**Bioinformatics & Computational Biology and Computer Science**



**About the Speaker:**

Dr. Moore was an Ingram Associate Professor of Cancer Research and a member of the Center for Human Genetics Research at Vanderbilt University before joining the faculty at The Geisel School of Medicine at Dartmouth in 2004. He was elected a Fellow of the American Association for the Advancement of Science (AAAS) in 2012. He serves as Editor-in-Chief of the journal BioData Mining.

**Bioinformatics and Computational Biology**

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**Joint Colloquium Talk**

"Computational Intelligence Approaches to Human Genetics"

by

Jason Moore, PhD

Professor of Genetics

Dartmouth College

Friday, September 13 at 11 am

Fuller Labs 320

Given infinite time, humans would progress through modeling complex data in a manner that is dependent on prior knowledge of their domain, computer science and statistics as well as their prior experience working with other data. For example, a human modeler interested in identifying genetic risk factors for type II diabetes might start by examining insulin metabolism genes. We will review extensions and enhancements to an artificial intelligence-based computational evolution system (CES) that has the ultimate objective of tinkering with data as a human would. The key to the CES system is the ability to identify and exploit expert knowledge from biological databases or prior analytical results. Our prior studies have demonstrated that CES is capable of efficiently navigating large and rugged fitness landscapes toward the discovery of biologically meaningful genetic models of disease predisposition.