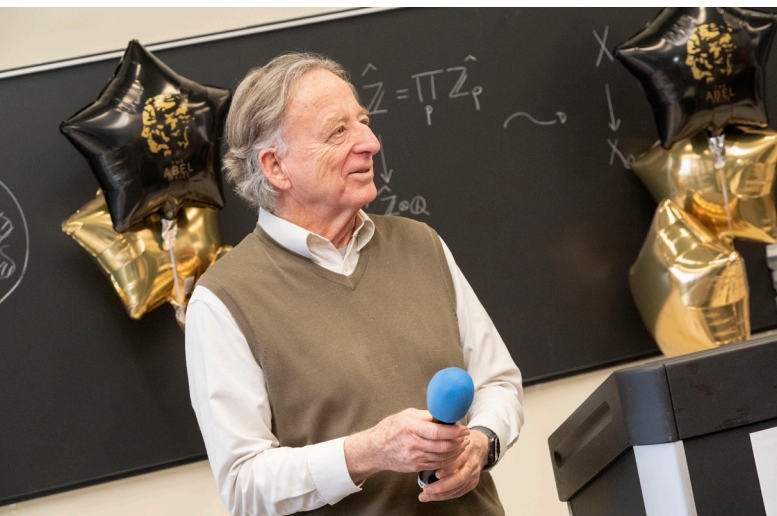# Mathematics

The Stony Brook Department of Mathematics unites internationally acclaimed research in pure mathematics with a deep commitment to undergraduate and graduate education. The Department is closely associated with the Institute for Mathematical Sciences, founded in 1989, and shares faculty and activities with the Simons Center for Geometry and Physics.

Stony Brook is renowned worldwide for its strength in geometry of all flavors, algebraic topology, dynamics, real and complex analysis, as well as application to mathematical physics and other areas of mathematics. Our faculty includes winners of the most distinguished prizes in mathematics, including the Fields Medal, the Abel prize, the Wolf prize, the Breakthrough prize, the National Medal of Science, and many others. Many early career faculty are quickly making their mark in the field. We are celebrated for our open and collaborative research atmosphere, and our many workshops, conferences, and short- and long-term visitors, both within the Department and in collaboration with the Simons Center for Geometry and Physics.

Our faculty are also involved in many other areas of research, including dynamical systems, analysis and algebraic geometry. Dynamics is concerned with studying how physical systems evolve over time. It has led to developments such as chaos theory and the discovery of fractals. It is one of the main fields of interest at the Institute of Mathematical Sciences. Analysis is used to understand things such as the behavior of a tiny particle suspended in a fluid: this is called Brownian motion. Algebraic geometry has been applied to devise efficient systems for encoding information in such a way that noise and errors can be eliminated.

Stony Brook University
College *of* Arts and Sciences

The Department offers a Bachelor of Science degree, as well as a mathematics minor. Many undergraduates choose a double major combining study in our Department with another one. Some students from our program have gone on to graduate study at highly respected intitutions around the world, while others have gone on to careers in diverse fields including finance, education, law and others.

We have a very active undergraduate Math Club which meets most Thursday evenings. They often have guest speakers about various math topics and other social events (like trips to the National Museum of Mathematics), but also have service events, like providing study help for students. Our undergraduates are always competitive on the Putnam exam and are offered opportunities to attend events such as the Mathematical Association of America's MathFest. Interested undergraduates also participate in the Directed Reading Program, which allows undergraduates to explore advanced mathematical topics through individually-focused pairings with a graduate student mentor, or they can pursue further research by taking part in the Summer Math REU.

Our BS degree has an option leading to initial certification for secondary school teaching in New York State. We also offer a Master of Arts in Teaching degree, as well as a combined BS/MAT degree.
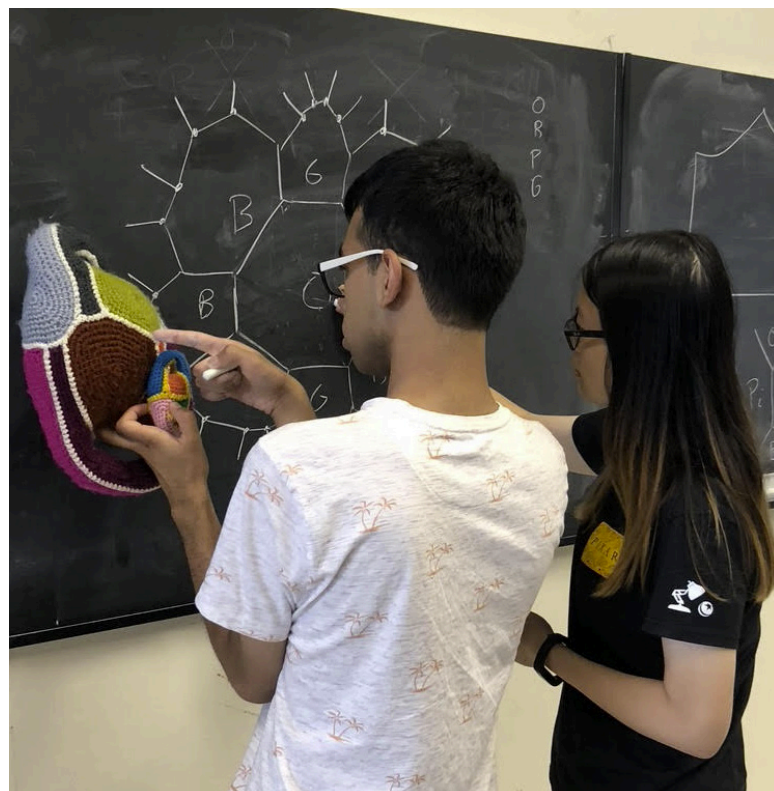
Our graduate program is also thriving. Thanks to generous funding from the Simons Foundation, funds from the National Science Foundation, the College of Arts and Sciences and the Graduate School, the majority of PhD students are supported as teaching fellows and have access to opportunities for travel to conferences and other activities that support their research. Both Masters and PhD students attend the many research seminars run in the Department each week.

We hope to have you among our newest students this fall!