

Dr. Adam Kanigowski



University of Maryland
USA

Adam Kanigowski is a Professor at the University of Maryland (USA). He specializes in ergodic theory and dynamical systems.

Kanigowski was born in Włocławek (Poland) in 1989. He earned his master's degree in mathematics from the Nicolaus Copernicus University in Toruń in 2012 and his Ph.D. in 2015 from the Institute of Mathematics of the Polish Academy of Sciences, under the supervision of Mariusz Lemańczyk and Joanna Kułaga-Przymus. After graduating, Kanigowski joined Penn State University as an S. Chowla Research Assistant Professor in 2015 and then joined University of Maryland as an assistant professor in 2018, where he was promoted to full professor in 2024. Since December 2022, Kanigowski has led a flagship project at Jagiellonian University that partly supports a research collaboration with UMD.

Kanigowski's research interests include dynamical systems and ergodic theory as well as their interaction with number theory, geometry and probability theory. In particular, he is interested in randomness and chaos in smooth dynamical systems, classification problems in abstract ergodic theory, and non-standard ergodic theorems that find application in number theory.

In 2015, the Polish Mathematical Society gave Kanigowski their Prize for Young Mathematicians (he was awarded for a series of six papers in the field of ergodic theory and operator theory). He was the 2016 winner of the International Stefan Banach Prize for a doctoral dissertation in the mathematical sciences. In 2017 he received the Kazimierz Kuratowski Award from the Institute of Mathematics of the Polish Academy of Sciences and the Polish Mathematical Society. In March 2024, the Simons Foundation named Kanigowski a 2024 Simons Fellow in Mathematics. In April he received the Institute of Mathematics of the Polish Academy of Sciences Prize for outstanding scientific achievements in mathematics for his "fundamental results in the field of dynamical systems and ergodic theory" and in July he was awarded the EMS Prize for "his outstanding contributions to the spectral classification and the mixing properties of slowly chaotic dynamical systems."

Title: Chaos in deterministic systems

Abstract:

One of the biggest discoveries in the theory of dynamical systems was that smooth (deterministic) systems can behave very randomly. Since then a rich theory of chaotic properties of smooth dynamical systems was developed using geometric, topological and probabilistic methods. In the talk we will present ideas, highlight main results and discuss

techniques that were developed during the last 70 years. We also plan to discuss more recent advancements and present main open questions in the field.