

Certificate in Pharmacogenomics



What is Pharmacogenomics?

The field of precision medicine is becoming engrained in health care, pharmacogenomics combines the study of drugs (pharmacy) with the study of genes and their meaning (genomics) in an effort to develop an understanding of which medications are safe and effective for an individual.

The study of pharmacogenomics allows clinicians and pharmacists to take into account a patient's genetic variants prior to prescribing or dispensing a medication.

Who is the typical Certificate Earner?

Currently, graduate-level PharmD and Genetic Counseling students as well as pharmacy residents are typical certificate earners.

In the future, the program seeks expand to include course paths and focus for other working health care professionals including existing pharmacists, genetic counselors, and physicians as well as student groups including MD, DDS, DPT, and PhD students.

How long does it take to earn the certificate?

Students complete the certificate during an intensive 2 week experience, where the expected time to commit is 40 hours each week for 2 weeks. The 80 total hours of time typically occurs Monday through Friday from 8am-5pm.

What Courses are Required?

Designed as a single source experience accepted students are only required to register for an independent study (699) course. Each semester when the program is offered a UW-Madison professor will serve as the preceptor for the program.

During this experience students will learn the basics of pharmacogenomics, process for testing, interpretation of results, patient and provider counseling and consultation techniques, the ethics of genetics, implementation of the process at Marshfield Clinic, and more. At the end of the course there will be a final exam that is proctored in person.

Career Paths

The knowledge and skills acquired while earning this certificate can be applied to jobs within a wide range of local, national, and international organizations including pharmaceutical companies, private medical organizations, non-profit organizations, and academic institutions.

Who Administers the Certificate?

The [Marshfield Clinic Research Institute \(MCRI\)](#) Center for Precision Medicine Research oversees the administration of the certificate and certificate content. Each section of the program is taught by outstanding Marshfield Clinic faculty and available guest lecturers ranging from Genetic Counselors, to experts from Mayo Clinic, St. Jude Children's Research Hospital.



"Some individuals with specific genetic variants may not respond completely to a certain drug therapy, and other people with certain genetic variants may have an adverse drug reaction based on their own genetics"

- Murray Brilliant, Ph.D.

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Admission Requirements

Individuals interested in earning this certificate must be enrolled or accepted into a graduate program at UW-Madison or a practicing professional with UW-Madison, Marshfield Clinic Health System, or other affiliated organization. All individual accepted must have completed the Pre-Requisite (or similar) courses including:

- General or Introductory Biology
- General or Applied Statistics
- General Genetics or Principles of Genetics or Microbiology

How to Apply

Interested individuals must submit an application using the online [Pharmacogenomics Certificate Application](#) form.

Admissions Deadlines

Prospective certificate earners may apply any time, for admission year-round. If applying in advance, prior to the beginning of the two week program the Program Director or Coordinator will contact the earner directly to ensure the program continues to fit into their professional and educational plan.

Tuition & Costs

Unlike most certificate programs, students are not charged a direct fee for participating in this program; however, students are responsible for the following:

- When applicable, all costs related to taking an online course (e.g., internet connectivity, access to a laptop, etc.)
- When applicable, costs related to taking an in-person off campus course (e.g., housing, transportation, meals, etc.)
- Tuition costs related to an independent study course, which will be added to the Spring or Fall semester expenses
- The purchase or rental of course materials

What is the Center for Precision Medicine Research?

The [Center for Precision Medicine Research \(CPMR\)](#), was established in 2004 and focuses its research on discovering the structure of the human genome and the hunt for genes that influence human health disorders. CPMR not only supports the administration of this program but also fiscally supports students acquiring their own genetic results to assess during certificate completion.

What is Institute for Clinical and Translational Research?

The [Institute for Clinical and Translational Research \(ICTR\)](#) is part of a national consortium of research institutes funded by the National Institutes of Health with the common goal of advancing research discoveries – or “translating” them –to patients and various health care settings. Since 2007, MCRI has partnered with UW-Madison to form ICTR.



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