Dual Degree: Doctor of Pharmacy & Master of Science in Pharmacogenomics and Personalized Medicine

SHENANDOAH UNIVERSITY
Bernard J. Dunn School of Pharmacy

A full-time, four-year professional dual degree program (162 credits)

PROGRAM DESCRIPTION

The Bernard J. Dunn School of Pharmacy (BJDSOP) at Shenandoah University was one of the first pharmacy schools to integrate pharmacogenomics into their curriculum, beginning with an introduction in the first professional year and culminating with application-based practices in therapeutic courses. Extending our dedication to pharmacogenomics education, we are excited to offer a master's degree in Pharmacogenomics and Personalized Medicine (PGPM) for students in the BJDSOP Doctor of Pharmacy (Pharm.D.) Program.

The Pharm.D./M.S. in PGPM dual degree program is poised to graduate students that are prepared to enter a wide range of pharmacy positions and address some of today's most challenging healthcare issues. This unique degree combination prepares students for career opportunities clinical practice, biotechnology, genetic testing or in the pharmaceutical industry.

The M.S. in PGPM provides the opportunity for students to explore the relationship between an individual's genetic make-up, their health, and their response to medications. Students will become familiar with the most widely used genomic laboratory techniques and interpretation of pharmacogenomics data used in personalizing drug therapy. Introductory concepts of genomic data science will also be introduced in a hands-on format. Additionally, students will complete a research project in pharmacogenomics and/or personalized medicine in their final year.

Both the Pharm.D. and PGPM programs integrate graduate-level critical thinking, problem- solving and scientific inquiry. Graduates will gain knowledge and experience in self-directed learning, the effective use of modern technology in the laboratory and clinical setting and develop research, leadership, and education skills to contribute to the fields of pharmacy and personalized medicine. The dual program offers individuals interested in pursuing degrees in both pharmacy and pharmacogenomics a unique opportunity to complete both programs simultaneously, saving time and money.

PREREQUISITE REQUIREMENTS

To be considered for admission to the Pharm.D./M.S. in PGPM Dual Degree, applicants must meet the following qualifications:

- Full-time P2 Pharm.D. student in BJDSOP
  - Good academic and professional standing
  - Pharm.D. cumulative GPA ≥ 3.0 preferred
  - Pharm.D. cumulative sub-area GPA ≥ 3.00 (PHAR 534, 668, 600) preferred

APPLICATION REQUIREMENTS

- Shenandoah Graduate Admission Application
- Official transcripts from ALL current and previous institutions
- Current *Curriculum Vitae*
- Personal Statement (750 words maximum)
  Note: Your personal statement will be processed using plagiarism and A.I. detection software

ADMISSION & APPLICATION

Start Term
Summer 2026 (May)

Application Deadline
January 15
Preferred Minimum GPA: 3.0 cumulative

Format/Location
M.S. in PGPM: Online
Pharm.D.: Winchester, VA and hybrid

Health Professions Building, located on the Winchester Medical Center Campus

Contact Us
M.S. in PGPM
PGxMasters@su.edu
(540) 542-6281

Pharm.D. Admissions
PharmD@su.edu
(540) 678-4377

Office of Graduate Admissions
SUGradAdmissions@su.edu
call: (540) 665-4581 | text: (540) 546-6029

Courses are taught by the following faculty in the Department of Biopharmaceutical Sciences and Pharmacogenomics

FACULTY

Amanda Munson, Ph.D.
Associate Professor
Program Director, M.S. in Pharmacogenomics and Personalized Medicine

Deepak Bhatia, Ph.D.
Professor

Tim Bloom, Ph.D.
Professor
Associate Dean of Academic Affairs

Arthur Harralson, Pharm.D., BCPS
Professor
Department Chair, Biopharmaceutical Sciences and Pharmacogenomics

Robert Kidd, Pharm.D., Ph.D.
Professor
Dean, Bernard J. Dunn School of Pharmacy

Simran Maggo, Ph.D.
Assistant Professor

Shahrzad Movafagh, Pharm.D., Ph.D.
Associate Professor

Tracey Nickola, Ph.D.
Associate Professor

ADJUNCT FACULTY

Solomon Adams, Pharm.D., Ph.D.
Miranda Ryan, Pharm.D.

PHARMACOGENOMICS CURRICULUM

In addition to the in-person required Pharm.D. coursework, students in the dual degree program have online coursework in the following areas:

Genetic Foundations of Personalized Medicine
Genomic Technology and Data Science
Pharmacogenomics Literature Evaluation*
Analytical Techniques – Pharmacogenomics*
Therapeutic Antibodies*
Clinical Applications of Pharmacogenomics
Ethics in Genomic Science
Epigenetics
Project in Pharmacogenomics and Personalized Medicine

** Fulfills two of the three Pharm.D. electives*

FACULTY RESEARCH

The research interests of our program faculty include:

- Oncogenes and tumor suppressor genes
- Chemoprevention of cancer by natural and synthetic agents
- Pharmacokinetics/pharmacodynamics (PK/PD) modeling and simulation
- Cardiovascular health in African Americans
- The impact of female mentorship on women in STEM disciplines
- The state of pharmacogenomics education in US professional schools
- Pharmacogenomic Interprofessional Education
- Diversity in pharmacogenomics
- Clinical implementation of pharmacogenomics
- Systematic review and meta-analysis of gene-drug interactions
- Variability and regulation of genes involved in hypoxic adaptation in renal disease

FREQUENTLY ASKED QUESTIONS

Is there a tuition discount for dual-degree students?
The per credit cost for the M.S. program is slightly lower than the per credit cost in the Pharm.D. program. In addition, two of the Pharm.D. elective slots can be filled with PGPM courses, resulting in a cost savings as you complete the two degrees in parallel.

Is a bachelor's degree required for dual-degree applicants?
No, but the most competitive applicants have a strong pre-pharmacy background in genetics, biochemistry, and molecular and/or cell biology, which often comes with a B.S. or B.A. degree.

Do I earn my Pharm.D. and M.S. at the same time?
If you complete all requirements on schedule, dual-degree students are conferred both degrees at the University's May Commencement ceremony.

How competitive is application to this program?
There are typically about fifteen seats available in the program each year and interest in the program is high. Admission is highly competitive.

Is a thesis required for this program?
While there is no formal thesis, all students will engage in a research project culminating in a written and/or oral presentation on a topic of their choosing. This could be based on laboratory work, case reviews, computational work, or a combination of various aspects covered in the program.

Can I do the PGPM dual degree with the MBA or MPH dual degree?
Each dual degree program is designed to balance the Pharm.D. and one master's degree. The addition of a second master's degree program (three degrees concurrently) will likely delay completion of one or both master's degrees and is not recommended.