

# ILLINOIS TECH

## Applied Mathematics

### Letter from the Chair



Greetings,

Welcome to the reinvigorated newsletter from Illinois Institute of Technology's Department of Applied Mathematics. We are excited to share the latest news and features from the department with our alumni and friends. One of the biggest changes at the department is that we have joined Illinois Tech's new College of Computing as of June 2020. The new college will enhance continuing efforts to discover new mathematical methods that create solutions for real-world problems in the areas of stochastics, computational mathematics, applied analysis and modeling, data science, discrete mathematics, and statistics. Currently, the faculty

has 13 active grants totaling \$2.3 million in funding.

Our programs and research opportunities are attracting a growing student body:

- 67 undergraduates are enrolled, compared to 42 in 2017
- 23 students in our Ph.D. program, up from 18 in 2017
- 91 students are enrolled in our popular Master of Data Science program co-hosted with the Computer Science department

We hope you enjoy catching up with the department's news, and you can expect to hear from us each semester as we aim to keep you updated with the compelling developments from the Department of Applied Mathematics.

Chun Liu  
Chair, Department of Applied Mathematics  
Illinois Institute of Technology

### Student Highlights

#### **New Open-Source Software Library Puts Advanced Math Methods Within Global Reach**

By teaming up an alumnus with a current student, Professor of Applied Mathematics Fred Hickernell got the help he needed to develop a software library to make advanced mathematical methods more available to researchers and industries across the globe.

[Read the Article](#)

#### **Chance Encounter Leads Applied Math Student to Award-Winning Research Collaboration**

A chance encounter at an academic conference initiated a new research collaboration, a grant award, opportunities to learn from academics across the globe—and an Interdisciplinary Opportunity Award from the Center for Multiscale Cell Fate Research for an Illinois Institute of Technology student and his team.

[Read the Article](#)

# Faculty News



[Alan Turing Institute Workshop Co-Organized by Illinois Tech Faculty Members](#)

[Petrović Helps Launch Algebraic Statistics Journal](#)

[New Initiative Aims to Apply Computation and Data Science Research Toward Positive Societal Change](#)

Check Out More Faculty Highlights

## Research Studies

### [Allocation of Resources Through Coloring and Counting](#)

*Conflict-free allocation of limited resources is a fundamental problem in applied mathematics that is naturally studied under Graph Theory, a field of expertise here at Illinois Tech.*

### [Shrinking Instability and Self-Similarity Discovered](#)

*Research conducted in pattern formation by Shuwang Li, professor of applied mathematics at Illinois Institute of Technology, aims to illuminate the puzzles of growth and form in nature.*

### [Variational Inference: A Bridge Between Applied Mathematics and Machine Learning](#)

*A research collaboration with several colleagues in the Department of Applied Mathematics at Illinois Institute of Technology bridges a gap between applied mathematics and machine learning by developing a new variational inference framework.*

## Alumni Spotlights

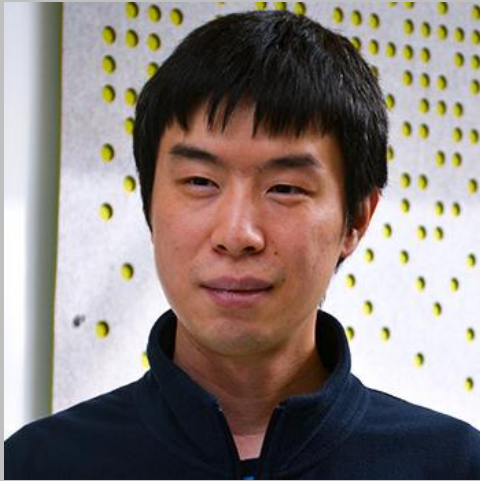


Arika Ho, M.A.S. DSC '21  
Experience Analyst



Weston Sterchi, MATH/M.A.S. MMF '21  
Actuarial Analyst, Segal

**Realizing the Power of Data**



*Tao Chen, MMF '12/Ph.D. AMAT '16*  
**Visiting Assistant Professor, UC-Santa  
Barbara**

**An Academic Path**

**Skilled for Success**



*Mike McCourt, AMAT '07*  
**Head of Engineering, SigOpt**

**Creating a Partnership with a Former  
Mentor**