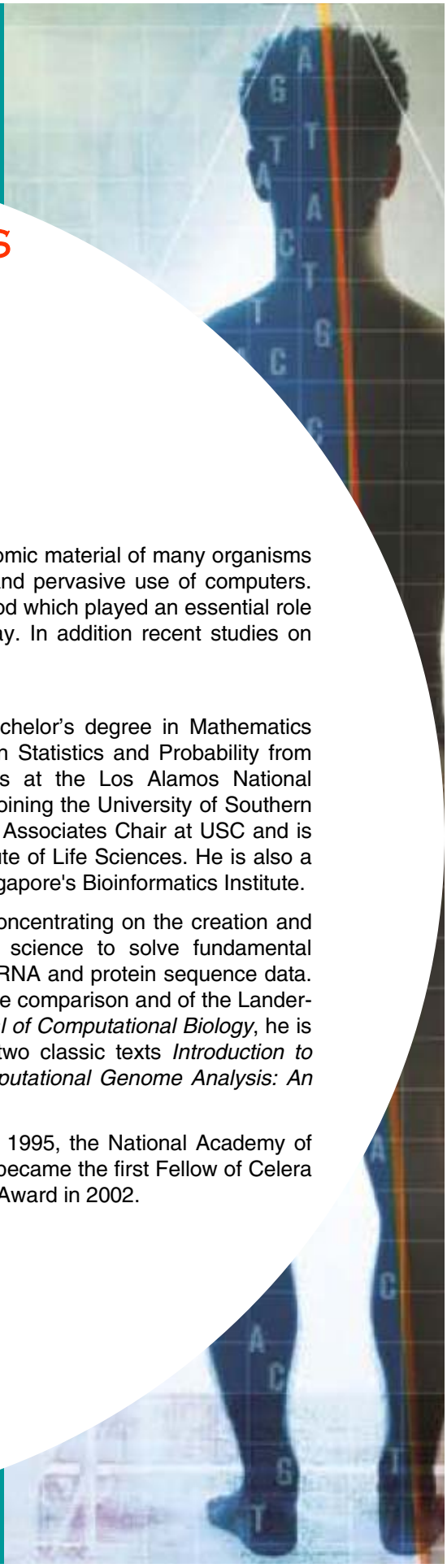
IMS Public Lecture



Computers and Genomes

Speaker: Professor Michael Waterman
University of Southern California
Date: Wednesday, 7 March 2007
Time: 6.30 pm - 7.30 pm
Venue: LT23, Faculty of Science
Block S10, 3 Science Drive 2
National University of Singapore
Singapore 117546

Abstract

The modern revolution on biology based on the decoding of the genomic material of many organisms including man would have been impossible without the extensive and pervasive use of computers. This lecture will describe and trace a computational theme and method which played an essential role in this revolution, and which continues to be extensively used today. In addition recent studies on human genome variation including race will be described.

About the Speaker

Professor Michael Waterman received his bachelor's degree in Mathematics from Oregon State University and his Ph.D. in Statistics and Probability from Michigan State University. He held positions at the Los Alamos National Laboratory and Idaho State University before joining the University of Southern California in 1982. He now holds an Endowed Associates Chair at USC and is Professor-at-large at the Keck Graduate Institute of Life Sciences. He is also a member of the Scientific Advisory Board of Singapore's Bioinformatics Institute.

Professor Waterman works in the area of Computational Biology, concentrating on the creation and application of methods in mathematics, statistics and computer science to solve fundamental problems in molecular biology, particularly those arising from DNA, RNA and protein sequence data. He is the co-developer of the Smith-Waterman algorithm for sequence comparison and of the Lander-Waterman formula for physical mapping. A founding editor of *Journal of Computational Biology*, he is on the editorial board of seven journals, and is co-author of the two classic texts *Introduction to Computational Biology: Maps, Sequences and Genomes* and *Computational Genome Analysis: An Introduction*.

He was elected to the American Academy of Arts and Sciences in 1995, the National Academy of Sciences in 2001 and the French Academy of Sciences in 2005. He became the first Fellow of Celera Genomics in 2000 and received a Gairdner Foundation International Award in 2002.

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