Graduate Study in Mathematical Sciences

Our department has a mature graduate program with a proven track record of excellent scholarship and superb career placement. The Mathematical Sciences Department has approximately 30 graduate faculty members and 100 graduate students. Our faculty are actively conducting research in a wide array of sub-disciplines and include both outstanding scholars with an international reputation and award winning teachers. Students have the opportunity to take classes in a wide variety of subjects including applied mathematics, complex analysis, differential equations, differential geometry, functional analysis, group theory, mathematics education, matrix computations, number theory, numerical analysis, probability theory, ring theory, statistics, and topology. Small classes and a high degree of interaction with the research faculty promote a strong learning environment.

Graduate Degree Offerings

The Department of Mathematical Sciences offers a program of instruction and research leading to the Master of Science, Master of Science in Teaching, Master of Science in Statistics and Probability, and Doctor of Philosophy.

The Master of Science degree in Mathematics offers specializations in Pure Mathematics, Mathematics Education, Applied Mathematics and Computational Mathematics. The Master of Science degree in Teaching is for licensed teachers seeking to enhance their professional knowledge of middle school mathematics education.

The Master of Science degree in Applied Probability and Statistics is offered through our Division of Statistics.

Financial Assistance

About half of our graduate students receive significant financial assistance. Fellowships and graduate teaching assistantships carry a full tuition-waiver scholarship. Experienced graduate students have the opportunity to teach a section of calculus with full responsibility and an enhanced stipend. In addition, the Graduate School offers assistantships and fellowships, some specifically designated for minorities and women in areas in which they are underrepresented.

Unique Applications Involvement Component

The design of our doctoral program recognizes the need for new Ph.D. recipients to be exposed to mathematics outside of the usual academic setting. For this reason our Ph.D. degree has a non-traditional Applications Involvement Component (AIC) where students work with an application (typically with a heavy computing component) of current mathematics in another academic discipline or industry.

The result is a perspective of the mathematical sciences as an integrated whole, with appropriate roles for both pure and applied mathematics. The required combination of course work, outside experience and research prepares graduates of our program to successfully pursue careers in both academic and non-academic venues.
Applications Involvement Component (Ph.D. program)

Typically a student’s AIC has three parts. In the first, doctoral students attend the AIC colloquia where external speakers present accounts of how mathematics is used outside of mathematics departments. These speakers come from industry, government, and education, and are chosen to present a diverse collection of case studies and viewpoints.

For the second part of the AIC experience the student undertakes an internship in industry, government, or education, typically during the summer semester. For the third part, the student writes a report and gives a presentation about her/his experience and research results obtained in the internship.

Some of the organizations where interns have been placed are:

- Abbott Research Laboratory
- Ames Research Laboratory
- AT&T Bell Labs (Murray Hill, New Jersey)
- Boeing Computer Services
- Neurology Department
- DeKalb Genetics
- General Motors
- Inte Q
- Motorola
- Numerical Algorithms Group
- Toshiba Medical Research
- United Technologies
- Wolfram Research
- Allied Signal
- Argonne National Laboratory
- Baxter International
- Chicago University Hospital
- Cray Research Corporation
- General Electric
- IBM (Watson Research Center)
- Intelligent Medical Object
- NASA (Langely)
- Oak Ridge National Laboratory
- United Aircraft
- Woodward Governor
- Wright Patterson Air Force Laboratory

The AIC internship is normally a paid internship; it often leads to an attractive job offer for the student.

Career Placement

Our graduates can be found at four-year colleges and universities, community colleges and working in industry.

The initial career placement of our recent Ph.D. recipients include:

- Univ. of Alberta, Edmonton (PIMS Fellowship)
- Kishwaukee College, Malta, IL
- Muhlenberg College, Allentown, PA
- Prairie State College, Chicago Heights, IL
- Piedmont Community College, Roxboro, NC
- Abbot Laboratories, Chicago, IL
- Nokia Corporation, Chicago, IL
- St. Francis University, Joliet, IL
- Rock Valley College, Rockford, IL
- Allstate Corporation, Northbrook, IL
- Carroll University, Waukesha, WI
- Bradley University, Peoria, IL
- College of DuPage, Chicago, IL
- Wayne State University, Detroit, MI
- Grand View University, Des Moines, IA
- Orange County Community College, SUNY
- Mississippi University for Women
- North Central College, Naperville, IL
- Georgia Southern University, Statesboro, GA
- HERE (Nokia), Chicago, IL