

BIOCHEMISTRY, STRUCTURAL, & MOLECULAR BIOLOGY (PHD)

Contacts

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Campus: Center City

Program Website (<https://www.jefferson.edu/academics/colleges-schools-institutes/life-sciences/degrees-programs/phd-programs/biochemistry-pharmacology.html>)

Program Description

Employs a multidisciplinary approach to train students in the rigors of experimental biomedical sciences & prepare them for independent research careers. The curriculum is designed to convey the fundamentals of biochemistry, structural biology, molecular pharmacology, cell biology and genetics.

Learning Goals/Outcomes

- The education is reinforced at the bench in advanced research laboratories broadly grouped into three research emphases: Molecular & Cellular Pharmacology, Chemical & Structural Biology and Molecular Biology & Gene Regulation.
- In addition to extensive basic equipment found in each laboratory, students have access to numerous specialized resources, including genomic and multiplex sequencing, microarray analysis, flow cytometry and cell sorting, confocal and TIRF microscopy, X-ray crystallography and macromolecular characterization (surface plasmon resonance, calorimetry, circular dichroism and fluorescence spectroscopy).
- Students graduating from this program will have the comprehensive scientific foundation and technical expertise to excel in all areas of biomedical research.

Curriculum: 5.5 years, 180 credits

Course requirements are usually completed by end of second year, and students spend an average of another two to three years to complete thesis projects.

Course	Title	Credits
First Year		
Fall		
GC 550	Found in Biomedical Sciences	10
GC 760	PhD Laborator Rotation II	3
BI 910	Research	V
Credits		13
Winter		
GC 550D	Rudiments/ComputationalBio&Med	1
BI 940	Research	V
Credits		1
Spring		
GC 770	PhD Laboratory Rotation	3

Course	Title	Credits
GC 640	Research Ethics	1
BI 525	Genetic Information Transfer	3
BI 720	Seminar	1
BI 725	CurrentLit in BI & MPR	1
Statistics		TBA
PR 613	Macromolecular Structure	3
General Elective		V
BI 920	Research	V
Credits		12
Summer		
BI 730	Seminar	1
BI 930	Research	V
Credits		1
Second Year		
Fall		
General Elective		V
GC 665	Cell Signaling	4
BI 710	Seminar	1
BI 715	Current Lit Biochem&MolPharmac	1
BI 910	Research	V
Credits		6
Winter		
BI 940	Research	V
Credits		0
Spring		
General Elective		V
GC 730	Planning&Writing ResearchGrant	1
BI 720	Seminar	1
BI 725	CurrentLit in BI & MPR	1
BI 920	Research	V
Credits		3
Summer		
BI 930	Research	V
Credits		0
Total Credits		36