Uncovering Genome Architecture

William Noble

Professor, Department of Genome Sciences Professor, Department of Computer Science

CURRENT RESEARCH

Using 3-D chromosomal organization to understand the functions of DNA

Dr. William Noble develops and applies computer algorithms to help biologists make sense out of large collections of molecular biology data. Dr William Noble, Professor of Genome Sciences at the University of Washington is conducting his research in many collaborative ways. His lab acts as the glue between theoreticians and applied scientists. As such, Noble's role is often to identify problems in one domain that can be solved by solutions from another domain. Essentially, all of the lab's projects involve multiple labs working together.

- Primary methods of research include the field of machine learning, in which patterns identified in one set of data are used to identify similar patterns in other, novel data sets.
- Several current projects in the lab focus on inferring the 3D structure of DNA in the nucleus of the cell, and understanding how that structure relates to functional processes like gene expression.
- In collaboration with experimental biologists, Dr. Noble has characterized the three-dimensional structure of the genome of Plasmodium falciparum, the parasite responsible for the most lethal form of malaria. The group is investigating how that structure affects gene expression in the parasite.
- They are currently researching methods for understanding the function of different regions of the human genome by integrating massive and heterogeneous collections of DNA sequencing data. Dr. Noble and his team are developing methods for identifying the protein sequences responsible for generating observed...

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AFFILIATION

University of Washington

EDUCATION

- Ph.D. in Computer Science, 1994 , University of California, San Diego
- B.S. in Symbolic Systems, 1991 , Stanford University

RESEARCH AREAS

Life Science, Genomics / Congenital

FUNDING REQUEST

Your contributions will help Dr. William achieve his goal to develop powerful new machine learning methods enabling him to apply those methods to make scientific discoveries about fundamental molecular biology. Dr. William aims to create the best possible use of all available data to help us to understand how cells work, in health and disease.