Editorial

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An urdu poet has eloquently complained of being misunderstood by his beloved thus:

> *"ek nukte ne hamein mehram se mujrim kar diya*
> *kyunki hum du'a likhte rahe, aur vo dagha parhte rahe"*

(From confidante to wrong doer, one single dot did bring me down; one betrayal she did read, for every blessing that I wrote)

Here, the poet has played with the fact that several pairs of letters in urdu differ by a single dot. Thus, just one dot can transform du'a (blessing: دعا) to dagha (betrayal: دغا), exemplifying the importance of ensuring the fidelity of the information conveyed from sender to receiver during any communication. In fact, communication is defined in information theory as "reproducing at one point a message selected at another point".

Today, we often take for granted the technology that allows communication of complex messages across great distances with high fidelity. Yet, underlying information technology is a vast body of theory in information, coding and communication, without which many of the IT amenities we are familiar with could not have been developed. In this issue, we honour Claude Shannon, one of the pioneers of information and communication theory, on the first anniversary of his death. Articles by Priti Shankar, K Viswanath, and R Simon provide us with glimpses of Shannon's life and work, as well as some of the recent developments in information theory.

The 'biology' Nobel Prize for 2001 went to Hartwell, Nurse and Hunt for identifying the genetic control elements that regulate the process of cell division, a process that can result in cancer if it goes out of control. Trupti Kawli provides a lucid description of how key genes involved in regulating cell division were tracked down. Mariappan Periasamy describes the development of techniques for synthesizing chiral compounds, and the related work of 2001 chemistry Nobel awardees Knowles, Noyori and Sharpless.

We also have in this issue the first part of a two-part article on fractals, special curves that appear in nature in diverse contexts, and that have been recently speculated to represent the distribution of matter in the universe. Sovan Sarkar and others describe recent advances in our understanding of Alzheimer's disease, one of the most common neuro-degenerative disorders in humans, and discuss how recent molecular discoveries may result in better treatments for this terrible disease.