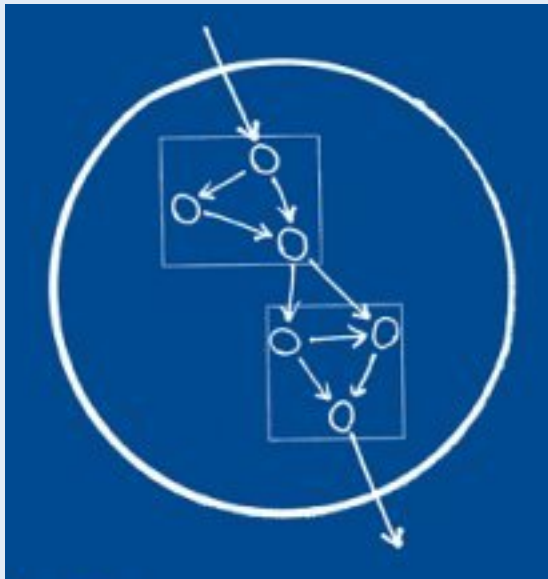


The Hilldale Lecture Series Faculty Division of the Physical Sciences presents:

Dr. Uri Alon

Professor of Molecular Cell Biology
Weizmann Institute of Science
Rehovot, Israel

Monday, February 18 at noon
H.F. DeLuca Forum, WID
reception to follow



Simple building blocks of complex biological systems

To understand biological systems, our lab has defined "network motifs": basic interaction patterns that recur throughout biological networks, much more often than expected at random. The same small set of network motifs appears to serve as the building blocks of the circuitry that processes information from bacteria to mammals. Specific network motifs may be universal building blocks of biological computation. We experimentally studied the function of each network motif in the bacterium *E. coli* using dynamic fluorescent measurements from living cells. Each network motif can serve as an elementary circuit with a defined function: filters, pulse generators, response accelerators, temporal-pattern generators and more. Evolution seems to have rediscovered the same motifs again and again, perhaps because they are the simplest and most robust circuits that perform these information-processing functions.

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