

Pharmaceutical Science (PhD) Medicinal Chemistry

The College of Pharmacy currently offers a four-year Ph.D. degree in Pharmaceutical Sciences with tracks in Pharmacy Administration, Medicinal Chemistry, and Pharmaceutics.

The Pharmacy Administration track is committed to excellence in developing pharmacy professionals that combine the use of health services research, education, and service to advance health care systems, governmental policies, and regulatory agencies tasked with ensuring the optimal use of medications with the goal of improving human health. Moreover, in line with the mission of Howard University, our professionals will gain experience in using their expertise to address health disparities that impact our communities.

Research in the Howard University Medicinal Chemistry Track spans activities in contemporary chemical biology and drug discovery and blends the principles and experimental techniques of chemistry and biology with computational science. While maintaining a traditional emphasis on the drug candidate, we integrate contemporary biological methods to merge small molecule and target biomolecule research. This approach allows for elucidation of disease pathways and mechanisms of drug action. Our program encompasses nearly all aspects of drug discovery, including bioactive natural products, organic chemistry, computational drug design, assay development, high throughput screening of chemical libraries, and studies in living cells.

The Pharmaceutics Track produces Ph.Ds. who will eventually engineer drug delivery systems for new therapies and vaccines intended for human use. There are many routes of administration, including oral, pulmonary, parenteral, percutaneous, and transmucosal. The design and fabrication of nanoparticulate drug carriers have received critical attention recently as they provide a new challenge as well as opportunities. Because of strong educational and training components in basic pharmaceutics, the division is ideally situated in bridging basic sciences to biomedical research.

- *Note: Courses with subject codes PUBH and RAFF offered in partnership with from George Washington University
- PHSC-701 *Note: A maximum of 9 PhD Research credits may be taken per semester. In addition, a maximum of 12 Research credits may be counted toward the 72 required for program completion.
- PHSC-801 *Note: A maximum of 9 dissertation credits may be taken per semester. In addition, a maximum of 12 dissertation credits may be counted toward the 72 required for program completion.
- PHSC-604 *Note: A maximum of 3 dissertation writing credits may be taken per semester. In addition, a maximum of 3 dissertation writing credits may be counted toward the 72 required for program completion.

Program: Pharmaceutical Science

Type: PhD

Item #	Title	Credits
PHSC-511	Biostatistics	4
PHSC-631	Research Design and Methods	3
CHEM-243	Advanced Organic Chemistry	3
PHSC-703	Proposal Writing	3
PHSC-601	Seminar	2
PHSC-602	Seminar	1
PHSC-422	Drug Design in Pharmaceutical Sciences	3
PHSC-425	Organometallic Chemistry in Drug Synthesis	3
PHSC-523	Molecular Modeling	3
PHSC-747	Nano Therapeutics	3
PHSC-701	Research	9
PHSC-801	Dissertation	9
PHSC-604	Dissertation Writing	3
	Pharmaceutical Sciences - Medicinal Chemistry Elective Group	23
	Total credits:	72