Friday 15.08.25

Knots, graphs, and algebra: a story of surprises

Zsuzsanna Dancso, The University of Sydney

Knots are everywhere: in the strings of our DNA, in the structure of super-strong materials, and in mathematics, where knots lurk behind all three-dimensional shapes. Graphs model social networks, transit maps, neural nets, and are one of the most basic objects in modern combinatorics. But what does the mathematics of knots have to do with the mathematics of networks? And how can we use algebra — the science of numbers, operations, and structure — to solve mysteries about both?

Zsuzsanna Dancso uses algebra and discrete mathematics in her research to study knots and shapes in three and four dimensions.

Zsuzsanna values the fresh perspectives of students and young mathematicians: the project inspiring this lecture included two students and an international collaborator. Outside of mathematics, Zsuzsanna enjoys dance, musical theatre, and feeding people.

Register for this free public event

17:30 Friday 15 August 2025

Lecture Theatre 321 Susan Wakil Health Building, The University of Sydney

This lecture will be followed by drinks and canapés from 18:30

A Sydney Mathematical Research Institute Public Lecture