

Message from President Cook

April 8, 2025

Hello everyone. I'm here today in Sugihara Hall in the lab of Dr. Kalpana Katti, a distinguished professor in the department of civil construction and environmental engineering who has recently been named a Fellow of the American Association of the Advancement of Science. AAAS, which is a very significant honor. So, congratulations.

Thank you.

This prestigious honor recognizes her outstanding contributions to science and engineering. So, we're all very, very proud of you.

This is an absolutely world-class award that you've accomplished. So, to start things off, how long have you been at NDSU?

I've been at NDSU for, I think, about 27 years. 27 years.

Fantastic. Love that.

So, tell us a little bit about the research that you do at NDSU.

Sure. I work on a variety of different research topics and one of them that I spend a large part, portion of my time working on is on metastasis of cancer. That is when cancer transports to a distant location in the body, often it is incurable. In particular, when for instance, prostate and breast cancer transport to bone it is incurable and it's incurable because animal models often fail and there's a scarcity of samples available that are human, human tissues, because patients are often in a hospice. So, what we've created is a test bed of cancer metastasis.

So, in the laboratory we recreate the bone using tissue engineering using synthetic materials. So, we make the bone using patients' own cells and then once the bone is created, on that, we insert the cancer cells and essentially what we have created is a cancer tumor at the bone site for prostate and breast cancer in the lab. And we also have a bioreactor where we, which we, have designed and fabricated here where we're able to recreate this sort of sheer forces exerted by blood flow. So, to make it as realistic as possible. So, basically, it's truly a test bed of cancer metastasis. We can use it to discover biomarkers. We can use it to screen drugs, and essentially, we we're trying to possibly one day make it possible for it to be used as, you know. like personalized therapy.

So, rather than oncologists doing trial and error on the patient now they do this on the test bed. So, that's where it's going and we, I, have a couple other projects also. Yeah. And so that's what's amazing. We, we've, been doing a little work in the lab. She's been showing us the kind of things that she does here. So, truly life changing research what you're doing and so for that we're very grateful for what you do here.

So, obviously, you as the lead faculty member, distinguished professor, now a AAAS Fellow, lead this work. But, tell me a little bit more about the work the grad students do in the lab.

Oh, grad students do all the work. They're the ones who are here morning to night, weekends, evenings. I think a lot of times people see the end result of the result, end result of the research, when it's published and all that and that's great but what leads up to that is the zillion years of working in the lab. A lot of failures when things don't work and, you know, repeating experiments. So, I think grad students are the unsung heroes of science. And they're going to become the next world-class researchers, too. (Absolutely) For sure. (Absolutely)

I mentioned the AAAS Fellow, that is an amazingly prestigious award, and then also being a distinguished professor here at NDSU, is also another one of those levels that's up there that we're very, very difficult to achieve and we're very proud to have you here. So, thank you for all that. So, your dedication and achievements on our campus and to the scientific community are truly a testament to the amazing work we do here at NDSU. And hearing about the work that our students do in that journey is equally quite impressive.

So, again, congratulations for everything that you do here.

And we got to end it this way. So, one, two, three. Go Bison!