The University of Chicago has started a Computational and Applied Mathematics Initiative (CAMI), housed within the Department of Statistics. The initiative is motivated by an increasing interest in analyzing and modeling high dimensional data, both static and dynamic, and handling very large data sets in multiple scientific domains, which has led to an increased flow of ideas between applied mathematics, statistics and computation. A synergy is emerging among fields such as statistical modeling of high dimensional data, parameter estimation, optimization, machine learning, dynamical systems, and numerical analysis.

We invite prospective students interested in computational and applied mathematics with a data analytic flavor to apply to our Statistics graduate programs:

http://www.stat.uchicago.edu/admissions/

Applicants should indicate their interest in CAMI in their statement.

The CAMI faculty research interests include: bioinformatics, computational neuroscience, environmental and spatial statistics, machine learning, mathematical finance and econometrics, Monte Carlo methods, numerical linear/ multilinear algebra, optimization, and pattern recognition.

The University of Chicago has had a tradition in applied and computational mathematics education (past faculty and students include George Birkhoff, Fisher Black, Alberto Calderon, Robert Floyd, Herman Goldstine, Richard Hamming, Alston Householder, Tjalling Koopmans, Martin Kruskal, Harry Markowitz, Nicolas Metropolis, and Albert Tucker). The CAMI represents part of the University’s long-term goal of building on this tradition.

Faculty Research Domains

CORE DOMAINS

Mathematical Statistics:
John Lafferty, Peter McCullagh, Debashis Mondal, Michael Stein, Stephen Stigler, Mei Wang, Wei-Biao Wu

Probability:
Jian Ding, Steve Lalley, Greg Lawler

Scientific Computation:
Mihai Anitescu, Lek-Heng Lim, Ronald Thisted, Jonathan Weare

Statistical Methodology:
John Lafferty, Peter McCullagh, Mary Sara McPeek, Debashis Mondal, Per Mykland, Dan Nicolae, Michael Stein, Matthew Stephens, Stephen Stigler, Wei-Biao Wu

INTERDISCIPLINARY DOMAINS

Biostatistics:
Ronald Thisted

Computational Chemistry:
Jonathan Weare

Computational Neuroscience:
Yali Amit, Nicolas Brunel

Environmental and Spatial Statistics:
Mihai Anitescu, Debashis Mondal, Michael Stein, Mei Wang

Machine Learning and Pattern Recognition:
Yali Amit, Risi Kondor, John Lafferty, Lek-Heng Lim

Mathematical Finance and Econometrics:
Lars Hansen, Per Mykland, Wei-Biao Wu

Statistics and Genetics:
Mary Sara McPeek, Dan Nicolae, John Reinitz, Matthew Stephens