

The graduate program in **Biochemistry, Biophysics, and Structural Biology** provides outstanding graduate training in a highly collaborative research environment. Students and faculty are engaged by a plethora of biological questions, employing creative approaches to seek detailed, mechanistic answers.

The program provides a collegial and exciting community for students, whose scholarship at the University's Medical and Danforth campuses includes such diverse topics as host-pathogen interactions, cancer-related biochemical processes, and the nature of protein dynamics.

Courses are designed to equip students with an ability to critically appraise current and future research, to conduct mechanistic studies of molecular processes, and to relate reductionist findings to overall biological function.

## Research Environment

The Biochemistry, Biophysics & Structural Biology program conducts a wide variety of research in an interdisciplinary environment.

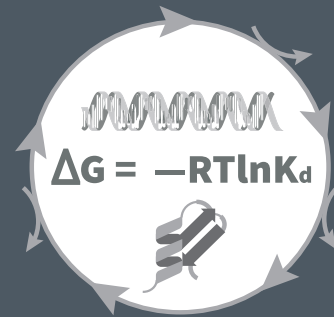
### research areas include:

- DNA repair, replication and recombination
- Enzymology and allostery
- Mechanisms of neural degeneration
- Molecular signaling
- Biochemistry of host-pathogen interactions
- Mechanisms of microbial immune evasion
- Protein-nucleic acid interactions
- Cell cycle regulation
- Computational biophysics
- Cellular transport and trafficking
- Nanotechnology and chemical biology

### research approaches include:

- Kinetic and thermodynamic analysis
- Cryo-electron microscopy
- X-ray Crystallography
- Solution and solid state NMR
- Mass spectrometry
- Synthetic chemistry
- Molecular modeling
- Advanced cellular imaging

# Biochemistry, Biophysics, & Structural Biology



## Required Courses

- Chemistry & Physics of Biological Molecules
- Macromolecular Interactions
- Ethics & Research Science
- Biochemistry, Biophysics, & Structural Biology Seminar
- Journal Clubs and Special Topics Courses
- Graduate Research Fundamentals

## Advanced Electives

Select TWO (2) from:

- Fundamentals of Molecular Cell Biology
- Immunology
- Nucleic Acids & Protein Biosynthesis
- Statistical Computation
- Statistical Thermodynamics
- Cellular Neurobiology
- Computational Molecular Biology
- Genomics

APPLICATION  
DEADLINE

DECEMBER

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**EXPLORE & APPLY:**  
[tinyurl.com/dbbstour](https://tinyurl.com/dbbstour)

For more information about the **BIOCHEMISTRY, BIOPHYSICS & STRUCTURAL BIOLOGY** program and faculty research:

[tinyurl.com/dbbs-bbsbfaculty](https://tinyurl.com/dbbs-bbsbfaculty)



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## Program Benefits & Support

- Full tuition funding and benefits\*, including:  
generous stipend | travel funds for scientific meetings | health, life, and disability insurance coverage
- Opportunities to obtain nationally competitive fellowships, awards, and grants
- Free Metro U-Pass to travel in and around the St. Louis area
- Access to all university educational, entertainment, and recreational resources

\*guaranteed, provided that satisfactory progress towards completion of degree requirements is met

**DBBS celebrates diversity in all of its forms.**

We invite all students to apply, especially those from backgrounds historically underrepresented in the sciences, such as African, Latin, and Native Americans, those with disabilities, and individuals from low-income backgrounds.

To learn more about DBBS' diversity initiatives, visit: <https://tinyurl.com/dbbsdiversity>