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Nobel Prize winner speaks at WKU

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When physicist John Michael Kosterlitz got a phone call naming him a winner of the 2016 Nobel Prize in his field, the news left him in stunned silence for about 30 seconds before he could muster his reply – “Jesus!”

“At this point I was absolutely astonished,” said Kosterlitz, speaking during a lecture Tuesday at Western Kentucky University.

Kosterlitz had reason to be surprised. He was receiving the award for work he’d first done in the early 1970s. But in 2016, he was sharing the prize with fellow physicists David J. Thouless and Duncan M. Haldane.

“I’d given up any idea of a major prize for that work,” he said.

“Better late than never,” he joked.

Matter occurs in different phases, such as a solid, liquid or gas. The core of Kosterlitz’s work focused on studying the unusual phases matter may experience at very low temperatures, according to the Nobel Prize’s official website. Superconductivity, when electric current flows without resistance, is one example. And superfluidity, when a fluid flows without resistance, is another.

Kosterlitz used the concepts of topology, a branch of mathematics, to describe those phases and phase transitions. In the early 1970s, he and Thouless described phase transitions in thin layers at low temperatures.

Ask Kosterlitz about the secret to winning a Nobel Prize, and he'll tell you it's mostly just dumb luck involving being in the right place at the right time. Having "the smarts" is a much smaller part of it and involves mainly knowing how to do the right arithmetic, he said.

"I hope this story gives some of you hope," he said, addressing students in the audience at Ogden College Hall.

Kosterlitz, currently a physics professor at Brown University, describes his story as a series of random events. His work often tugged him away from his passion for rock climbing into jobs "doing physics that I really didn't want to do."

"But there was definitely a light at the end of the tunnel," he said.

Kosterlitz was born in 1943 into a family of Jewish immigrants in Aberdeen, Scotland, according to his biography at Nobelprize.org. He studied at Cambridge University and received his doctorate from Oxford University in 1969. From there, he did his Nobel Prize-winning work with Thouless at the University of Birmingham in the United Kingdom.

When he moved to Birmingham, Kosterlitz said he regretted leaving the mountains and climbing. But he later grew to love the place.

"Birmingham was the place where I learned what physics is really and truly about," he said. "I realized that physics is really something I could devote my life to."





That work allowed him to experience receiving a Nobel Prize.

“Every hour of every day was choreographed,” he said.

Kosterlitz joked about having to dress up and fumble through protocol, including bowing in the wrong way at the award ceremony.

“I thought this ceremony was so simple only an idiot could screw it up,” he said. “I managed.”

Zack Thomas, an alumni who graduated from the physics program, said he liked how the event exposed the field to the community.

“It was quite exciting to hear him talk about what led to winning the Nobel Prize,” he said.

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