Needles, Bushes, Hairbrushes and Polynomials

<u>Dr. Malabika Pramanik</u> [1]

Pretend that your car is a unit line segment. How do you perform a three-point turn using an infinitesimally small area on the road? It turns out that this seemingly impossible driving stunt is related to the fundamental theorem of calculus, as well as all the objects in the title of this talk! We will explore these connections and see how they have been useful in many problems in mathematics.

Speaker Biography:

Malabika Pramanik is a professor of Mathematics at University of British Columbia. She received her bachelor's and master's degrees in Statistics from Indian Statistical Institute. She obtained her PhD in Mathematics from University of California at Berkeley in 2001. Before joining UBC in 2006, Dr. Pramanik held positions at University of Wisconsin, University of Rochester and California Institute of Technology. Dr. Pramanik's research interests cover vast areas of mathematical analysis such as Euclidean harmonic analysis, partial differential equations and several complex variables. She is widely recognized as one of the most talented analysts of her generation. She is the recipient of several awards for both her research and her teaching. Among these awards are UBC Killam Teaching Award, the Ruth E. Michler Memorial Prize, and the prestigious Canadian Mathematical Society Krieger-Nelson Prize for research excellence. Dr. Pramanik is actively involved in initiatives that promote diversity and inclusivity in STEM fields, especially through her role as Vice-President for the Pacific region of the CMS and as organizer of programs such as "Diversity in Mathematics" Summer School.

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