PROGRAM DESCRIPTION

The Master of Science in Pharmacogenomics and Personalized Medicine (M.S. in PGPM) degree provides the opportunity for students to explore the relationship between an individual’s genetic makeup, their health, and their response to medications. Pharmacogenomics focuses on the use of genomic information to develop the most effective use of medications, including minimizing adverse events. Personalized medicine is a method of disease prevention and treatment for which the healthcare team considers individual variations in genes, environment and lifestyle.

The coursework in the Graduate Certificate in Pharmacogenomics Program, along with coursework in pharmacology, pharmacokinetics, and pharmacogenomics from the Bernard J. Dunn School of Pharmacy (BJDSOP) Doctor of Pharmacy (Pharm.D.) curriculum, serves as the didactic foundation of the M.S. in PGPM Program. Students that have completed the Graduate Certificate in Pharmacogenomics may apply to the M.S. in PGPM Program and if accepted, complete a research project in pharmacogenomics and/or personalized medicine and earn their Master of Science degree.

ADMISSION AND APPLICATION REQUIREMENTS

To be considered for admission to the M.S. in PGPM Program the student will meet the following qualifications:

- BJDSOP Pharm.D. received in 2016 or later
  - Pharm.D. cumulative GPA ≥ 3.00 AND
  - Pharm.D. cumulative sub-area GPA ≥ 3.00 (PHAR 534, 600, 632, 733, 734, and PHAR 668 or B.Pharm. Pharmacology)

- BJDSOP Graduate Certificate in Pharmacogenomics completed (or expected completion) within the last two years
  - Good academic and professional standing in the BJDSOP Graduate Certificate in Pharmacogenomics Program
  - BJDSOP Graduate Certificate in Pharmacogenomics GPA ≥ 3.00
  - Six or fewer credits of Cs combined in PGPM courses, PHAR 534, 600, 632, 733, 734, and PHAR 668 or B.Pharm. Pharmacology

- Current unrestricted license as a Pharmacist from practicing state(s) Department of Health Professions or Board of Pharmacy

- Submission of program application consisting of
  - Graduate Application through the Graduate Admissions Office
  - Official transcripts from ALL current and previous schools
  - Current Curriculum Vitae
  - One letter of reference from either a BJDSOP faculty member, APPE preceptor, or a current pharmacy supervisor (if not continuing directly into the MS program from the Graduate Certificate program)
  - Documentation of current unrestricted license as a Pharmacist from practicing state(s) Department of Health Professions or Board of Pharmacy
  - Personal Statement (750 words maximum)

Note: Your personal statement will be processed using plagiarism detection software.

APPLICATION DEADLINE
We anticipate opening applications in the summer of 2022.

September 15

START SEMESTER
Spring (January)

LOCATION
Online

PREREQUISITES
BJDSOP PharmD (2016 or later)
BJDSOP Graduate Certificate in Pharmacogenomics (within last 2 years)

DURATION
6 sequential terms beyond Pharm.D.

CREDITS
20 credits beyond Pharm.D.
3-6 credits per term

CONTACT US
PGPM Programs
PGxMasters@su.edu
(540) 542-6241

Graduate Admissions
Office of Graduate Admissions
1460 University Drive
Winchester, VA 22601
sugradadmissions@su.edu
(540) 665-4581
PROGRAM OF STUDY

The following courses count towards the Master of Science in Pharmacogenomics and Personalized Medicine degree:

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

  * from Graduate Certificate in Pharmacogenomics coursework

- Essentials of Pharmacogenomics**
- Pharmacokinetic Principles**
- Pharmacology**
- Applied Pharmacokinetics and Pharmacogenomics I**
- Applied Pharmacokinetics and Pharmacogenomics II**
- Applied Pharmacokinetics and Pharmacogenomics III**

  ** from Pharm.D. coursework

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
- Genomic Data Science
- 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 the M.S. in Pharmacogenomics and Personalized Medicine Program a full-time or part-time program?**

This program is a part time program. A three-credit research project is required to complete the M.S. in Pharmacogenomics and Personalized Medicine Program requirements after completing the Graduate Certificate in Pharmacogenomics.

**Is the M.S. in Pharmacogenomics and Personalized Medicine Program an online or in person program?**

The research project course requirement for the M.S. in Pharmacogenomics and Personalized Medicine Program can be completed online; you are not required or expected to come to a Shenandoah University campus to complete your research project.

**Do I have to have the Graduate Certificate in Pharmacogenomics to apply to the M.S. in Pharmacogenomics and Personalized Medicine Program?**

Since the field of pharmacogenomics is growing rapidly, applicants to the M.S. in Pharmacogenomics and Personalized Medicine Program must either be 1) in their final semester of the Graduate Certificate in Pharmacogenomics Program or 2) have completed the Graduate Certificate in Pharmacogenomics Program in the last two years.

**Can I substitute the Continuing Education Certificate in Pharmacogenomics and Personalized Medicine for the Graduate Certificate in Pharmacogenomics in order to apply to the M.S. in Pharmacogenomics and Personalized Medicine Program?**

The Continuing Education Certificate in Pharmacogenomics and Personalized Medicine (9 CE credits; 9 hours of instruction) is not equivalent to the Graduate Certificate in Pharmacogenomics (17 academic credits; >200 hours of instruction); these certificates are not interchangeable. If you are interested in the M.S. in Pharmacogenomics and Personalized Medicine Program, you must complete the Graduate Certificate in Pharmacogenomics.