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**School of Mathematical
and Statistical Sciences**

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Presents

Professor Michael Waterman

Departments of Mathematics, Biological Sciences and Computer Science
University of Southern California



Dr. Waterman will be speaking on:

**Eulerian Paths and Reading DNA Sequences:
18th Century Mathematics for 21st Century Technology**

With the discovery of the double helix in 1953, it became clear that determining DNA sequences was an important goal. The Sanger method was invented in 1975 and by 2001 refinements of that method allowed sequencing of the human genome. Today an exciting new generation of sequencing methods is rapidly increasing the speed of DNA sequencing. This lecture will consider the mathematical and computational challenges of sequencing DNA.

Wednesday, March 18, 2009

Reception— 2:45 –3:45 PM at the Farmer Building Atrium

Talk—4:00-5:00 PM, Education Lecture Hall—located north of Gammage Pkwy

Michael Waterman is University Professor, USC Associates Chair in Natural Sciences, and Professor of Biological Sciences, Mathematics and Computer Science at the University of Southern California (USC). He came to USC in 1982 after positions at Los Alamos National Laboratory and Idaho State University. He holds a bachelors degree in Mathematics from Oregon State University and a Ph.D. in Statistics and Probability from Michigan State University. Prof. Waterman was named a Guggenheim Fellow (1995), was elected to the [American Academy of Art and Sciences](#) (1995), and to the [National Academy of Sciences](#) (2001). Also he is a Fellow of the American Association for the Advancement of Science and of the [Institute of Mathematical Statistics](#). He has held visiting positions at the University of Hawaii (1979-80), the University of California at San Francisco (1982), Mt. Sinai Medical School (1988), Chalmers University (2000), and in 2000-2001 he held the Aisenstadt Chair at University of Montreal. In fall 2000 he became the first [Fellow of Celera Genomics](#). In 2002 he received a [Gairdner Foundation International Award](#) and in 2005 he was elected to the [French Académie des Sciences](#).

Beginning May 2008, in addition to his USC appointment, Michael Waterman became Chair Professor at [Tsinghua University](#) in Beijing. He leads [a team](#) of distinguished scientists consisting of Michael Zhang (Cold Spring Harbor Labs), Wing Wong (Stanford), Jun Liu (Harvard), Tao Jiang (UC Riverside) and Fengzhu Sun (USC). The team will collectively work to enhance Tsinghua's programs in bioinformatics and computational biology.

Professor Waterman works in the area of [Computational Biology](#), concentrating on the creation and application of mathematics, statistics and computer science to molecular biology, particularly to 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. He is a founding editor of [Journal of Computational Biology](#), is on the editorial board of seven journals, and is co-author of the texts [Computational Genome Analysis: An Introduction](#) and [Introduction to Computational Biology: Maps, Sequences and Genomes](#).