DOCTOR OF PHILOSOPHY IN THE FIELD OF BIOCHEMISTRY AND SYSTEMS BIOLOGY

REQUIREMENTS

Specific admission requirements are shown on the Graduate Program Finder. (http://www.gwu.edu/all-graduate-programs)

Candidates must hold a bachelor's degree in biological sciences, chemistry, or a related field.

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/#degreeregulationtext).

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

72 credits in required and elective coursework.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Required</td>
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<tr>
<td>ANAT 6160</td>
<td>Clinically Oriented Human Functional Neuroanatomy</td>
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<tr>
<td>or MICR 8210</td>
<td>Infection and Immunity</td>
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<tr>
<td>or PHAR 6116</td>
<td>Pharmacogenomics and Personalized Medicine</td>
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<tr>
<td>BMSC 8210</td>
<td>Genes to Cells</td>
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<td>BMSC 8212</td>
<td>Systems Physiology</td>
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<tr>
<td>BMSC 8215</td>
<td>Lab Rotations</td>
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<tr>
<td>BMSC 8216</td>
<td>Scientific Writing, Presentation Skills, and Seminar Planning</td>
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<td>BMSC 8217</td>
<td>Ethics and Grant Writing</td>
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<td>BMSC 8218</td>
<td>Career Options in the Biomedical Sciences</td>
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<td>BMSC 8230</td>
<td>Molecular Basis of Human Disease</td>
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<tr>
<td>BMSC 8231</td>
<td>Introduction to Genomics, Proteomics, and Bioinformatics</td>
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<td>BMSC 8234</td>
<td>Seminar in Systems Biology</td>
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<tr>
<td>BMSC 8235</td>
<td>Applied Biostatistics for Basic Research</td>
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<tr>
<td>BMSC 8999</td>
<td>Dissertation Research (taken for 12 - 24 credits)</td>
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<td>Electives</td>
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<tr>
<td>CSCI 3571</td>
<td>Introduction to Bioinformatics</td>
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<tr>
<td>BMSC 8237</td>
<td>Muscle: Heath and Disease</td>
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<tr>
<td>BMSC 8998</td>
<td>Readings and Research</td>
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<td>MMED 8214</td>
<td>Molecular Medicine Seminar</td>
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<td>MMED 8282</td>
<td>Neural Development and Neurodevelopmental Disorders</td>
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<td>MMED 8283</td>
<td>Current Topics in Neuroscience</td>
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<tr>
<td>PHAR 6205</td>
<td>Pharmacology</td>
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</tbody>
</table>

Research fields

- Molecular basis of inherited muscle and CNS disease utilizing DNA gene chip technology
- Genomic, epigenetic, metabolomic, and bioinformatic analyses
- Biomarkers
- Mechanistic pathways, genomics, proteomics, clinical medicine
- Autoimmune and inflammatory responses in disease
- Co-regulator biology
- Cancer