Editorial

N Mukunda, Chief Editor

This issue is woven around the life and accomplishments of the mathematician Andrei Nikolaevich Kolmogorov, especially in the theory of probability but also in ever so many other fields of mathematics. The subject of probability – springing from such noble origins as games of chance in gambling houses – found its most elegant and fruitful form in Kolmogorov's hands as recently as in 1933. It is interesting to recall the physicist Pauli's characterisation of probability in a 1952 lecture:

"The mathematical concept of probability is the outcome of an endeavour to give as objective a shape as possible to a subjective notion." And he continues: "... the axioms of probability calculus do not lead to a reduction of the concept of probability to other more basic concepts. One cannot eliminate the concept of 'probability' from the system of axioms, which form the ground rules for its correct handling. In effect the concept of probability is implicit and is not defined explicitly."

All this is to whet your appetite for the many related articles in this issue. P Sundar surveys Kolmogorov's vastly productive axiomatic formulation of probability, the spring board for diverse extensions. G Rangarajan gives us a glimpse of the KAM theorem, a completion by Arnold and Moser of a fundamental result outlined by Kolmogorov on problems of stability in Newtonian mechanics. K R Parthasarathy in an appreciation written in 1988 describes Kolmogorov's work, life and personality, and experiences from his 1962 visit to India; while Ramesh and Vinay tell us in an engaging style about algorithmic complexity and Kolmogorov's key contributions – what is true randomness and how do we recognise it? And in Classics we reproduce a short essay by the master explaining probability to the lay person.

Even when the reading is difficult, it is inspiring!

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Wolfgang Pauli