

# IMMUNOLOGY, PHD

Recognizing the need to create an environment where researchers could be adequately trained in the multifaceted aspects of immunobiology, Penn became the first medical school to establish a separate degree-granting PhD program in Immunology. The faculty of the Immunology Graduate Group (IGG) are drawn from across the University of Pennsylvania and the University of Pennsylvania Health System, encompassing a broad spectrum of research interests; the IGG has also established a partnership with the National Institutes of Health in Bethesda, MD. The partnership brings to the IGG the extraordinary resources and scientific expertise present at the NIH, one of the largest and most renowned biomedical research centers in the world. Students have the opportunity to interact with NIH faculty in a variety of ways, including conducting a lab rotation or thesis work at the NIH.

At present, there are approximately 110 faculty members in Penn's Immunology Graduate Group, encompassing a broad spectrum of research studies. Faculty research includes studies on the development and regulation of the immune system, host-pathogen interactions, the fundamental molecular and cellular biology of the immune system, structural studies of immunologically relevant molecules and translational immunology. Research results are being utilized in both experimental models and clinical trials attempting to fight diseases.

**For more information:** <https://www.med.upenn.edu/immun/>

View the University's Academic Rules for PhD Programs (<http://catalog.upenn.edu/pennbook/academic-rules-phd/>).

## Required Courses

Code	Title	Course Units
<b>Coursework</b>		
BIOM 5550	Regulation of the Genome	
BIOM 6000	Cell Biology	
IMUN 5060	Immune Mechanisms	
BIOM 6100	Foundations in Statistics <sup>1</sup>	
IMUN 5070	Immunopathology	
IMUN 6010	Molecular Immunology	
IMUN 6070	Grant Writing	
Select one elective (optional)		
<b>Research</b>		
IMUN 6990	Laboratory Rotation	
IMUN 9950	Dissertation	

<sup>1</sup> Or other statistics course with approval of the Graduate Group.

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2024 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.

## Sample Plan of Study

Code	Title	Course Units
<b>Year 1</b>		
<i>Fall</i>		
BIOM 6000	Cell Biology	
IMUN 5060	Immune Mechanisms	
IMUN 6010	Molecular Immunology	
IMUN 6990	Laboratory Rotation	
<i>Spring</i>		
BIOM 5550	Regulation of the Genome	
IMUN 5070	Immunopathology	
BIOM 6100	Foundations in Statistics	
IMUN 6990	Laboratory Rotation	
<i>Summer</i>		
IMUN 6990	Laboratory Rotation	
<b>Year 2</b>		
<i>Fall</i>		
IMUN 8990	Predissertation Lab	
Elective (optional)		
<i>Spring</i>		
IMUN 6070	Grant Writing	
IMUN 8990	Predissertation Lab	
<b>Year 3 and Beyond</b>		
IMUN 9950	Dissertation	