

The background of the entire image is a complex fractal pattern, likely a Mandelbrot set, rendered in a color palette of blues, greens, yellows, and oranges. A solid blue horizontal band runs across the middle of the image, containing the text. The fractal pattern is most prominent in the top and bottom sections, showing intricate, self-similar structures.

UNDERGRADUATE PROGRAM

Department of MATHEMATICS



HOWARD
UNIVERSITY

The Department of Mathematics at Howard University was established in 1867, and offers courses leading to the degrees of Bachelor of Science, Master of Science and Doctor of Philosophy.

Our department, the leading producer of African-American graduates in mathematics, embraces the general mission and goals of both the university and the College of Arts and Sciences. Our department serves a dual role in the university — we provide every student with a solid foundation in the common core and we also provide majors with rigorous training in advanced mathematics, including graduate-level courses.

Our undergraduate mathematics majors have pursued advanced degrees at many prestigious institutions including Princeton University, University of Michigan, Brown University, Harvard University, RPI, MIT, Columbia University, Duke University and University of Maryland at College Park.

Our students have pursued professional degrees in law school, medical school, business school and other professional schools. Our undergraduate mathematics majors have also entered into careers such as politics, teaching, actuarial science, finance and government.

Our Program

Undergraduate Excellence

MAJORS

Mathematics major graduate as well-trained mathematicians capable of research, teaching and applying mathematical principles in industry.

CONCENTRATIONS

PURE MATHEMATICS

traditional course of study for students who wish to pursue higher degrees in mathematics.

APPLIED MATHEMATICS

both for student preparing for a career in government or industry as well as for students considering graduate work. Major are expected to minor in their field of application: computer science, economics, one of the natural sciences or other approved area.

ACTUARIAL SCIENCE

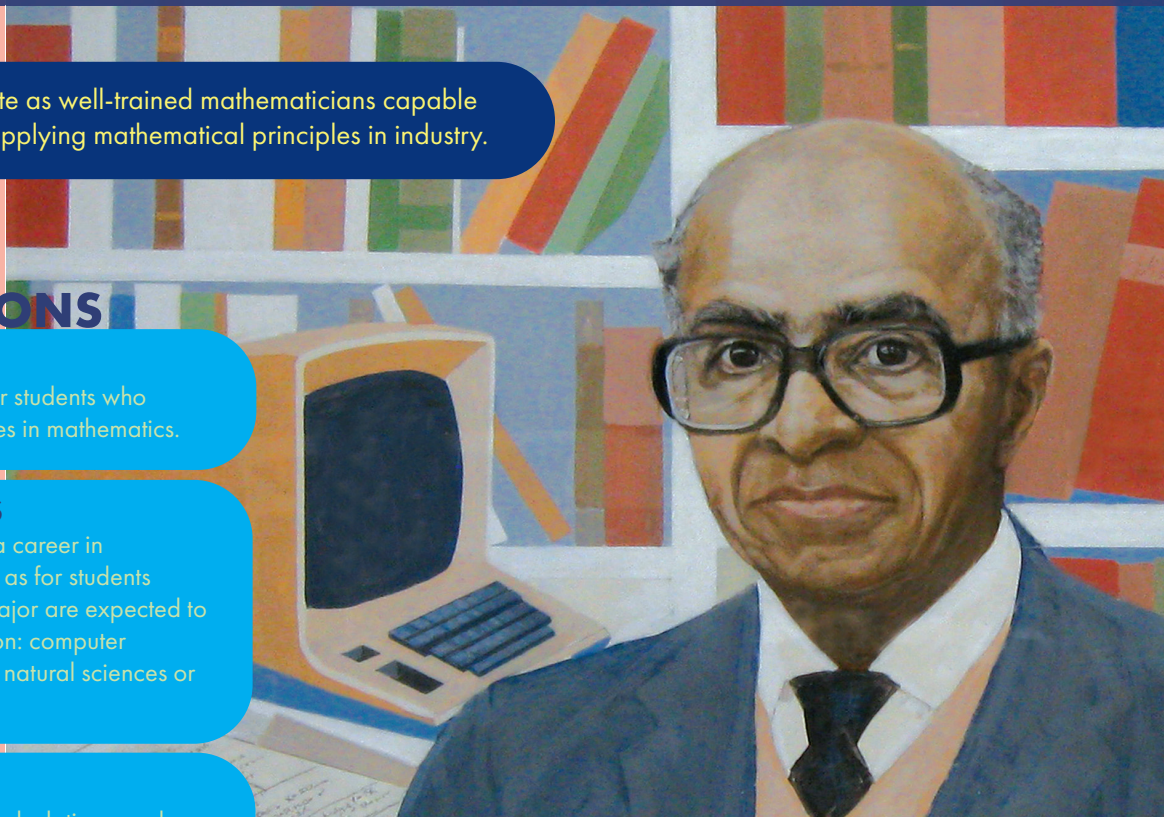
involves performing statistical calculations, such as premiums and risks, for the insurance industry.

MATH EDUCATION

for teaching mathematics at the elementary and secondary school levels

PRE-MED/PRE-DENTISTRY

students can major in mathematics and go on to medical school with all required courses following a 4-year plan.



David Harold Blackwell is one of the eponyms of the Rao–Blackwell theorem. He was the first African-American inducted into the National Academy of Sciences, and the first black tenured faculty member at the University of California, Berkeley.

At age 22, he earned his first Ph.D. in mathematics. In 1946, he became an associate professor at Howard University, and became head of the Mathematics Department the following year. He remained at Howard until 1954.

Blackwell was a pioneer in textbook writing. He wrote one of the first Bayesian textbooks, his 1969 *Basic Statistics*.

ACTIVITIES

UNDERGRADUATE RESEARCH

We provide every student with a solid foundation in the common core and we also provide majors with rigorous training in advanced mathematics, including graduate-level courses. Our department offers all mathematics majors research opportunities in both pure and applied mathematics. All mathematics majors are encouraged to participate in an Undergraduate Research Experience (REU).

CONFERENCE TRAVEL

The Department of Mathematics and the Office of the Dean of the College of Arts and Sciences provide travel funds for students attending mathematics conferences, workshops and meetings.

PI MU EPSILON

Pi Mu Epsilon is the mathematical honorary society, and Howard is the home of the oldest chapter in the District of Columbia. All eligible mathematics majors are invited to join.

MATHEMATICS CLUB

The Math Club provides opportunities for participation in national mathematics contests (such as the William Lowell Putnam Mathematical Competition and the Virginia Tech Regional Mathematics Contest) and opportunities for outreach activities in city schools. In collaboration with the Pi Mu Epsilon DC Alpha Chapter, the Mathematics Club organizes professional development activities for majors and minors.

DEPARTMENT SOCIALS

Social events for students include Students and Advisors Social, Annual Scholarship and Prizes Day, Games Night, Movies Night and the Commencement Luncheon.



Scholarships

Academic merit-based scholarships for mathematics majors at Howard University include the following endowed awards of the Department of Mathematics:

Butcher Award Cox Award Espelie Award Donaldson Prize

Chachere Award Bullock Award Shapiro Award

Please contact us for application and eligibility information.

COLLOQUIA & SEMINARS

All students are expected to participate in the weekly colloquium of the Department of Mathematics.

Students are also invited to attend any of the weekly seminar series in Topology, PDE and Analysis, Combinatorics, Complex Analysis, Geometry, Dynamical Systems or Mathematical Biology.

Curriculum

The language, structure, beauty and utility of mathematics are as important in the general education curriculum as they are for the curricula aimed at the minor and major in mathematics. Our goal is to equip graduates with the tools necessary to participate fully in a technological society and competitive global environment.

Faculty

The faculty at Howard are all dedicated to the mission of the university and make themselves available to students who need individual help. There are many opportunities to socialize with faculty members and other mathematics students through the welcoming parties, the colloquia and the Mathematics Club.

The faculty members of the Department of Mathematics are leading researchers in the following fields of pure and applied mathematics:

Algebraic geometry and topology
Approximations and expansions
Combinatorics
Difference equations
Dynamical systems
Harmonic analysis
Functional analysis
Functions of one complex variable
Functions of several complex variables
General topology
Differential geometry

Global analysis
Group theory
Algebra
Mathematical biology
Rings and Algebras
Ordinary differential equations
Partial differential equations
Probability theory
Statistics

CORE CLASSES

Proof and Problem Solving I
Proof and Problem Solving II
Calculus I
Calculus II
Calculus III
Linear Algebra
Introduction to Analysis
Introduction to Modern Algebra

For More Information

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The Department of Mathematics has a long and distinguished history, not only as an educational component of the university in the traditional sense, but as a leading force in the development of a culture of mathematics in the world community for African-Americans and for underrepresented groups in the mathematical sciences. The first three African-Americans to receive the Ph.D. degree in mathematics (Elbert Frank Cox, Dudley Weldon Woodard, and William Schieffelin Claytor) all served as long-term faculty members in our department. Dr. David H. Blackwell, the brilliant African-American mathematician and statistician extraordinaire, led Howard's Department of Mathematics in his role as chair of the department from 1947 to 1954. In 1975, under the aegis of Dr. James A. Donaldson, then chair of the department, a Ph.D. program in mathematics was established here at Howard.

We welcome you to the Howard family

