Doctor of Philosophy

Biomedical Sciences with a Concentration in Microbiology and Immunology (PhD)

Barbara Hargrave, Graduate Program Director

In this interdisciplinary program, students will master a broad range of basic biomedical science topics. Integration of the basic courses is reinforced by a rotation of laboratory experiences and by special seminars that highlight disciplinary interrelationships and approaches to biomedical research. The student progresses from a core of basic courses to in-depth study of specific biomedical problems. This includes advanced doctoral courses and the doctoral research project. Under the guidance of the graduate faculty, the student will integrate knowledge from the broad spectrum of biomedical disciplines into their focus on an area of specialization.

The program graduate will be a scientist with a broad biomedical education and a demonstrated ability to carry out original and creative research, cognizant of disciplinary interfaces and implications and capable of pursuing and/or recommending continuing lines of study. They will be prepared to bridge the gap between practice and discovery in the art of medicine and the practice of science. The graduate is capable of serving in an industrial, governmental, or academic teaching or research setting, either independently or as a member of a team.

Admission

The requirements for admission to the biomedical sciences Ph.D. program are as follows:

1. A bachelor’s degree from an accredited college or university with a B (3.00) average. Students with advanced degrees are encouraged to apply.
2. In addition to the University's English Language Proficiency Requirements, international applicants must have either a score of 84 on the TOEFL or a score of 26 on the speaking portion, or an IELTS overall score of 8.
3. Prior training in biology (two years), calculus and/or statistics, and organic chemistry (one year). Additional courses in biology, chemistry, and physics are recommended.

Application Procedures

The completed application for the biomedical sciences Ph.D. program will include the following items:

1. Transcripts of coursework only from institutions awarding a bachelor’s or master’s degree.
2. A statement of personal goals and academic objectives.
3. Writing sample on a science related topic (from a course or from your research experience).
4. Resume listing all degrees earned and work experience.
5. Three letters of recommendation on letterhead, from faculty members at colleges attended who are familiar with the applicant’s academic and research capabilities.
6. A completed application form.
7. Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS) test scores sent directly to the University of Virginia. \( \text{Total Credit Hours} \quad 49-50 \)

Microbiology and Immunology Concentration

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BIOL 805</td>
<td>Advanced Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 845</td>
<td>Advanced Immunology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 840</td>
<td>Advanced Vaccinology</td>
<td>3</td>
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<tr>
<td>or BIOL 881</td>
<td>Autoimmunity and Transplantation</td>
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BIOL 890         Biomedical Doctoral Seminar *

Total Credit Hours | 13

* Two graded seminar courses required.

Electives
Optional elective courses require permission of dissertation committee.

Additional Requirements

Continuance
Students must maintain a 3.0 GPA and receive no more than one course grade of B- or lower to continue in the Ph.D. program. Students are also required to complete Responsible Conduct of Research training within their first 12 completed credit hours in the program.

Teaching
Students are required to successfully complete the GTAII Institute and teach at least one semester. International students or students where English is not their first language are required to either pass the SPEAK test or demonstrate they have received a score of 26 or better on the speaking portion of their iBT TOEFL exam.

Exit Requirements
Students must complete the following in order to graduate:

1. Academic requirements - All core and concentration course requirements
2. Publication Research
3. Exit Survey