Pharmacologists also are concerned with the development of new drugs at the subcellular and molecular level, the tissue level, the organ level, or the whole-animal level. This can be carried out at the subcellular and molecular level, the tissue level, the organ level, or the whole-animal level. A major challenge for the science of poisons, combines the elements of biology and chemistry with those of many other disciplines to help us understand the harmful effects of chemicals on living organisms. Toxicologists find scientifically sound answers to questions about chemicals that may potentially threaten our health, about pesticides in the food we eat, pollutants in the air we breathe, chemicals in the water we drink, and toxic waste sites near our homes. Some toxicologists are concerned with determining the cellular mechanisms by which drugs and chemicals produce toxic effects. Many are involved in subspecialty areas in toxicology research, such as reproductive and developmental toxicology, neurotoxicology, immunotoxicology, and inhalation toxicology. Researchers in these areas utilize both laboratory animals and in vitro systems to examine the cellular, biochemical, and molecular processes underlying toxic responses.

**B.S. IN PHARMACEUTICAL SCIENCES**

The B.S. in Pharmaceutical Sciences is not a major, but is an internal degree granted to current Doctor of Pharmacy (Pharm.D.) students after they complete at least one year of the Pharm.D. program. In order to qualify for the B.S. in Pharmaceutical Sciences, students must have attended UW–Madison as an undergraduate prior to entering the School of Pharmacy and must meet all degree requirements.

**DEGREES/MAJORS/CERTIFICATES**

- Pharmaceutical Sciences, B.S. (http://guide.wisc.edu/undergraduate/pharmacy/pharmacy/pharmaceutical-sciences-bs/)
- Pharmacology and Toxicology, B.S. (http://guide.wisc.edu/undergraduate/pharmacy/pharmacy/pharmacology-toxicology-bs/)

**ENTERING THE SCHOOL**

Admission to either the B.S. in Pharmacology and Toxicology or the Doctor of Pharmacy program is selective and competitive, and requires specific prerequisite coursework as well as a complete admissions application. Completion of required prerequisite coursework does not guarantee admission. Each applicant’s admission credentials are considered not only on their own merit, but also in comparison with the credentials of other applicants.

For detailed information on prerequisites and the application for the B.S. in Pharmacology and Toxicology (PharmTox), see the major’s "How to Get In" tab in the (http://guide.wisc.edu/undergraduate/pharmacy/pharmacy/pharmacology-toxicology-bs/#howtoge getintext)Guide.

Information about the required elements of the application and prerequisites for the Pharm.D. (Doctor of Pharmacy) program can be found on the School of Pharmacy website (https://pharmacy.wisc.edu/programs/pharmd/admissions/).

Most pre-pharmacy students are admitted to UW-Madison as College of Letters & Science students with an intention to pursue a School of Pharmacy program (PharmTox undergraduate degree and/or the professional Pharm.D. program). While our School of Pharmacy does not directly admit students from high school, we do offer comprehensive academic, admissions, and career advising to students who have expressed an interest either of these programs. Please refer to the Resources (https://guide.wisc.edu/undergraduate/pharmacy/#resourcecontext) section to start exploring available resources and opportunities to participate in the exciting field of health care and the comprehensive health care team; the expertise of pharmacists is vital in this changing system. Pharmacists are important members of the health care system and the growing complexities of providing optimal pharmaceutical care to patients. This care requires that pharmacists be effective health educators. The ultimate success of drug therapy can depend upon how well patients understand and follow their drug regimens. Therefore, opportunities for the development and improvement of communication skills, both written and oral, are essential components of the Pharm.D. professional curriculum; required and elective courses throughout the curriculum provide valuable practical experience in effective interaction with patients and other health practitioners.

Pharmacy offers many career opportunities. Graduates traditionally have pursued careers in community, hospital, and long-term care pharmacy, the pharmaceutical industry, pharmacy education, and government agencies. Pharmacists serve also in other roles, including managed care, home care, and primary care, to increase the availability and quality of pharmaceutical care.

**B.S. IN PHARMACOLOGY AND TOXICOLOGY**

The B.S. in Pharmacology and Toxicology (PharmTox) focuses on the biomedical sciences. Pharmacology is concerned with the properties, effects, and mechanisms of action of drugs, and with the interactions between chemical agents and biological systems. Toxicology, the science of poisons, combines the elements of biology and chemistry with those of many other disciplines to help us understand the harmful effects of chemicals on living organisms.

A major challenge for the pharmacologist is to determine how drugs act. This can be carried out at the subcellular and molecular level, the cellular level, the tissue level, the organ level, or the whole-animal level. Pharmacologists also are concerned with the development of new drugs that produce fewer side effects while curing disease, and provide more effective and/or more rapid treatment of disease in humans or animals.

SCHOOL OF PHARMACY

Established by the Wisconsin Legislature in 1883, the "Department of Pharmacy" was the second pharmacy school in the United States associated with a state university. The School of Pharmacy offers two degrees available to undergraduate-level students: the **Doctor of Pharmacy (Pharm.D.)** degree, and the **Bachelor of Science in Pharmacology and Toxicology (PharmTox)** degree. The school also offers several M.S. and Ph.D. degrees.

With an enrollment of more than 500 undergraduate and professional students, the School of Pharmacy is part of the Center for Health Sciences, which includes the School of Medicine and Public Health, the School of Nursing, University Hospital and Clinics, and the State Laboratory of Hygiene. Students have opportunities to interact with other students and professional personnel in related fields as they prepare to meet the health care needs of society.

**DOCTOR OF PHARMACY (PHARM.D.)**

Pharm.D. graduates are presented with opportunity and challenge: the opportunity to participate in the exciting field of health care and the challenge of expanding the role of the pharmacy professional within this changing system. Pharmacists are important members of the comprehensive health care team; the expertise of pharmacists is vital to the success of the health care team as it designs, implements, and monitors drug therapy for the benefit of patients. Pharmacists use their expertise to keep pace with the rapid changes taking place in the health care system and the growing complexities of providing optimal pharmaceutical care to patients. This care requires that pharmacists be effective health educators. The ultimate success of drug therapy can depend upon how well patients understand and follow their drug regimens. Therefore, opportunities for the development and improvement of communication skills, both written and oral, are essential components of the Pharm.D. professional curriculum; required and elective courses throughout the curriculum provide valuable practical experience in effective interaction with patients and other health practitioners.

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opportunities available for pre-School of Pharmacy students at UW-Madison.

POLICIES AND REGULATIONS

BACHELOR OF SCIENCE - PHARMACOLOGY AND TOXICOLOGY POLICIES

For a list of Pharmacology and Toxicology (PharmTox) undergraduate policies, including academic standing and probation policies, please visit the PharmTox Policy Handbook (https://students.pharmacy.wisc.edu/pharm-tox-handbook/).

RESOURCES

ACADEMIC ADVISING

If you’re a current UW–Madison undergraduate student, you have access to dedicated, structured pre-pharmacy advising at the School of Pharmacy. Please choose the School of Pharmacy as your advising group option when you make your SOAR reservation in April. We’re here to help you with:

• Career paths related to pharmacy, pharmacology, and toxicology
• Understanding prerequisites and developing a plan for completion
• Accessing courses and guidance on how to sequence classes
• Pharm.D. and PharmTox curriculum and degree options
• Admissions selection criteria
• Application process and components

Who is a pre-pharmacy student? A pre-pharmacy student is anyone who is taking the courses necessary to be considered for admission to the Doctor of Pharmacy (Pharm.D.) professional program and/or the B.S. in Pharmacology and Toxicology (PharmTox) at the UW–Madison School of Pharmacy. Completion of prerequisite coursework does not guarantee admission as admission is selective and competitive.

How do I get started with pre-pharmacy advising? Schedule your pre-pharmacy advising appointment using the Starfish app (https://wisc.starfishsolutions.com/starfish-ops/) in MyUW. Search for “Kendra Gurnee” to meet with the pre-PharmTox advisor or “Amy Zwaska” to meet with the pre-Pharm.D. advisor. Any UW–Madison student with any major or no major can access our dedicated pre-pharmacy advising services at the School of Pharmacy. Individual appointments are typically scheduled for 30 minutes.

If you experience any trouble with the scheduling process:

• You can get help with Starfish here (https://advising.wisc.edu/facstaff/starfish/starfish-student-resources/).
• You can also contact the School of Pharmacy Student and Academic Affairs Office at 608-262-6234 to set up your advising appointment.

Due to the selective nature of the Pharm.D. and PharmTox admissions processes, interested students are encouraged to meet with School of Pharmacy advisors early and often to explore our programs and get valuable guidance about prerequisites, selection criteria, application timeline/procedures, and career opportunities. We recommend that you meet with your pre-pharmacy advisor at least once per semester.

For more information on preparing for and applying to our programs, visit our admissions resources for Pharm.D. (https://pharmacy.wisc.edu/academics/pharmd/admissions/) and PharmTox (https://pharmacy.wisc.edu/academics/pharm-tox/admissions/).

FINANCIAL AID

Students who seek financial assistance should contact the UW–Madison Office of Student Financial Aid (https://financialaid.wisc.edu/) for financial aid applications and information about scholarships, loans, grants, work-study programs, and student employment.

SCHOOL OF PHARMACY SCHOLARSHIPS

The School of Pharmacy awards a variety of scholarships each year to admitted PharmTox and Pharm.D. students. Awards are based on both academic merit and financial need. Students are invited to apply to School of Pharmacy-specific scholarships, as well as campus-wide or non-Pharmacy scholarships, through the Wisconsin Scholarship Hub (https://wisc.academicworks.com/).

STUDENT ORGANIZATIONS

Students will find many organizations of interest, both in the School and across the UW–Madison campus. The School of Pharmacy student organizations website (https://students.pharmacy.wisc.edu/student-life/student-organizations/) has a comprehensive listing of student organizations and groups that are affiliated with the School.

FACILITIES

The School of Pharmacy is located in Rennebohm Hall on the west side of campus, near University Hospital and Clinics and Health Sciences Learning Center. The School of Pharmacy provides students and faculty with the finest possible physical environment for professional pharmacy and for research in pharmaceutical fields of study.