

The Committee on Computational and Applied Mathematics

Committee website: <http://www.stat.uchicago.edu/ccam/program.shtml>

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The Program

The use of computational, mathematical and statistical modeling in various areas of science has increased dramatically in recent years, triggered by massive increases in computing power and data acquisition. Mechanistic models for physical problems that reflect underlying physical laws are being combined with data-driven approaches in which statistical inference and optimization play key roles. These developments are transforming research agendas throughout statistics and applied mathematics, and are impacting a broad range of scientific disciplines.

A critical need now exists to train the next generation of computational and applied mathematicians to confront data-centric problems in the natural and social sciences. In response to these developments, the Committee on Computational and Applied Mathematics has been formed to provide graduate training in Computational and Applied Mathematics that reflects both the scientific demands and the unique strengths of the University of Chicago faculty across the Division of the Physical Sciences, including the recent hiring of several new faculty under a Computational and Applied Mathematics Initiative (CAMI).

Admissions

The program will admit a small number of exceptionally qualified students. Each student will be assigned to a member of the steering committee to plan and approve a course of study.

Thesis Committee

By the end of their second year, students will choose a thesis advisor from CCAM and two additional thesis committee members. A student may propose an advisor who is not a member of CCAM, with approval of the steering committee, in which case the additional members of the thesis committee will be from CCAM.

Course Requirements

The course requirements of the Ph.D. in Computational and Applied Mathematics are fairly low, consistent with the goal of involving students in original research early in their graduate careers. Together with an assigned course advisor, students select classes from core areas and a diverse set of possible elective tracks involving mathematics, statistics, computer science, and applications. The CAM core requirements include 1-quarter courses in optimization, stochastic processes, machine learning, computation, applied analysis and partial differential equations, typically completed in the first year of the program. Students are also expected to take at least one graduate level course in a scientific domain.

For more details on this new program, see <http://www.stat.uchicago.edu/ccam/program.shtml>



Font Notice

This document should contain certain fonts with restrictive licenses. For this draft, substitutions were made using less legally restrictive fonts. Specifically:

Times was used instead of Trajan.

Times was used instead of Palatino.

The editor may contact Leepfrog for a draft with the correct fonts in place.