

# GENETICS, GENOMICS & CANCER BIOLOGY (PHD)

## Contacts

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

## Program Description

The PhD Program in Genetics, Genomics & Cancer Biology provides aspiring students with the background, training and experience necessary to launch careers as independent scientific investigators and scholars in the field of molecular genetics of disease, genomics and cancer biology.

The Program is designed to take a multidisciplinary approach to the field by providing the student with a strong basic knowledge of genetics, biochemistry, cell biology and molecular biology, with additional exposure to other areas of related interest. Additionally, the Program provides sufficient flexibility so that graduating students can pursue research careers in either an academic or industrial setting.

## Typical Areas of Research Include

- functional genomics and epigenetics
- analysis of the human genome
- genetics of cancer susceptibility
- genetics of the immune system
- molecular genetics of animal models of human disease
- molecular genetics of hematopoietic neoplasias and solid tumors
- mechanisms of altered growth regulation by oncogenes and tumor suppressor genes
- transcriptional regulation
- chromatin organization and the control of gene expression
- translational research
- molecular therapeutics and personalized medicine

## Curriculum: 5.5 Years, 180 Credits

Course	Title	Credits
<b>First Year</b>		
GC 550	Found in Biomedical Sciences	10
GE 710	Current Literature in GGCB I	1
GE 715	Seminar I	1
GC 760	PhD Laboratory Rotation II	3
GE 910	Research	V
GC 640	Research Ethics	1
GE 637	Human Genetics	2
GE 720	Current Literature in GGCB II	1
GE 725	Seminar II	1
GC 770	PhD Laboratory Rotation III	3
GE 612	Adv Top in Molecular Genetics	2
GE 730	Current Literature in GGCB III	1
GE 725	Seminar II	1

Course	Title	Credits
GC 780	PhD Laboratory Rotation IV	3
NS 740	Applied Statistics in Neurosci	2
GE 920	Research	V
GE 930	Research	V
GE 940	Research	V
GC 550D	Rudiments/ComputationalBio&Med	1
<b>Credits</b>		<b>33</b>
<b>Second Year</b>		
GE 636	Tumor Cell Signaling&CellCycle	3
General Elective		3
GC 730	Planning&Writing ResearchGrant	1
GE 710	Current Literature in GGCB I	1
GE 715	Seminar I	1
GE 910	Research	V
GE 720	Current Literature in GGCB II	1
GE 725	Seminar II	1
GE 730	Current Literature in GGCB III	1
GE 735	Seminar III	1
GE 920	Research	V
GE 930	Research	V
GE 940	Research	V
<b>Credits</b>		<b>13</b>
<b>Third Year</b>		
GE 710	Current Literature in GGCB I	1
GE 715	Seminar I	1
GE 910	Research	V
<b>Preliminary Exam</b>		
GE 720	Current Literature in GGCB II	1
GE 725	Seminar II	1
GE 730	Current Literature in GGCB III	1
GE 735	Seminar III	1
GE 920	Research	V
GE 930	Research	V
GE 940	Research	V
<b>Credits</b>		<b>6</b>
<b>Fourth Year</b>		
Thesis		0
<b>Credits</b>		<b>0</b>
<b>Fifth Year</b>		
Thesis		0
<b>Credits</b>		<b>0</b>
<b>Total Credits</b>		<b>52</b>