometimes you have to change or add some connective words and stuff so that it flows. Although you don't have to do that, it could be from the researcher, but I always like the voice of the participant.

The other way to do it would be to, say I interviewed you and a lot of other people and then I could construct sort of fictionalized narratives but based on the themes and the stuff that I found in the stories and the patterns that I found in the stories. And that can be valuable in some cases where you really want to protect sort of the anonymity. We did an interview recently with a trans student at a private institution and it would be sort of easy to identify who that person was possibly, so then we're trying to think about

other ways to present those.

And then the other thing you can do is sort of an analysis of narratives. And so, this could look more like what we're used to seeing in engineering education where we have these narratives we collected. We did these narrative interviews with however many people and then we could start, we could use some coding or some of like Johnny Saldaña's different codes and different levels of codes to try to start to see what the patterns across the different interviews and the different stories are.

So, different ways of approaching it. I don't know if that is enough of an overview. The thing is I think a lot of times I think people that are new to something are like, "Well, what is the answer? What is the right way of doing it?" And there's just not, you have to think about what's important to you, how you want to disseminate the results. The thing that gets sort of sticky with these is really the dissemination.

We did a project around faculty change. We were interested in finding this exemplar faculty, the ones that have changed from sort of passive learning strategies in their classroom to really active strategies. So, we did that, we did these interviews with people from across the U.S., these super-star faculty and educators. We did it with the plan of this is going to be a narrative research study. But even then you start writing up, or one of the places we presented at was REES and they have a really limited page number. So, then it's like how do I include the stories of some of the participants in this really small format?

Then we moved that into a journal article and expanded them some; included three stories in there from the participants but it still was mostly in the researcher's voice with excerpts from the interviewee. So, it just didn't feel quite right; I think it was valuable, but it didn't quite get to what I wanted to get to.

And part of my research team was Brooke Coley and Audrey Boklage; we had created these, we had constructed these narratives, the step in the analysis so these really rich narratives and I'm like it's just all getting lost. And, one of the values I see in this work is that other people can read other people's stories, or hear other people's stories, and see that it's not that you're just born being really good at active learning in your classroom. Like, they encountered all kinds of barriers and difficulties and still sort of persevered; so really these inspirational stories but also really rich and complex. So, it's not a simple, "Oh, I wanted to do this, and I tried it and it just worked well," stories.

So, I was like, "Well, what can we do? How can we share these stories with people, with engineering educators, with new faculty, or with older faculty that want to be inspired?" So, we decided to write a book where each chapter is basically a story of each of the participants in their words, in their spoken word, which is maybe a little bit strange. So, I'm working on that now; it's due at the end of November, I'm not sure when I'll have time to finish it. But then, each of the participants, because these are faculty, they'll be the authors on those chapters.

And that's another thing, I think Alice had mentioned it in your podcast with her, but some people like you tell your story, you want your name to be associated with your story, so we ask people, "Would you like this to be a part of this?" and then they're involved; we check in with them to make sure they're still good with us sharing their stories. But I think most faculty, especially in this type of study, they are happy to be, they want to be identified 'cause it's their story, their unique story. So, it brings a lot of interesting things along with it, the choices you have to make.

> ➢ *Now, I hear you're also investigating a really cool method that you're intrigued by.*

❖ Yeah. So, the thing I am super excited about right now, we have this project it's around Maker Spaces and we're interested in trying to understand how engaging in Maker Spaces impact students' identity development, especially students from underrepresented groups. The reason for doing this was, you know, engineering education as a system, or higher ed. is a difficult system to make sort of widespread changes to. These Maker Spaces are relatively new and they're really spreading like wildfire and we're getting them all over the place, in lots of universities, and engineering students have access to them. So, it seemed like something that we could maybe more easily have impact with. And it seems like a powerful space to help people develop, especially underrepresented students to develop their identity and self-advocacy as an engineer.

So, we did this sort of cool; we visited seven different institutions that had university-affiliated Maker Spaces. It ended up being 10 Maker Spaces. And at each site we interviewed at least eight students; it ended up being I think 67 students total. We really tried to target students from underrepresented groups; so, at the end I think we had like 80% that were from underrepresented groups. And again, it's sort of a similar story, but that's a big dataset, it's a lot of data.

So, now we're in the analysis and dissemination phases of it. And we're doing more traditional coding and looking across and looking for patterns; pulling out subsets of students. So, we have a lot of black male students. We went to HBCU [Historically Black College and University], so it's like this is a population we haven't done a lot of research around, so it seems like an opportunity to look at that. And so, we're doing different types of studies.

And I had attended an AERA conference, the American Educational Research Association, I believe, and had attended this conference and listened to this presentation and it was about I-poems. This woman read some of these I-poems during the presentations and basically, I-poems come out of this listening guide that Brown and Gilligan had developed a while ago, like from the early 90s. And they were feminist scholars and really interested in understanding and focusing on the voices of the participants. And so just sitting in that presentation like, "This is amazing and so _powerful_."

Basically, it involves you take an excerpt from an interview transcript and then you sort of underline all of the sentences that start with "I" so anything

with "I." And it started to change the way I interact with people. I notice I start hearing you have I-people and You-people; like people that are really interested in talking about themselves and then people that are interested in learning from others. But you underline all the "I" statements in it and then organize them temporally, so pull them out. And then I ended up adding some contextual stuff, and there's some "He," and some that don't necessarily start with "I," but just to help so that it makes sense.

And I just went to FIE, the Frontiers In Education conference and did a work-in-progress session; so we did like 10 quick presentatons, five minutes each. And of course, I'm the very last one and so at this point people are like, you can just tell they're just done, sort of glazed over. How can I connect to the audience? I don't know. So, I gave sort of a quick introduction and asked some questions like, "Have you ever felt like the voices of your participants got lost in the data analysis phase of the research and in the dissemination efforts?" And so, started asking some questions and people are like, "Oh yeah, yeah, I've definitely had that," and then I read this poem and it was amazing? Should I read it, do you think?

➢ *Yes.*

❖ Okay. So, this is a poem and I'll talk about it afterwords and I might just read it without saying much about it, and this is part of that Maker Space project.

"So, I was in there.

I had a project.

I was filing my project.

I was doing some finishing on the wood; I'm filing.

I know how to file, I had to.

I had a class before.

I was filing wrong.

I did it and it was beautiful.

I know how to file.

I'm filing upstairs. Big file, perfect strokes. A guy is hovering behind me and it's just like, 'Tsk, tsk, tsk, tsk, tsk.'

I'm like, 'I don't know what he's doing 'cause I'm like, I'm filing.'

I'm just like, 'he's just like, 'No, no.''

I think he's like doing something else.

He like touches me.

'Um, excuse me, excuse me, you're doing that wrong.'

'I'm sorry?'

I was like, 'Oh, no.' It's like, he starts doing it.

He's like mangling the side of my piece.

I was like, 'Oh no, this.' I'm like, 'I think I got this.'

He's like, 'Okay.'

I don't know, I was just like, so now I'm like this piece is mangled, I have to fix it."

So, this was taken from a transcript with a black female at a private institution. And when I read it at the Frontiers of Education conference like people were glazed over when I walked up there, and then people start

leaning forward and I actually saw like tears in some people's eyes. And then I finished, and we had a poster session afterwards so people could come and talk to you or whichever ones they were interested in.

I had this man come up to me and he said, "That's me. I think I did that last week with a student. I had no idea how that was perceived by the student." He was just struck. He's never considered that he could be having this sort of impact on his students. So, to me it was like this was so powerful that this man that's engaging in Maker Spaces, this may change his behavior or at least get him thinking about and reflecting on his behavior of how these students are interacting with him.

And this student, there were some really cool stuff with this Maker Space and the management but then you have other students in the spaces and sort of where people feel marginalized. And he sensed that empowerment like, "I know how to file, I know how to do this, it was beautiful," or whatever. And then you have this person that just comes in and starts taking away from that. So, that's the thing I'm super excited about right now.

➢ *And I think the power of the I-poem you read is that you can construct that image in your mind. That young woman who knows how to file fabulously and she made this beautiful thing and here's some guy saying, "Oh, no, I know how to do it better," and then mangling it. And that is so much more powerful than making some academic statement about microaggressions or feeling marginalized. That tells you more about*

what is the experience of feeling marginalized.

❖ Yeah. And I don't know, you could tell it was a female from hearing it.

➢ *You said it.*

❖ Oh yeah, I said it at the end, but I was wondering if when I was reading it you could tell.

➢ *No, but you said it at the end. And then I project something about the situation when you said that.*

❖ Yeah. I guess part of the excitement is sort of maybe eliciting that emotion so people can really start to resonate with the participants and feel like you're maybe standing alongside them instead of sort of staring at them, or studying them. So, we're still, as researchers, we're still in a position of power with our research participants. Like we're choosing, like even in this, I had all these student narratives to look at and I chose this one and then I chose this one excerpt. So, there was still a lot of intentionality from me as the researcher in me choosing which stories to bring to the forefront. But at least then you still bring their voice back into it.

And then also, these are shorter so it can allow us to include or get the feel of the voices of multiple people in a traditional journal article or in a conference proceeding. So, that's kind of exciting.

> *Well I can see why you're excited about that; that's really powerful and a way to be able to help people really create that emotion.*

❖ Yeah, so I think about people who are listening, so maybe if you're doing analysis and something doesn't feel quite right, it's okay to pivot and even though we didn't start this project going, "Oh, we're going to do this I-poem analysis, or we're going to follow the listening guide," but sometimes stuff comes up and something just wasn't quite right. And there's nothing wrong with continuing to do the other stuff that you planned to do but it's also okay to pivot and learn about other research methods or try to find something that better aligns with what you're trying to do. And how you can disseminate these types of things and be okay with experimenting and playing and trying something different.

> *So, I would like to wrap up with a final question because I'm hoping that the podcasts do inspire people to try new things. And one thing that I think your story demonstrated several times today was that you'd be in a situation and something just didn't feel right; you were missing something. And that you then explored and, either by serendipity or by reading, you encountered something that might work. But it was really risky, and people explicitly said, your mentor said, "Don't! do! that!"*
>
> *Can you talk a bit about what gave you the courage to do it anyway?*

❖ Yeah, that's an interesting question. I don't know, I don't know where that came from; I don't know if it was a mom that was a feminist and pushed us

to do good things and be authentic to yourself; I'm sure that was part of it. Yeah, I don't know, it seems to be I think maybe because of some of those experiences that I started to learn that it was okay to do what felt right to me and to take that risk. And I guess partially it may be because I have some privileges where it did end up working out for me.

But starting to become comfortable with even if say I hadn't gotten tenure at UGA because I had emotion quite few times in my CV, even had I not gotten tenure that would've been okay. And I don't think I would've looked back and had major regrets that, "Oh, I should've listened to my mentor. I shouldn't have done these things, or done whatever," because it really aligned with who I am, and it was authentically me. So, I think it would've been okay. I might've had a very different life after that point.

I think it's good in that particular situation I was like, "Well what will happen?" So, like what is the worst-case scenario? Am I going to starve? Am I going to go to prison? Things will be okay. And I sort of had come up with a Plan B with the whole tenure thing because it was a little rocky along the road at the college level vote. I came up with this Plan B and it was to become a professional skydiver.

➢ *Which is this something you do.*

❖ Yes. Which it was a possibility for sure. I don't know remember how many jumps I have had, probably 1,500 or 1,800 jumps, and was competing at a national level. Like it could've been something we could have done. We

probably would've transitioned from living in a house to living in a trailer. But it would've been a meaningful life.

But just being okay with taking the risk. I think if you take the risk then the reward, or the potential for reward, is huge; whereas, if you don't take the risk I don't know you might just sort of be in a middle ground. Like it'll be okay but to me it won't be like the most meaningful, or the most exciting, or the thing that really resonates with you that gets you up in the morning and gets you excited about what you're doing. I think that's important, or at least for me it's important. And now, for sure, now that I do have tenure it's easier to maybe not be as worried about those things; it's one of those luxuries that tenure grants you where you don't have all those pressures and stuff.

But on the other hand, if you end up not getting tenure at your institution I think it just isn't necessarily a reflection on you as not being a good scholar, or as not being a good faculty member. I think it really sort of reflects that the alignment just isn't there and the goals of the institution aren't aligned with your goals. And so that's probably a good thing to figure out. And maybe that's not the best place for you to be empowered, and to really blossom, and to do exciting and whatever things. So, push the boundaries.

➢ *Well I think people have a sense of why it's always so exciting to talk with you.*

   I have this picture of you as this person that kind of looks for the sun like

a sunflower will turn towards the sun. I think Nadia turns towards the sun and perhaps being at an institution with the Sun Devils . . . perhaps that's a good fit for you.

❖ Perhaps. It's a good fit. It's true, at ASU we have this open access mission which is really awesome. So, it's not just about letting in the upper crust or the best students but letting in a lot of students and more of our value comes from whatever they do whenever they leave us, or what they've learned. And then they also really like change at ASU. And so, for me that just resonates with who I am. So, yeah it is a good place for me to follow my sun; I like that metaphor.

➢ *Yes. Do you have any last things you'd like to say to the listeners?*

❖ I don't know… I guess the main other thing that maybe didn't explicitly come out was trying to find other inspiring and empowering people to be around. That can make a big difference. If you're just working alone in your office, which sometimes we're almost encouraged to do, but if you can find people like when Jo came to UGA that was amazing.

A year ago, I had a faculty member, or someone that was starting as a faculty member in December contacted me and he's like, "I'm interested in doing this RFE, the Early Engineering Education thing, and I've wanted to find a mentor." And so, we ended up working together, his name is Suren and he is a joint appointment between Arts Media Engineering and Electrical and Computer Engineering and then he has an undergraduate

degree in Philosophy.

It's so cool. So, we're working together. We got the grant, which is exciting, trying to understand sort of the epistemology of these students that are in this transdisciplinary art, media, and engineering program, and then also looking at the more traditional students. And then in trying to figure out how to understand epistemology - you can't just ask students, "So, tell me about your epistemology?" So those led us down this path to where now we're learning discourse analysis together. So, it's just super cool. I really look forward to doing the work and going to those meetings.

So, trying to find people like that that can help inspire you and you can start learning together; I think that's really important to take the time to try to find those collaborators.

> *I agree. So, I feel that people have learned from you, speaking about learning together. And I will certainly continue to keep an eye on the cool new things you're doing and find ways to keep interacting with you.*

> *Thank you so much for being a guest on Research Briefs.*

❖ **Thanks so much for having me. I appreciate it.**

> *Research Briefs is produced by the School of Engineering Education at Purdue.*

- *Thank you to Patrick Vogt for composing our theme music. The transcript of this podcast can be found by Googling "Purdue Engineering Education Podcast." And please check out my blog, RuthStreveler.Wordpress.com.*