CENTER FOR NONLINEAR ANALYSIS

The CNA provides an environment to enhance and coordinate research and training in applied analysis, including partial differential equations, calculus of variations, numerical analysis and scientific computation. It advances research and educational opportunities at the broad interface between mathematics and physical sciences and engineering. The CNA fosters networks and collaborations within CMU and with US and international institutions.

RANKINGS

U.S. News & World Report

#16 | ***Applied Mathematics***

#7 | ***Discrete Mathematics and Combinatorics***

#6 | ***Best Graduate Schools for Logic***

Quantnet

#4 | ***Best Financial Engineering Programs***

DOCTOR OF PHILOSOPHY IN ALGORITHMS, COMBINATORICS, AND OPTIMIZATION

Carnegie Mellon University offers an interdisciplinary Ph.D program in Algorithms, Combinatorics, and Optimization. This program is the first of its kind in the United States. It is administered jointly by the Tepper School of Business (Operations Research group), the Computer Science Department (Algorithms and Complexity group), and the Department of Mathematical Sciences (Discrete Mathematics group).

CONTACT

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Pittsburgh, PA 15213
412.268.2545

Tom Bohman
Department Head & Professor
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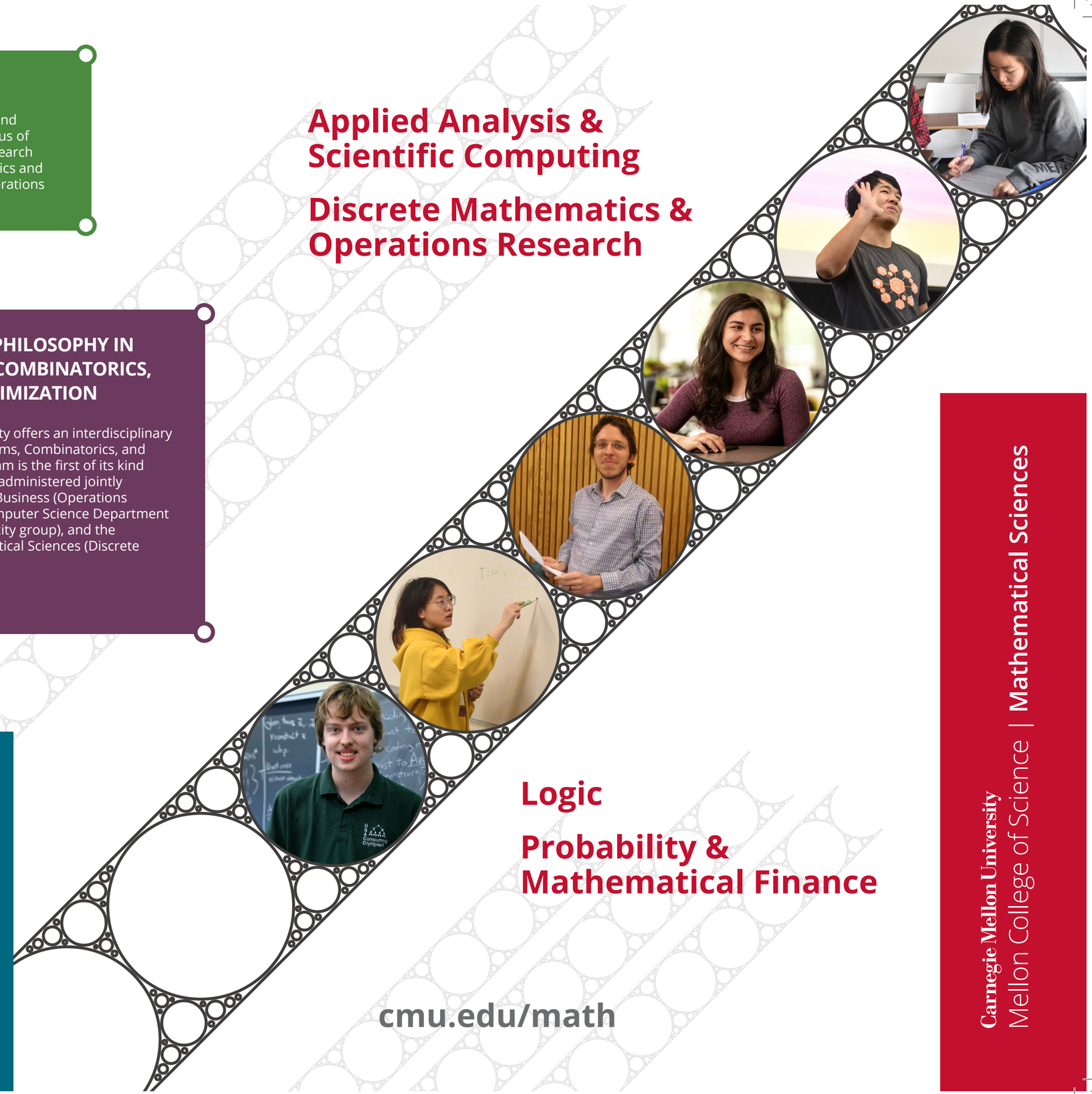
Applied Analysis & Scientific Computing

Discrete Mathematics & Operations Research



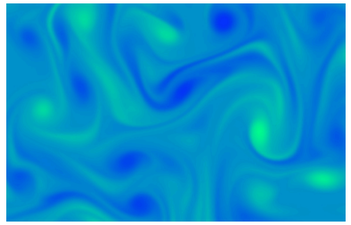
Logic

Probability & Mathematical Finance

cmu.edu/math

Carnegie Mellon University
Mellon College of Science | **Mathematical Sciences**

RESEARCH AREAS



APPLIED ANALYSIS AND SCIENTIFIC COMPUTING

Calculus of variations, Computational Mathematics, Numerical Analysis, Partial Differential Equations with applications in:

Data Science | Fluid Dynamics | Imaging | Kinetic Theory | Materials Science

IRENE FONSECA
Kavčič-Moura University Professor of Mathematics, Director of Center for Nonlinear Analysis

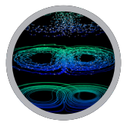
WILLIAM J. HRUSA
Professor, Associate Department Head

GAUTAM IYER
Associate Professor

DAVID KINDERLEHRER
Alumni Professor of Mathematical Sciences, Professor of Materials Science and Engineering

GIOVANNI LEONI
Professor

ROBERT PEGO
Professor



HAYDEN SCHAEFFER
Assistant Professor

JACK SCHAEFFER
Professor

DEJAN SLEPČEV
Professor, Associate Director of Center for Nonlinear Analysis, Director of Graduate Studies

SHLOMO TA'ASAN
Professor

IAN TICE
Associate Professor

NOEL WALKINGTON
Professor

FRANZISKA WEBER
Assistant Professor

DISCRETE MATHEMATICS AND OPERATIONS RESEARCH

Extremal combinatorics, Probabilistic method, Random Graphs and Randomized Algorithms, Ramsey theory, Topological methods in combinatorics

TOM BOHMAN
Alexander M. Knaster Professor, Department Head

BORIS BUKH
Associate Professor

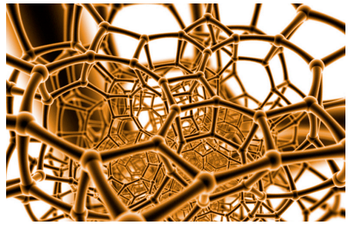
GÉRARD CORNUÉJOLS
IBM University Professor of Operations Research

FLORIAN FRICK
Assistant Professor

ALAN FRIEZE
University Professor

PO-SHEN LOH
Associate Professor

WESLEY PEGDEN
Associate Professor



LOGIC

Lambda-calculus and combinatory logic, Model theory, Semantics of programming languages, Descriptive set theory, Large cardinals, forcing and inner models, Type theory

CLINTON CONLEY
Associate Professor

JAMES CUMMINGS
Professor

RAMI GROSSBERG
Professor

ERNEST SCHIMMERLING
Professor

RICHARD STATMAN
Professor

PROBABILITY AND MATHEMATICAL FINANCE

Diffusion approximations of queueing systems, Homogenization, Mathematical theory of finance, Stochastic control, Stochastic differential equations, Viscosity solutions of Hamilton-Jacobi-Bellman equations

YU GU
Assistant Professor

GAUTAM IYER
Associate Professor

DMITRY KRAMKOV
Mellon College of Science Professor of Mathematical Finance, Director of Center for Computational Finance

MARTIN LARSSON
Associate Professor

JOHN P. LEHOCZKY
Professor of Statistics and Mathematics

JOHANNES MUHLE-KARBE
Associate Professor

AGOSTON PISZTORA
Associate Professor

STEVEN E. SHREVE
Orion Hoch University Professor of Mathematical Sciences

TOMASZ TKOCZ
Assistant Professor

CARNEGIE MELLON UNIVERSITY

The only top 25 university founded in the 20th century, Carnegie Mellon University has rapidly evolved into an internationally recognized institution with a distinctive mix of world-class educational and research programs. More than 8,000 undergraduate and graduate students enjoy exceptional opportunities for innovation and interdisciplinary research toward finding meaningful solutions to significant problems of society.

PITTSBURGH

Pittsburgh ranks in the top 10 on lists for liveability, jobs, and affordability, including ranking among the top 10 U.S. cities for millennials. The New York Times calls Pittsburgh "a tech hub." Excellence in education, healthcare, culture and environment lead to a #2 ranking in the U.S. by the Economist Intelligence Unit's report.