

The

Biomolecules

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are scientifically significant. They bring together scientists with deep knowledge of many different fields and it is certain that their contributions will elev

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ferent than a brute force search but the use of the “massive parallelism” of DNA made it very novel. A very large number of molecules, 10^{15} or more, can be used in a single reaction and the WC-complementarity assures that in the first step of the algorithm, the sequences representing paths are formed. A very large number of them are formed, such that, if a solution to the problem exists, with a high probability it will be represented within one of the formed sequences. So the immense labor required to solve the problem was taken care of with the massive parallelism — the fact that many molecules were “working” on the problem at once — and the WC-complementarity. In his article, Adleman asserted that if we consider each DNA molecule as a computational device, DNA based computers can bring potential savings in energy and increase in speed and storage of 10^8 fold. This was certainly one of the reasons for excitement.

Several theoretical models based on the lab protocols used in the Adleman’s experiment can be found in the literature.

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The talk will be on the mathematics, physics, and engineering that went into the development of Computerized Tomography (CAT) and other techniques like Magnetic Resonance Imaging (MRI). For more information, consult the Departmental website.

Nagle Lecture Series

Last Fall, Professor A. K. Dewdney of the University of Waterloo gave the Nagle Lecture on “Do Aliens Do Math?” The question is whether extraterrestrials might do mathematics (and science) as we understand it. This question leads to the philosophical question of whether mathematics is about “real” objects (like stars, planets, and automobiles) or about social conventions (like words, customs, and clothing fashions).

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journals, and Director of the USF Institute for
Constructive

