GW Biomedical PhD Programs

Welcome

Institute for Biomedical Sciences
PhD Program Overview 2020
You are future leaders in research

PhD Programs organized in the Institute for Biomedical Sciences (IBS)

- Explore new areas & approaches
- Present & publish discoveries
- Become trusted colleagues

knowledge, research training & career skills for the future
Great time to be at GW!

School of Medicine & Health Sciences
THE GEORGE WASHINGTON UNIVERSITY

Core Facilities
- Bio-repository
- Biostatistics Center
- Flow Cytometry
- Genomics Center
- Nanofab & Imaging
- Pathology

Transforming health care education and expanding research to improve lives

Exciting PhD projects

GW Cancer Center

A Strategic Plan for SMHS 2015-2018

District of Columbia Center for AIDS Research

CETI Mimetic

The Research Center for Neglected Diseases of Poverty
IBS umbrella to 5 PhD programs

- Core courses
- Career development
- Research rotations
- Choose mentor & program

- Cancer Biology
- Genomics & Bioinformatics
- Microbiology & Immunology
- Neuroscience
- Pharm/ Phys

- Specialized coursework
  - Grant-style qualifier
  - Dissertation research

See our IBS faculty trainers
<table>
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<tr>
<th>Year</th>
<th>Semester</th>
<th>CANCER BIOLOGY</th>
<th>GENOMICS &amp; BIOINFORMATICS</th>
<th>MICROBIOLOGY &amp; IMMUNOLOGY</th>
<th>NEUROSCIENCE</th>
<th>PHARMACOLOGY &amp; PHYSIOLOGY</th>
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<tbody>
<tr>
<td>FALL</td>
<td>12 credits</td>
<td>Required Core Courses:</td>
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<td>• BMSC 8210 Genes to Cells (3)</td>
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<td>• BMSC 8230 Molecular Basis of Human Disease (3)</td>
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<td>• BMSC 8212 Systems Physiology (3)</td>
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<td>• BMSC 8215 Lab Rotation (2)</td>
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<td>• BMSC 8216 Scientific Writing (1)</td>
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<td>SPRING</td>
<td>9 credits</td>
<td>Foundation Courses [recommended to select 2]</td>
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<td>Students must take the Foundation Course that corresponds to their selected PhD program, and are encouraged to take a second foundation that will count as an elective.</td>
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<td>CANC 8221 Basic Science of Oncology (3)</td>
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<td>GENO 8231 Intro to Genomics, Proteomics &amp; Bioinformatics (3)</td>
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<td>MICR 8210 Infection &amp; Immunity (3)</td>
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<td>SUMMER</td>
<td>3-6 credits</td>
<td>Electives [select 1-2]</td>
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<td>ANAT 6160 Clinically Oriented Human Neuroanatomy (3)</td>
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<td>BIOC 6240 Next Generation Sequencing (2)</td>
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<td>Additional options possible with Program Director approval</td>
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<td>Required Core Courses:</td>
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<td>BMSC 8215 Lab Rotation (2)</td>
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<td>BMSC 8218 Careers in Biomedical Sciences (1)</td>
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<td>PHAR 8211 Physiology (3)</td>
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We provide year-round stipend, tuition, and health insurance throughout the PhD.

See [Programs of Study](smhs.gwu.edu)
Great student outcomes

Year 1
IBS core & rotations
Choose program & mentor

Year 2
PhD coursework & research
Grant-style qualifying exam

Year 3-5
Dissertation research
 Fellowships & conferences

Avg 5 pubs, 1.6 as 1st author
Avg time to degree= 5.0 yrs

Current national fellowships

- Julie Ahn NIH F31
- Aparna Baxi NIH F31
- Katherine Blackmore NIH F31
- Jacob Samsel NIH IARF
- Indra Sarabia NIH F31
- Erin Bonner Isa. Molina Fndn
- Stephanie Gomez NIH F31
- Amy Hwang NIH F31
- Tony James NIH IARF
- Jessica Schenk AHA
- Nicole Bonan T32 Cancer Biology
- JT Howard Gates Millennium
Cancer Biology Research Areas

- Molecular signaling in carcinogenesis
- Cancer immunology
- Epigenetics and chromatin remodeling

Recent PhD Dissertation Titles:

Eden Dejene “Regulation of Poly(A)-specific ribonuclease Activity by Reversible Lysine Acetylation” with mentor Edward Seto, PhD

Sulgi Lee “Identification and Characterization of Tumor Specific Antigens in Pediatric Diffuse Midline Gliomas” with mentor Javad Nazarian, PhD

Jacqueline Moy “Differential alternative splicing of a novel FGFR3 variant involved in African American prostate cancer disparities.” with mentor Norman Lee, PhD

Stephanie Perkail “Tumor Suppressor BRCA1 Associated Protein-1 (BAP1) in Pancreatic Cancer” with Mentor Alexandros Tzatsos, MD PhD

Norman Lee
nhlee@gwu.edu

Yanfen Hu
huy3@gwu.edu
Genomics & Bioinformatics Research

- Genetic and Epigenetic Basis of Diseases
- Autism, cardiovascular & pulmonary
- Systems & “omics” for complex disorders

Recent PhD Dissertation Titles:

John Torcivia “An Exploration of Cancer Associated Non-coding Variations in Whole Genome Sequencing Data” with mentor Raja Mazumder, PhD

Matthew Bendall “Characterization and Quantification of the Human Endogenous Retrovirus Transcriptome” With mentors Keith A. Crandall, PhD/ Douglas F. Nixon, MD, PhD

Konstantinos Karagiannis “Separation and Assembly of RNA virus High Throughput Sequencing Data into Discrete Full Length Sub-Population Genomes” with mentor:: Raja Mazumder, PhD

Eric Vilain evilain@childrensnational.org

Ljuba Caldovic Lcaldovic@childrensnational.org

Raja Mazumder mazumder@gwu.edu smhs.gwu.edu
Microbiology & Immunology Research

- Molecular parasitology
- HIV pathogenesis
- Vaccine development
- Tumor immunotherapy

Recent PhD Dissertation Titles:


Shabnum Patel “Immunotherapeutic Strategies for Human Immunodeficiency Virus-1 (HIV-1)” with mentor Catherine M. Bollard, PhD

John Huang “Prime, Kick, and Kill: Establishing a Proof of Concept for a Novel Approach to Purging Latent Reservoirs of Human Immunodeficiency Virus-1” with mentor R. Bradley Jones PhD

David Leitenberg
dleit@gwu.edu

Alberto Bosque
abosque@gwu.edu
Neuroscience Research Areas

- Synaptic circuitry & plasticity
- Neurodevelopmental Disorders
- Cortical development
- Glial cell biology & disease

Recent PhD Dissertation Titles:

Thomas Forbes “Environmental Enrichment Ameliorates Perinatal Brain Injury and Promotes Functional White Matter Recovery” with mentor Vittorio Gallo, PhD

Alejandra Fernandez “Disrupted Mitochondrial Metabolism Alters Cortical Layer II/III Projection Neuron Differentiation” with mentor Anthony-Samuel LaMantia PhD

Julieta Lischinsky “Embryonic transcription factor expression predicts neuronal identity and innate behavioral activation patterns in the limbic system” with mentor Joshua Corbin PhD
Pharmacology & Physiology Research

- Cardiovascular Physiology
- Obesity and Metabolic Diseases
- Anxiety and PTSD

Recent PhD Dissertation Titles:

Adam Swiercz “Contributions of the Renin Angiotensin System to Fear Memory and Fear Conditioned Cardiovascular Responses” with mentor Paul J. Marvar, PhD

Adam Horn “Role of Mitochondria in Plasma Membrane Repair and Pathogenesis of Muscular Dystrophy” with mentor Jyoti K. Jaiswal PhD
How do you join the GW IBS?

Application deadline December 1

Research experience important
Strong academic record, especially in science
Statement / 3 Short Response / CV
Mention faculty of interest

LORs about research-new prompts
GRE scores not required

Class of 15 students from about 200 applications

See application & admissions details
What will you discover?

Visit our webpage
Email a Graduate Program Director
Contact IBS program faculty
Ask the program administrator

Apply by December 1

The George Washington University Institute for Biomedical Sciences
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