Professor of epidemiology Tanika Kelly wins Innovation Award

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Tanika Kelly was one of the most recent recipients of the Innovation Award — selected by Tulane Senior Vice President for Academic Affairs and Provost Robin Forman. Kelly, a professor of epidemiology at the School of Public Health and Tropical Medicine and director of the Center for Public Health Genomics, spoke about her roles at Tulane, the impact of COVID-19 and her motivation to conduct innovative research to improve the lives of people around the world.

Over the last decade, there have been significant advancements in molecular technology, a key component in uncovering biological processes underlying disease, which could ultimately help people live healthier lives.

Tanika Kelly, professor of epidemiology at the School of Public Health and Tropical Medicine and director of the Center for Public Health Genomics, is a leading scientist in the world of genetic epidemiology. Some of her latest projects aim to curb kidney and cardiovascular diseases using next-generation sequencing technology.

“I want to make a difference,” said Kelly. “Chronic kidney disease has been the focus of some of my most recent research. One ongoing project is a whole exome-sequencing study of diabetic kidney disease. Here, we are testing to see whether DNA sequences in any of the 20,000 to 25,000 human genes differ in patients with diabetic kidney disease compared to those without. Identified genes could serve as targets for drug development to treat this condition.”

Kelly’s team leverages innovations in molecular and computational technologies to conduct multiomics research, using sets of biological data, with applications to cardiovascular disease prevention. She said adopting new technologies for discovery is key to innovative research.

“When I was younger, I thought I would be a basic scientist,” said Kelly. “I was really interested in cellular and molecular biology. However, during undergrad, I worked for four years in a maize genetics lab and found that bench science was not my passion. So, I took a couple years off after graduation to figure out what I wanted to do.”

Kelly’s journey to becoming an award-winning genetic epidemiologist was sometimes filled with uncertainty. When her mother suggested she look into a Master of Public Health program, she said her path became more clear.

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>
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“My mom, interestingly, is a nurse focused specifically on HIV patient care,” Kelly said. “She’s retired now, but at the time she worked in grant-funded clinics for a

major university in Chicago. PhD students in public health would come into the clinic to work on various research projects. One day, she said to me, ‘You know, you should think about doing a degree in public health. These students always remind me of you.’ And so, I looked into it.”

Kelly went on to earn a MPH and PhD in epidemiology from Tulane and is an avid mentor to students pursuing their doctorates.

“I love working with my PhD students. Training the next generation of researchers to do this work is so important,” Kelly said. “COVID slowed us down a little bit, but my research team is young and ambitious, and mentoring them is one of the most rewarding parts of my work. I’m glad that we were able to push through and move along with our projects despite COVID-19.”

Over the years, Kelly has been awarded millions of dollars in grant funding geared toward genetics research. Her next big project will involve studying the consequences of clonal hematopoiesis of indeterminant potential, a condition that causes an expansion of mutated peripheral blood cells and increases risk for hematologic cancers in patients with chronic kidney disease.

You can read more about the other recipients of the Innovation Award -- Tony Hu and Nora Lustig -- here.