DOCTOR OF PHILOSOPHY IN THE FIELD OF MICROBIOLOGY AND IMMUNOLOGY

OVERVIEW

The PhD in microbiology and immunology program provides flexible, rigorous training that prepares students to become independent research scientists in the areas of molecular virology, molecular parasitology, and immunology.

The program begins with interdisciplinary coursework in genes, cells and systems in biomedical sciences, professional development in scientific communication and science careers, and laboratory rotations offered through GW’s Integrated Biomedical Sciences program (https://ibs.smhs.gwu.edu/). After the first year of study, students work with their research advisor to complete remaining degree requirements, including the dissertation.

Faculty are drawn largely from the GW School of Medicine and Health Sciences, including scientists from Children’s Research Institute of Children’s National Health System. Research strengths and training opportunities include the study of host-pathogen relationships, inflammation, vaccine development, T lymphocyte activation, cancer immunology, molecular parasitology, molecular retrovirology (HIV/AIDS), and microbial genomics and proteomics.

Students have access to extensive research facilities and libraries on campus and in the greater Washington, DC area. These include the School of Medicine and Health Sciences, GW’s Gelman Library and Himmelfarb Health Sciences Library, the Children’s Research Institute, National Institutes of Health, and numerous other research institutions.

This is a STEM-designated program.

Visit the Integrated Biomedical Sciences program website (https://ibs.smhs.gwu.edu/) for additional information.

ADMISSIONS

Admission deadlines:
Fall – December 1

Standardized GRE general exam is not required.

Test scores:
The Test of English as a Foreign Language (TOEFL), the academic International English Language Testing System (IELTS), or the PTE Academic is required of all applicants except those who hold a bachelor’s, master’s, or doctoral degree from a college or university in the United States or from an institution located in a country in which English is the official language, provided English was the language of instruction.

Minimum scores for the program are:
- Academic IELTS: an overall band score of 7.0 with no individual score below 6.0; or
- TOEFL: 600 on paper-based or 100 on Internet-based; or
- PTE Academic: 68;

Recommendations:
Three (3) recommendations required;

Prerequisite requirements:
Bachelor’s degree in biological sciences, chemistry, or related field.

Prior academic records:
Transcripts are required from all colleges and universities attended, whether or not credit was earned, the program was completed, or the credit appears as transfer credit on another transcript. Unofficial transcripts from all colleges and universities attended must be uploaded to your online application. Official transcripts are required only of applicants who are offered admission.

If transcripts are in a language other than English, English language translations must be provided. The English translation alone should be uploaded into your application.

Statement of purpose:
In an essay of 250 – 500 words, state your purpose in undertaking graduate study in your chosen field. Include your academic objectives, research interests, and career plans. Also discuss your related qualifications, including collegiate, professional, and community activities, and any other substantial accomplishments not already mentioned on the application.

Interview:
An interview is required.

International applicants only:
Please follow this link - https://columbian.gwu.edu/international-graduate-applicants (https://columbian.gwu.edu/international-graduate-applicants/) - to review the International Applicant Information carefully for details on required documents and English language requirements.

Supporting documents not submitted online should be mailed to:
Columbian College of Arts and Sciences, Office of Graduate Studies
The George Washington University
801 22nd Street NW, Phillips Hall 107
Washington DC 20052

For additional information about the admissions process visit the Columbian College of Arts and Sciences Frequently Asked Questions (https://columbian.gwu.edu/graduate-admissions-faq/) page.

Contact:
askccas@gwu.edu
202-994-6210 (phone)
Hours: 9:00 am to 5:00 pm, Monday through Friday
The following requirements must be fulfilled:

The general requirements stated under Columbian College of Arts and Sciences, Graduate Programs (http://bulletin.gwu.edu/arts-sciences/#degreeregulationstext).

The requirements for the Doctor of Philosophy Program (http://bulletin.gwu.edu/arts-sciences/#doctoraltext).

72 credits, including required core and elective courses. Successful completion of a grant-style qualifier examination is required for advancement to candidacy. In addition, students perform full-time research in faculty laboratories for the duration of their program.

Students are advised to complete 45 credits in the first two years of PhD study, including required interdisciplinary core courses, required microbiology core courses, electives, and advanced readings and research. Upon successful completion of a grant-style qualifier, students register for up to 27 credits of dissertation research through completion and successful oral defense of a written dissertation.

### Required interdisciplinary core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMSC 8210</td>
<td>Genes to Cells</td>
<td></td>
</tr>
<tr>
<td>BMSC 8212</td>
<td>Systems Physiology</td>
<td></td>
</tr>
<tr>
<td>BMSC 8215</td>
<td>Lab Rotations (Taken three times for a total of six credits)</td>
<td></td>
</tr>
<tr>
<td>BMSC 8216</td>
<td>Scientific Writing, Presentation Skills, and Seminar Planning</td>
<td></td>
</tr>
<tr>
<td>BMSC 8217</td>
<td>Ethics and Grant Writing</td>
<td></td>
</tr>
<tr>
<td>BMSC 8218</td>
<td>Career Options in the Biomedical Sciences</td>
<td></td>
</tr>
<tr>
<td>BMSC 8230</td>
<td>Molecular Basis of Human Disease</td>
<td></td>
</tr>
<tr>
<td>BMSC 8235</td>
<td>Applied Biostatistics for Basic Research</td>
<td></td>
</tr>
</tbody>
</table>

### Required microbiology core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MICR 8210</td>
<td>Infection and Immunity</td>
<td></td>
</tr>
<tr>
<td>MICR 8214</td>
<td>Microbiology and Immunology Seminar (Taken two times for a total of two credits)</td>
<td></td>
</tr>
<tr>
<td>MICR 8230</td>
<td>Molecular and Cellular Immunology</td>
<td></td>
</tr>
</tbody>
</table>

### Electives

17 credits in elective courses selected from the following in consultation with graduate program advisor.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANAT 6130</td>
<td>Clinically Oriented Human Embryology</td>
<td></td>
</tr>
</tbody>
</table>

Doctor of Philosophy in the Field of Microbiology and Immunology
NRSC 8284 | Foundations of Experimental Neuroscience I
---|---
NRSC 8285 | Foundations of Experimental Neuroscience II
PHAR 6205 | Pharmacology
PHAR 6206 | Advanced Pharmacology
PHAR 6116 | Pharmacogenomics and Personalized Medicine
PHAR 6322 | Advanced Professional and Communication Skills
PHAR 8211 | Physiology
PHAR 8281 | Molecular Pharmacology and Neurobiology of Excitable Tissues
PUBH 6276 | Public Health Microbiology
PUBH 6278 | Public Health Virology
PUBH 6861 | Public Health Genomics

**Dissertation research (6-27 credits)**

MICR 8999 | Dissertation Research

*Required courses may be waived at the discretion of the graduate program director based on written documentation of prior equivalent coursework. Any waiver increases the number of electives required by the number of credits waived.*