Georgia Tech College of Sciences
School of Biological Sciences

When Scientists Thrive, Science Flourishes

Experience doctoral programs that value both scientific rigor and researcher wellbeing, providing everything you need to transform biology and enjoy the journey.

Ph.D. Programs in:

- Applied Physiology
- Bioinformatics
- Biology
- Neuroscience & Neurotechnology
- Ocean Science & Engineering
- Quantitative Biosciences

What drives us as scientists?

In the heart of every researcher beats a question and relentless curiosity that refuses silence. In Biological Sciences at Georgia Tech, we don't just study life—we transform it. Your scientific ambition meets a scientific ecosystem designed for breakthrough discovery.

Who will you develop your potential with?

Our elite research environment connects brilliant minds with extraordinary resources. Work alongside leading scientists, publish in prestigious journals, and pioneer discoveries that redefine possibilities in biology.

How does interdisciplinary collaboration shape your journey?

Our program unites diverse sciences under the guidance of over 50 world-class faculty advisors. These thought leaders bring varied expertise to nurture scientific pioneers, enabling you to tackle complex problems that transcend traditional boundaries.

How do we strengthen your ideas?

Groundbreaking science flourishes when brilliant minds are liberated from financial worries. Our exceptional support package doesn't just sustain you, it empowers you to pursue your boldest research questions with confidence and freedom. When financial concerns fade into the background, your scientific imagination takes center stage—exactly where it belongs.

Where is your new scientific community thriving?

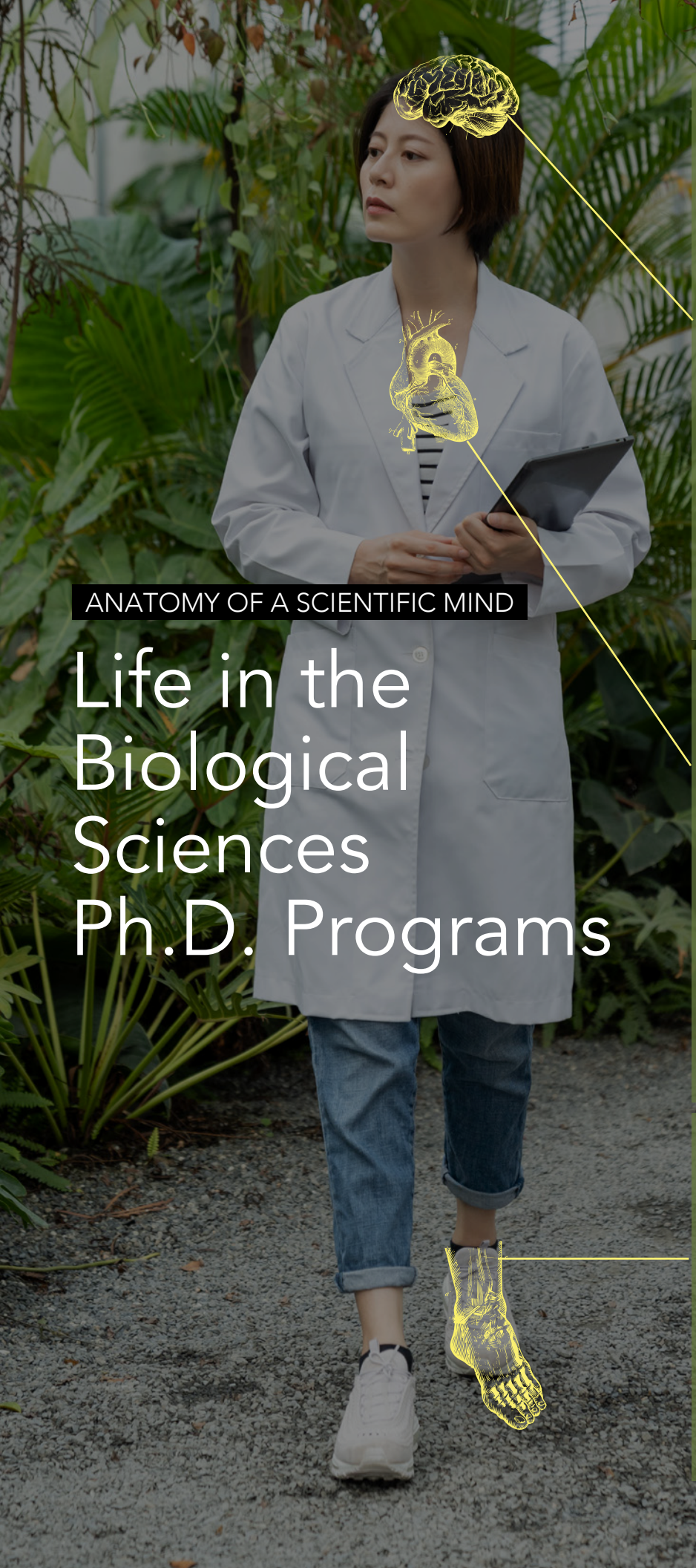
In the heart of Atlanta, our vibrant campus offers a dynamic scientific ecosystem for innovation with rich cultural experiences and diverse scientific connections. Your collaborative spirit finds its home in a place designed for both intellectual and personal growth.

What will your scientific legacy be?

This is where scientific minds bloom—where your growth is nurtured and your research impacts humanity's future. Discover a program where discovery fuels tomorrow's scientific breakthroughs.

Your path, our commitment.

Georgia Tech College of Sciences
School of
Biological Sciences



ANATOMY OF A SCIENTIFIC MIND

Life in the Biological Sciences Ph.D. Programs

SCIENTIFIC EXCELLENCE

Cutting-edge research
with world-class resources.

EXCEPTIONAL QUALITY OF LIFE

Balance, community, and the perfect environment for scientific minds to flourish.

COMPREHENSIVE FINANCIAL SUPPORT

Freedom to focus on what truly matters:
your research and discovery.

Research Innovation

- Interdisciplinary research across departments
- Pioneering discoveries spanning a wide range of biological disciplines from ecology and physiology to the cellular and molecular level
- 3-4 or more peer-reviewed publications during doctorate

Academic Prestige

- Top 10 U.S. public university
- Mentorship from leaders in a wide range of scientific fields
- Global collaborations with elite institutions

Research Resources

- State-of-the-art technology for cutting-edge research
- 12 research areas from molecular to computational
- Outstanding core facilities

Scientific Development

- Years 1-2: Coursework & lab rotations or opportunities to join labs right away; start of independent research
- Years 2-5: Independent research
- Supervise undergraduate researchers
- Presentations at an average of 4+ international conferences

Research Impact

- Publications in high-impact journals
- Patent & tech transfer opportunities
- Solutions to real biological challenges
- Strong foundation for scientific leadership

"Every other day, something happens that makes me happy I chose to go to Tech and not somewhere else: there are a lot of resources on campus, and a lot of people who really care."

Gretchen Johnson, Ph.D. student

Prime Location & Connectivity

- Campus in the heart of Atlanta
- Walkable and bike-friendly area
- Highest percentage of urban tree canopy
- 20-minute subway ride to ATL international airport
- CDC and other universities in close proximity
- Numerous scientific seminars by world-renowned scientists

Supportive Community

- Dedicated student wellbeing staff
- Collaborative over competitive environment
- International community
- One-on-one career development & monthly workshops

Culture & Wellness Resources

- Regular health and wellbeing programs for graduate students
- Multiple on- and off-campus dining options
- Campus recreation center
- Academic-personal development balance
- International supermarkets
- Art, music and food festivals

""Atlanta offers a good work-life balance. The city provides diverse international cuisine for dining breaks, while the surrounding natural areas are easily accessible. This combination allows me to recharge effectively while still maintaining my research commitments."

Hikaru Katani, Ph.D. student

Complete Financial Package

- Stipend with regular inflation adjustments
- Tuition waiver
- Subsidized health insurance

Additional Financial Resources

- Multiple scholarship opportunities
- International conference funding awards
- Emergency fund access

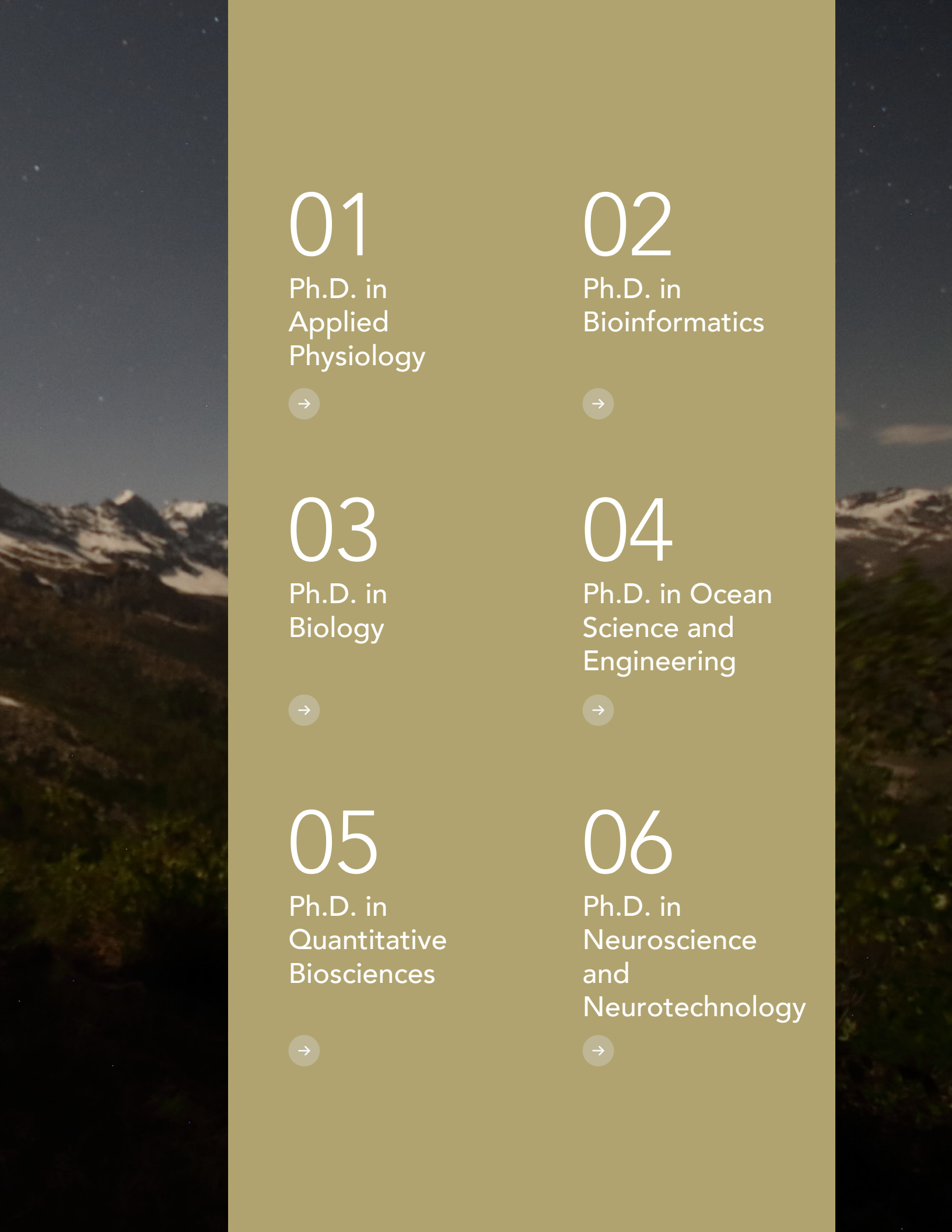
Research Support

- State-of-the-art core facilities
- Writing center and HPC resources
- Numerous internal and external award opportunities

"I'm really grateful to be somewhere where I don't have to compromise my focus to feel financial security."

Julia Schumacher, Ph.D. student


Ph.D. Programs in:



01

Ph.D. in Applied Physiology

02

Ph.D. in Bioinformatics

03

Ph.D. in Biology

04

Ph.D. in Ocean Science and Engineering

05

Ph.D. in Quantitative Biosciences

06

Ph.D. in Neuroscience and Neurotechnology

Ph.D. Programs in:

01

Ph.D. in Applied Physiology

Forming Leaders in Understanding Human Movement

The Ph.D. in Applied Physiology prepares students to become tomorrow's leaders as scientists in areas related to the study of human movement and mobility. Our approach integrates the latest knowledge and technologies across multiple disciplines, creating researchers capable of transforming our understanding of physiological systems.

Areas of Specialization

- Biomechanics and mechanics of movement
- Neural control of movement
- Motor control and behavior
- Applied disability and accessibility
- Prosthetics and orthotics
- Muscle physiology and biochemistry
- Systems physiology

Innovative Research

Research in Applied Physiology is organized around the physiology of movement: motor planning and control, the mechanics of movement, and physiological responses to activity. Our faculty offers students the unique opportunity to focus on a traditional physiological specialty while integrating fundamental concepts from related fields.

Interdisciplinary Collaborations

Numerous opportunities for coursework and collaborative research experiences are available on campus with other units in the College of Sciences and College of Engineering, at the Emory University School of Medicine, the Centers for Disease Control, and Georgia State University.

Application Deadline

December 1

Ph.D. Programs in:

02

Ph.D. in Bioinformatics

Leading the Computational Revolution in Life Sciences

The Ph.D. in Bioinformatics bridges data science with biological discovery. As one of the first bioinformatics graduate programs in the country, we prepare students to lead the computational revolution in life sciences, developing algorithms, tools, and approaches that transform our understanding of biological systems.

Research Areas

- Algorithm and software development
- Cancer genomics and epigenomics
- Drug discovery and development
- High-performance computing and big data
- Human clinical and personalized genomics
- Microbial genomics and metagenomics
- Molecular evolution
- Systems biology
- Structural biology

Curriculum Structure

- Minimum of 30 credit hours (excluding research courses)
- Core curriculum of eight courses (24 credit hours)
- Elective courses: 1-2 courses (3-6 credit hours)
- Four foundational areas: Computational, Biology, Computational/ Biology Interface, and Additional Core

Innovative Community

Our program fosters a collaborative environment where many perspectives and skills converge to solve the most complex challenges at the interface of computing and biology.

Application Deadline

PhD: between December 1 and January 1 (depending on home school of admission)
MS: March 1

Dec 1 - Jan 1

Ph.D. Programs in:

03

Ph.D. in Biology

Application Deadline

December 1

Discovery and Innovation Across the Spectrum of Life Sciences

The Ph.D. in Biology prepares exceptional scientists who drive discovery across the spectrum of life sciences. Our program cultivates researchers who not only master cutting-edge techniques but also develop the intellectual framework to ask transformative questions, creating the biological knowledge and innovations that will shape our future.

Program Structure

- 18 credit hours of coursework, typically completed within the first year
- Students who have previously earned an MS degree may request up to 9 transfer credit hours
- Selection of a thesis advisor with flexibility that suits your needs: join a lab directly when entering the program (with faculty agreement) or explore multiple lab rotations to find your perfect research match. In ecology, students typically make direct matches with faculty
- This program offers a lot of flexibility in the choice of classes
- Average of 3.9 publications per student and 4.3 conference presentations

Diverse Biological Research Opportunities

At the School of Biological Sciences, groundbreaking research spans molecules to ecosystems. Our faculty are pioneers in integrative approaches, uniting molecular genetics, cell biology, physiology, microbiology, structural biology, computational biology, ecology, and evolution to tackle pressing biological questions. From decoding the genetic drivers of disease to modeling ecological communities and exploring the frontiers of structural biology to inform drug design, our PhD program offers exceptional mentorship and interdisciplinary training to prepare the next generation of scientific leaders. Our cohorts of PhD in Biology students form strong bonds that are the foundation of their future professional networks and long-term friendships.

Successful Career Paths

Of recent PhD graduates, 70% are employed as postdoctoral researchers or professors in academia, 9% as government scientists, 9% as industry scientists, 4% as instructors, and 9% are enrolled in further professional training.

Ph.D. Programs in:

04

Ph.D. in Ocean Science and Engineering

Exploring the Frontiers of Ocean Systems

The Ph.D. in Ocean Science and Engineering (OSE) prepares transdisciplinary scientists and engineers who address the complex challenges facing our oceans and coasts. Through an innovative partnership between the schools of Biological Sciences, Civil and Environmental Engineering, and Earth & Atmospheric Sciences, our students develop the integrated expertise needed to advance our understanding of ocean systems.

Program Structure

- 32 credit hours of coursework, usually completed within the first two years
- Each student will be mentored by a primary advisor, a co-advisor, and their advising committee
- Average of 2-4 journal publications and 2-4 conference presentations
- PhD candidates typically defend their thesis during the 5th year

Research Focus Areas

- Ocean Technology: Developing advanced sensors, autonomous systems, and ocean observing platforms
- Ocean & Climate: Understanding the ocean's role in the Earth's climate system and its response to change
- Coastal Systems: Investigating the complex dynamics of coastal ecosystems and human interactions

Career Opportunities

Our Ph.D. graduates constitute a new generation of ocean experts and leaders with career opportunities in academic positions, industry, non-profit, government, and business.

Global Collaborations

Students have access to a global network of ocean research collaborations, providing them with the opportunity to participate in international projects and ocean expeditions.

Application Deadline

January 1

Ph.D. Programs in:

05

Ph.D. in Quantitative Biosciences

Integrating Mathematics, Physics, and Biology to Discover the Principles of Living Systems

The Ph.D. in Quantitative Biosciences (QBioS) trains scientists who integrate physical, mathematical, and biological approaches to discover principles governing living systems. With 60+ faculty across six schools, this program equips researchers with the quantitative tools for modern biology's complex questions.

Core Methodologies

- Data sciences & machine learning
- Statistical methods & dynamical systems
- Network theory & computational modeling
- High-performance computing & simulation

Training Structure

- Foundational courses and lab rotations
- Advisor selection from any program faculty
- Personalized quantitative training
- Five-year program to dissertation defense

Student Community

QBioS cohorts (~8-12 students/year) form close connections through the Student Government Association's regular activities, fostering collaboration across disciplines.

Participating Schools:

Biological Sciences, Chemistry & Biochemistry, Earth & Atmospheric Sciences, Mathematics, Physics, and Psychology.

Application Deadline

December 1

Ph.D. Programs in:

06

Ph.D. in Neuroscience and Neurotechnology

Uncovering the Brain's Vast Mysteries

The Ph.D. program in Neuroscience and Neurotechnology (NSNT) offers advanced training at the intersection of neuroscience and technology, focusing on the investigation of neural processes across a range of organisms—from worms to humans. Emphasizing cutting-edge advances in molecular and cellular systems, behavioral and cognitive neuroscience, the program's core curriculum integrates scientific, technical, quantitative, and computational approaches.

Program Structure

- A program of study combining neuroscience, core courses, and depth electives tailored to each student's research interests
- Qualifying exam including creation and oral defense of an NIH F31 style research proposal
- At least one scientific publication with the student in a central role
- A written Ph.D. thesis and public defense, typically completed in 5-6 years

Neuroscience Without Borders

Our program is led by an interdisciplinary group of faculty and bridges fields across campus–including engineering (mechanical, chemical, electrical, and biomedical), the sciences (biology, psychology, physics, and chemistry), and computing (artificial intelligence and machine learning).

Professional Development:

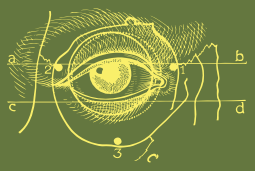
- Networking opportunities with neuroscientists throughout Atlanta
- Community building through journal clubs, seminars, and extracurricular activities
- Specialized coursework for career exploration and preparation
- Training for students entering industry, medical, or governmental fields

Application Deadline

December 1

CULTURAL & SCIENTIFIC HUB

Discover Atlanta's Vibrant Cultural Landscape Beyond Campus



Midtown Atlanta

Cultural Scene

1 - High Museum of Art - 1280 Peachtree St NE
2 - Fox Theatre - 660 Peachtree St NE
3 - Alliance Theatre - 1280 Peachtree St NE (Woodruff Arts Center)
4 - Atlanta Symphony Orchestra - 1280 Peachtree St NE (Woodruff Arts Center)
5 - Art Festivals - Primarily in Piedmont Park, Midtown area, Zoo & Aquarium

Gastronomy & Recreation Scene

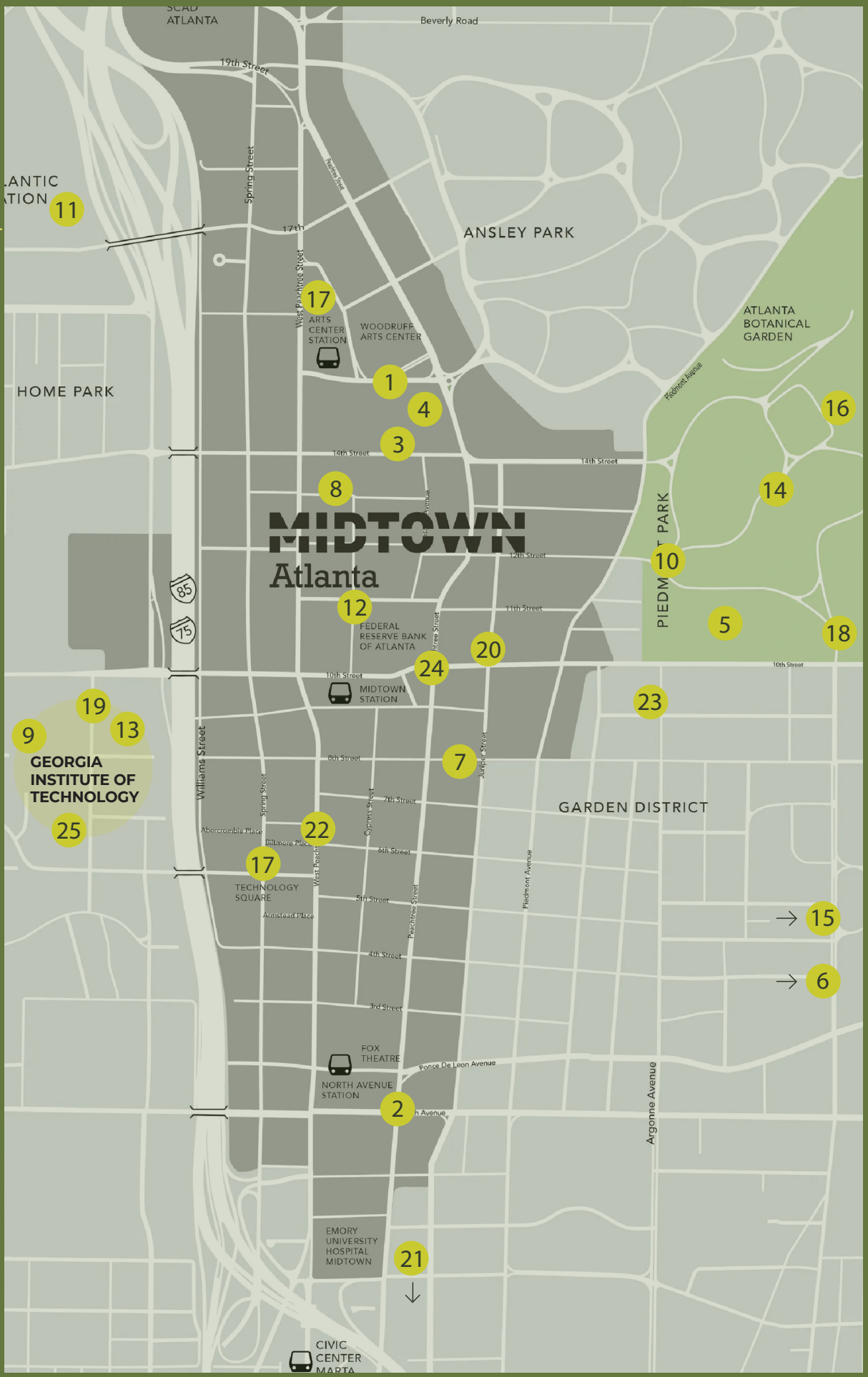
6 - Ponce City Market
7 - International Restaurants - Concentrated along Peachtree St and 10th St
8 - Farm-to-Table Restaurants - Distributed throughout Midtown
9 - Study-friendly Cafés - Octane Coffee (1009 Marietta St NW)
10 - Farmers Market - Piedmont Park (1071 Piedmont Ave NE)
11 - Atlantic Station
12 - Midtown Supermarkets with Free Shuttle
13 - Campus is made up of extended green spaces

Green Spaces & Recreation

14 - Piedmont Park - 400 Park Dr NE
15 - Atlanta Beltline - Eastside Trail access near 10th St and Monroe Dr
16 - Botanical Garden - 1345 Piedmont Ave NE (within Piedmont Park)
17 - Tech Square - 5th St NW and Spring St NW
18 - Outdoor Events - Meadow at Piedmont Park

Connectivity

19 - Pedestrian and bike-friendly campus
20 - Midtown MARTA Subway Station (10th St) - Arts Center (1255 West Peachtree)
21 - ATL airport in 20-minute driving distance or subway ride
22 - Bicycle Infrastructure - Campus, Midtown, Beltline
23 - Weekend Getaways: North Georgia Mountains, Savannah, Tybee Island, Charleston & the Gulf of Mexico
24 - Atlanta Beltline
25 - GT Campus Bus to Midtown MARTA Station


Beverly Road
19th Street
Spring Street
17th
ANSLEY PARK
ATLANTA BOTANICAL GARDEN
Piedmont Avenue
West Peachtree Street
ARTS CENTER STATION
WOODRUFF ARTS CENTER
HOME PARK
14th Street
MIDTOWN
Atlanta
12th Street
11th Street
10th Street
PIEDMONT PARK
FEDERAL RESERVE BANK OF ATLANTA
MIDTOWN STATION
Williams Street
GEORGIA INSTITUTE OF TECHNOLOGY
8th Street
7th Street
6th Street
5th Street
4th Street
3rd Street
Juniper Street
Cypress Street
Abercrombie Place
Biltmore Place
Armstead Place
TECHNOLOGY SQUARE
GARDEN DISTRICT
FOX THEATRE
NORTH AVENUE STATION
Ponce De Leon Avenue
Argonne Avenue
EMORY UNIVERSITY HOSPITAL MIDTOWN
CIVIC CENTER MARTA
85
75
11
17
1
4
3
8
16
14
10
5
18
12
20
24
23
19
13
9
25
22
7
15
6
2
21

Take the Next Step

Application and Deadlines

- Ph.D. - Applied Physiology - Annual Deadline: December 1st
- Ph.D. - Bioinformatics - Annual Deadline:
- December 1st
- Ph.D. - Biology - Annual Deadline: December 1st
- Ph.D. - Ocean Science and Engineering - Annual Deadline: January 1st
- Ph.D. - Quantitative Biosciences - Annual
- Deadline: December 1st
- Ph.D. - Neuroscience and Neurotechnology - Annual Deadline: December 1st

Scan me to explore all Ph.D. programs

Connect With Us

Visit us at: www.biosci.gatech.edu
Email: grad@biosci.gatech.edu
Call: 404-894-3700
Schedule a virtual tour: tours.gatech.edu
Follow us: @GaTechBiology

CREATING THE NEXT®
Georgia Tech isn't just training tomorrow's scientists—we're creating the future of science.

Your path, our commitment.

Georgia Tech College of Sciences
School of Biological Sciences