Columbia Math Open House

Spring 2021



Math Spring Open House



Slido rooms

- Majors & Concentration in Mathematics > Mu
- Major in Computer Science-Mathematics
- Majors in Economics-Mathematics or Mathematics-Statistics
 - Barnard Mathematics Majors and Minor
 - Calculus and Linear Algebra
 - Undergraduate Math Society >>

- Mu-Tao Wang
- Chiu-Chu Melissa Liu
- Julien Dubedat
- Daniela De Silva
- > George Dragomir
 - Anda Tenie



- **Major in Mathematics**
- **Major in Applied Mathematics**
- **Major in Computer Science Mathematics**
- **Major in Economics Mathematics**
- **Major in Mathematics Statistics**
- **Concentration in Mathematics**

Most majors require 13-15 points (including AP credit) in the Calculus and Linear Algebra sequence.



Concentration in Mathematics

Requires at least 12 additional points from any of the courses offered by the department numbered 2000 or higher.

COLUMBIA UNIVERSITY CITY OF NEW YORK



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Major in Mathematics

Key math subfields at Columbia

- Number theory
- Analysis
- Topology
- Geometry (differential and algebraic)
- Representation theory
- Probability

The Department funds a summer research program for Barnard and Columbia undergraduates, mostly for rising juniors and seniors (independent of U.S. residency) Research Experiences for Undergraduates at many universities are funded by the National Science Foundation (for U.S. citizens or permanent residents only)

A valuable experience for students interested in pursuing a graduate degree in mathematics





Joint Majors in Mathematics



Joint Majors in Mathematics



COLUMBIA UNIVERSITY

Joint Majors in Mathematics



Barnard Mathematics

Major in Mathematics

Major in Applied Mathematics

Major in Mathematics-Statistics

Major in Mathematics-Computer Science

Major in Economics and Mathematics

- 14-15 courses, similar to the requirements for the corresponding majors at Columbia.
- Flexibility in choosing advanced mathematics and cognate courses, in consultation with their advisers (some courses may require prior approval from the Chair of the Mathematics Department).
- The Undergraduate Seminar in Mathematics fulfills the Barnard capstone requirement and can be double counted as a major elective.

Major in Mathematical Sciences

14 courses: six from Mathematics, five from a combination of Statistics and Computer Science, and three electives from a combination of Mathematics, Statistics, Computer Science.

The *Capstone Experience* can be fulfilled by a significant thesis written under the supervision of faculty of any one of the three departments or by the Undergraduate Seminar in Mathematics.

Minor in Mathematical Sciences

6 courses: at least two from Mathematics and one from each of Statistics and Computer Science. There should be a minimum of three courses in Statistics and Computer Science.

Resources

Help Rooms

Barnard Help Room

- College Algebra/Analytic Geometry
- Calculus I, II and III

Columbia Help Room

- Calculus IV, Linear Algebra, ODE
- All upper-level mathematics courses

Barnard and Columbia undergraduates can apply to become a Teaching Assistant in Mathematics.

Tutoring Services

CC and SEAS: Tutoring is available through the <u>Berrick</u> <u>Center for Student Advising</u> for Calculus I, II, and III. **Barnard:** Small group peer tutoring is available though the <u>Peer-to-Peer Learning</u> program.

GS: One-on-one, small group, and drop-in tutoring is available via the <u>Academic</u> <u>Resource Center</u>.



Opportunities

Undergraduate Research

Columbia Math Undergraduate Summer Research Program. A 10-week paid summer research program, where participating students work closely with faculty members and graduate students in a small group setting.

Research Experiences for Undergraduates (NSF) 8-10 week summer research programs for undergraduate students held at other institutions <u>http://www.ams.org/reu</u>

Undergraduate Workshops

Columbia Undergraduate Math Modelling Workshop Consists of a series of lectures and hands-on seminars led by faculty, postdocs and graduate students and also serves as preparation for the Mathematical Contest in Modelling (MCM) international competition.

Prizes and Awards

Putnam Exam (nationwide competition) Each year, a faculty member conducts coaching sessions for students who are interested in competing.

Columbia College Prizes

- The Professor Van Amringe Mathematics Prize - awarded to a first year, a sophomore, and a junior student
- The John Dash Van Buren, Jr. Prize in Mathematics - awarded to a senior student in the College

Barnard College Prizes

- Margaret Kenney Jensen Prize
 - awarded to first year students, sophomores, and juniors
- *Khon Mathematical Prize* awarded to a senior student at Barnard

Undergraduate Initiatives

Columbia Association for Women in Mathematics

https://www.columbiaawm.com

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The Association for Women in Mathematics Columbia Chapter is a pre-professional society whose mission is to encourage women and girls to study and to have active careers in the mathematical sciences, and to promote equal opportunity for and the equal treatment of women and girls in the mathematical sciences. We connect students and professors interested in mathematics at Columbia University and Barnard College together and encourage women's participation in STEM.

COLUMBIA UNIVERSITY

Columbia Undergraduate Math Society

Sign up for emails at http://www.math.columbia.edu/~ums/

Undergraduate Math Society Seminars

Weekly seminar talks, run year-round. The talks have the purpose of exposing members to different topics or areas of research in mathematics that they might not otherwise encounter in class. The lectures should be accessible to all students studying mathematics or pursuing math-related majors. Everyone is welcome!

Proof Writing Workshop

A 4-week workshop run each fall, by undergraduates for undergraduates, is a great opportunity to get more familiar with how to go about writing proofs. The lessons will have a mix of lectures and exercises to try in small groups with help of the TAs, so you'll get lots of practice and constructive advice.

Undergraduate Town Hall

Organized together with the math DEI committee, for Barnard and Columbia undergraduates to share their perspectives, experiences and ideas on diversity, equity and inclusion in mathematics.

Contacts

Barnard Mathematics

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Columbia Mathematics

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 - Academic Coordinator \succ Ms. Shatieyce Bayley
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 - Economics Mathematics Adviser > Prof. Julien Dubedat
 - Mathematics Statistics Adviser > Prof. Julien Dubedat
 - Undergraduate Math Society >

- Calculus Director \succ Prof. George Dragomir

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