Why the University at Buffalo School of Pharmacy and Pharmaceutical Sciences?

Your education in Buffalo will extend far beyond the classroom as you work side-by-side with your professors and peers to tackle real-world issues facing our society and see real-world results.

1. **Top Pharmacy School and World Leader in PK/PD**
   
   Ranked among the top pharmacy schools in the U.S. and a world leader in pharmacokinetics, pharmacodynamics and biopharmaceutics, you’ll learn alongside the brightest students and from the most renowned faculty in the discipline.

2. **Innovative Curriculum and Experiential Education**
   
   From neighborhood pharmacies to federal regulatory agencies, to international training sites, University at Buffalo graduates have the professional practice experience and broad educational base to assume leadership roles anywhere within the pharmacy industry. Our innovative curriculum including specialized programs, wide-ranging experiential education rotations, dual/collaborative degrees, and post graduate education is available in our diverse residency and fellowship training programs.

3. **Graduating Pharmacy Leaders**
   
   Our commitment to excellence has resulted in a 99% employment rate for our graduates while providing them with the skills and knowledge for further career advancement. Industry-leading employers recognize the University at Buffalo’s academic rigor—our graduates assume diverse leadership roles in all practice areas of pharmacy and have the skills to impact the health and well-being of the global economy they will serve.

4. **Dynamic Learning Environment**
   
   LEED Gold-certified John and Editha Kapoor Hall offers a cutting-edge pharmaceutical care and teaching center, a patient assessment suite and a state-of-the-art model pharmacy, which gives you the opportunity to practice and perfect community and hospital-based pharmacy practice training.

5. **Pushing the Boundaries in Education and Research**
   
   From pioneering a pharmacogenomics curriculum to originating the nation’s first HIV antiviral treatment certification program, research to improve the health and well-being of the population is flourishing at UB. Learn more about our innovative research centers at pharmacy.buffalo.edu/research.
Our graduates are among the most sought-after in the country

As part of an unparalleled program that promotes excellence and integrity, we prepare the pharmacist to be a member of the healthcare team, working with physicians, non-physician providers and other allied health professionals.

The PharmD program at the University at Buffalo School of Pharmacy and Pharmaceutical Sciences (SPPS), is a four-year professional program, following undegraduate pre-pharmacy coursework. It is a professional degree that enables one to work as a pharmacist, interacting with patients and other health care practitioners for matters involving treatment by medications.

Upon graduating, our students have many career options, including working in a community pharmacy, hospital, university, government agency, pharmaceutical research company, nursing home, hospice and home care. Pharmacists can also choose a specific population to work with such as newborns, geriatrics and even veterinary care.

A curriculum for success

Our unique and challenging PharmD curriculum blends theory and practice, building a solid foundation in the basic biomedical sciences, clinical sciences, pharmaceutical sciences and pharmacy practice. Students choose from electives that highlight several areas including inpatient care, outpatient care, research and teaching. Coursework is capped by a full-time, 9-month advanced experiential program at one of many health care agencies across the country, leading to licensure in any state.

Our innovative curriculum allows the next generation of pharmacy leaders to possess the skills and knowledge needed to succeed.

For a detailed overview of our curriculum, visit pharmacy.buffalo.edu/pharmd.

PharmD Prerequisite Courses

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Introductory Biology I and II with Labs</td>
<td>Anatomy</td>
</tr>
<tr>
<td>General/Inorganic Chemistry I and II with Labs</td>
<td>Physiology I and II</td>
</tr>
<tr>
<td>Organic Chemistry I and II with Labs</td>
<td>Biochemistry</td>
</tr>
<tr>
<td>Calculus I and II</td>
<td>Microbiology</td>
</tr>
<tr>
<td>Physics I</td>
<td>Statistics</td>
</tr>
<tr>
<td>English Composition I and II</td>
<td>Social Science</td>
</tr>
</tbody>
</table>

General Education Program Requirements

For a detailed list of required prerequisite courses for EA, visit pharmacy.buffalo.edu/pre-ea.

For a detailed list of required prerequisite courses for PharmCAS, visit pharmacy.buffalo.edu/pre-pharmcas.

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There are many opportunities at UB for innovative practice, whether that’s participating in patient-centered collaborative healthcare teams, novel continuing education instruction or multidisciplinary research opportunities.
PharmD – How to Apply

There are two ways to enter our PharmD program:

1. Early Assurance Program: EA @ UB is 2+4=6
   Incoming University at Buffalo freshmen who indicate pharmacy as their major are automatically admitted to our Doctor of Pharmacy (PharmD) degree through our prestigious Early Assurance (EA) Program. This program gives talented freshmen the heightened advantage of securing a seat in our four-year PharmD program after completing two years of prescribed undergraduate course work. There are no additional high school GPA or SAT/ACT requirements and EA students are exempt from the Pharmacy College Admission Test (PCAT).

   Getting started with Early Assurance:
   - Undergraduate Admissions application process: admissions.buffalo.edu
   - School of Pharmacy and Pharmaceutical Sciences supplemental form and fee (after UB acceptance)

   Early Assurance requirements:
   - Prerequisite math and science courses and General Education requirements
   - Minimum prerequisite course grade of ‘C’ or higher, prerequisite GPA of 3.3 or higher
   - Strong oral and written English language communication skills
   - Interview

   Learn more about Early Assurance at pharmacy.buffalo.edu/ea.

2. PharmCAS (Pharmacy College Application Service)
   Transfers and students who do not choose Early Assurance may apply to the PharmD program via PharmCAS through regular or early decision. Students must have all undergraduate prerequisite courses completed by the end of the summer semester prior to fall matriculation.

   Getting started with PharmCAS:
   - PharmCAS application: pharmcas.org
   - School of Pharmacy and Pharmaceutical Sciences supplemental form and fee
   - Pharmacy College Admission Test (PCAT): pcatweb.info

   PharmCAS requirements:
   - Prerequisite math and science courses and General Education requirements
   - Minimum prerequisite course grade of ‘C’ or higher, GPA of 3.0 or higher and PCAT score of 300 or higher
   - Strong oral and written English language communication skills
   - Letters of reference and personal statement
   - Interview

   Learn more about PharmCAS at pharmacy.buffalo.edu/pharmcas.

Caitlin Hoar knew in high school that she wanted to be a pharmacist—she was accepted into Buffalo’s early assurance program her senior year. Caitlin has completed several rotations, working with diabetes patients, veterans, general medicine hospital patients, and even her fellow UB pharmacy students.

Selection is based on scholastic achievement, aptitude, personal qualifications and evidence of motivation toward pharmacy. These are judged from the college record, grade point average, the PCAT, letters of reference and evaluation, a supplemental application and a personal interview. In addition to intellectual and academic competence, the school’s admissions committee considers communication skills, leadership ability, community service, health care-related or research experience and motivation for pursuing a career in pharmacy.

My ideal job is to work as part of a medical team in a doctor’s office or clinic, collaborating with physicians, nurse practitioners, nurses and other health professionals on patient care."

pharmacy.buffalo.edu 3
Critical discovery and development

The pharmaceutical sciences are interdisciplinary fields of study seeking to better understand and control the factors influencing clinical response to drug therapy.

Undergraduate Program

A bachelor of science (BS) degree in the pharmaceutical sciences combines chemistry, biology, mathematics and computer techniques with human pharmacology, physiology and biochemistry to work on the development of treatments to prevent disease and improve health.

This four-year interdisciplinary program focuses on the design, development and rational use of medication for the prevention and treatment of disease, as well as the drug development and research process. Interested students must first apply, and be accepted into, the University at Buffalo and are then encouraged to apply to the pharmaceutical sciences program in their sophomore year.

Learn more about our undergraduate pharmaceutical sciences program at pharmacy.buffalo.edu/pharmsci.

Graduate Programs

Graduate programs in pharmaceutical sciences are research-focused academic experiences that immerse students in diverse aspects of drug action, from drug discovery to various elements of drug evaluation. Learning in a unique interdisciplinary environment, students explore the pharmaceutical sciences at the molecular, genomic, biochemical, biological and clinical levels. Highly competitive postdoctoral training is also available.

Graduate Program Degrees

<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS/MS</td>
<td>This accelerated program for academically-qualified students allows for completion of both BS and MS requirements in five years. In comparison, separate completion of these two degrees normally requires five-and-a-half to six-and-a-half years. Only students enrolled in the BS program in pharmaceutical sciences with a minimum GPA of 3.0 may apply.</td>
</tr>
<tr>
<td>MS</td>
<td>The MS in pharmaceutical sciences is a two- to two-and-a-half-year degree program for students in a particular subspecialty of the pharmaceutical sciences, including pharmaceutical analysis, basic pharmaceutical sciences research, drug formulation/delivery/development, drug metabolism/transport, drug analysis, experimental pharmacokinetics and pharmacodynamics, pharmacogenetics/pharmacogenomics, clinical research or pharmacometrics. We are the first school in the nation to offer an MS with a focus in pharmacometrics.</td>
</tr>
<tr>
<td>PhD</td>
<td>The PhD program in pharmaceutical sciences admits students with a previously-earned four-year BS degree, preferably in the life or physical sciences, or MS degree (an MS degree is not a prerequisite). Depending on individual progress, the degree is normally completed in four to six years.</td>
</tr>
<tr>
<td>PharmD/PhD</td>
<td>Collaborative degrees in pharmaceutical sciences are available for those who are interested in gaining stellar research skills. Students apply after their first professional PharmD year.</td>
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<tr>
<td>PharmD/MS</td>
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Learn more about our graduate-level pharmaceutical sciences programs at pharmacy.buffalo.edu/pharmsci-grad.
Collaborative Degrees

Taking the value of your degree to a new level

The School of Pharmacy and Pharmaceutical Sciences offers five unique dual/collaborative degree programs that save you time, money and increase your employment marketability.

<table>
<thead>
<tr>
<th>Dual / Collaborative Degree Program</th>
<th>Program Length</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>PharmD/JD</td>
<td>7 years</td>
<td>The doctor of pharmacy and doctor of jurisprudence (PharmD/JD) is a collaborative degree that helps students develop a unique skill set desired by employers in federal regulatory agencies, the pharmaceutical and biotechnology industries, private practice and beyond.</td>
</tr>
<tr>
<td>PharmD/MBA</td>
<td>5 years</td>
<td>The School of Management and the School of Pharmacy and Pharmaceutical Sciences jointly offer a five-year program leading to the PharmD/master of business administration (MBA) degree, which instills the business background and skills necessary to enter leadership positions that demand knowledge of health sciences management.</td>
</tr>
<tr>
<td>PharmD/MPH</td>
<td>5 years</td>
<td>The School of Public Health and Health Professions and the School of Pharmacy and Pharmaceutical Sciences jointly offer a five-year program leading to the PharmD/master of public health (MPH) degree. Students choose from one of three concentrations: Community Health and Health Behavior, Epidemiology, or Health Services Administration. Graduates of this program assume leadership positions in health departments at the local, state, national and international levels as well as serve as excellent faculty members for schools of public health, health professions and pharmacy.</td>
</tr>
<tr>
<td>PharmD/PhD</td>
<td>~7 years</td>
<td>The School of Pharmacy and Pharmaceutical Sciences offers the PharmD/doctorate of philosophy in pharmaceutical sciences (PhD) as well as the PharmD/master of science (MS) collaborative degrees for those who are interested in gaining stellar research skills to work in academia, research institutes or federal and other regulatory agencies.</td>
</tr>
<tr>
<td>PharmD/MS</td>
<td>~5 years</td>
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</table>

Qualifications:

With the exception of the PharmD/JD, students apply during or after their P1 year. Students who qualify generally have at least a 3.0 overall GPA and competitive scores on entrance exams, such as the GRE or PCAT. Students apply to the JD before their first year; apply to the PharmD program and request deferred admission. Apply to the JD program before entering the PharmD program.

Learn more about our dual/collaborative degree programs at pharmacy.buffalo.edu/dual.
Residency training programs

The UB School of Pharmacy and Pharmaceutical Sciences was a leader in the development of post-graduate pharmacy training and continues to offer progressive training in all practice settings.

Our ASHP-accredited residencies offer outstanding training in a variety of practice sites including an advanced academic medical center, primary care practices designated as patient-centered medical homes, innovative independent community pharmacies, a world-class HIV/AIDS immunodeficiency clinic and psychiatric services.

The goal of our residency program is to develop leaders who will practice autonomously as an integral member of the health-care team in the clinical pharmacy setting and/or as a clinical faculty member in the academic setting in a professional, ethical and highly competent manner.

Our PharmD curriculum prepares students for post-graduate training. UB pharmacy students have a residency match rate equal to or exceeding national match rate scores. If post-graduate training is part of your future, UB will prepare you for this next step within our own competitive residency training programs or programs across the nation.

For additional residency information, visit pharmacy.buffalo.edu/residency.

Fellowship programs

Fellowships are post-graduate programs that provide training for both clinical and bench research interests.

UB offers competitive research fellowships in our department of pharmaceutical sciences as well as can create clinical fellowship opportunities with the department of pharmacy practice supporting industry based fellowships.

For additional fellowship information, visit pharmacy.buffalo.edu/fellowship.
Expanding opportunities through global outreach

The University at Buffalo School of Pharmacy and Pharmaceutical Sciences reaches out to underserved communities and improves health outcomes around the corner and across the globe.

Experiential Education and Service Learning

We provide a diverse and progressive experiential education program with over 650 national and international training sites where students can participate in community wellness clinics and clinically-oriented patient education programs, culminating in full-time, advanced pharmacy practice rotations. Students travel near and far to make a positive impact on the health and well-being of the global communities they will serve. In Buffalo, we are very fortunate to have multiple comprehensive health systems as well as world-renowned specialty health care and research institutions, such as Roswell Park Cancer Institute and Dent Neurological Institute. These local centers allow our students access to patients with an array of health and psychosocial issues.

Internationally-Renowned HIV/AIDS Pharmacology Research

With over 10% of Zimbabwe’s population living with HIV/AIDS, the need for new drugs and new treatment protocols is crucial. To address this, the University at Buffalo has been working with the University of Zimbabwe (UZ) to establish training programs to study, reduce and treat the incidence of HIV and other infectious disease in Zimbabwe, as well as throughout sub-Saharan Africa.

Gene D. Morse, PharmD, associate director of the Center for Excellence in Bioinformatics and Life Sciences (CBLS) and SUNY Distinguished Professor, is internationally-renowned for his work in HIV/AIDS pharmacotherapy and has led UB’s sustainable initiatives for global health issues for many years. Under his direction, UB’s collaboration with UZ has increased capacity for HIV/AIDS pharmacology research and therapeutic treatment for these at-risk populations.

UB Student Pharmacists for Global Outreach

Student Pharmacists for Global Outreach (SPGO) is a student-led organization focused on outreach initiatives for underserved populations on the local, national and international level. SPGO is responsible for organizing annual international medical mission trips to locations such as Honduras and the Dominican Republic, as well as national and local trips to community clinics, refugee centers and non-profit outreach centers. Students also have the opportunity to attend the annual Global Missions Health Conference in November.

High School STEM Outreach

Through the UB-led Interdisciplinary Sciences and Engineering Partnership (ISEP), students volunteer at Bennett High School, a local “high needs” city school. Their goal? To get students excited about science and secondary education, from lab work help to running afterschool science clubs.

UB collaborates with other local ISEP partners, including the Buffalo Public Schools, to reform STEM education by improving teachers’ skills and student experiences. Pharmacy and pharmaceutical sciences students work with at-risk students at Bennett to provide career advisement, introduce basic science curriculum and assist teaching staff with other supplemental programs.

Learn more about how we serve the community at pharmacy.buffalo.edu/service.
We believe strongly in the value of collaboration

The University at Buffalo’s unique centers focused on healthcare, research and economic growth, combined with Western New York’s strong health care systems, provide health science students with unparalleled, hands-on clinical training.

Academic Health Center (AHC)

An academic health center brings together the talents of clinicians, educators, students and researchers to improve the understanding and treatment of disease. UB is home to one of the most comprehensive AHCs in the nation, comprising the School Pharmacy and Pharmaceutical Sciences and the schools of Dental Medicine, Medicine and Biomedical Sciences, Nursing, and Public Health and Health Professions.

The mission of the AHC is to provide a superb research and educational environment to foster basic discovery in the biosciences, health-sciences, translational research, preventive and interventional clinical trials, superb clinical care, and training of the next generation of health care practitioners.

Among the prestigious Association of American Universities, UB is one of only 10 institutions across the nation to have built an Academic Health Center that includes the full complement of health schools.

Behling Simulation Center

The mission of the Behling Simulation Center is to foster highly collaborative, interprofessional education between the students and faculty of the UB health sciences schools through the application and use of simulation technologies. The 10,000+ square-foot facility includes flexible clinical rooms, a pharmacy, debriefing rooms, a home care room and a nursing station.

Interdisciplinary professional health student education occurs daily within the center, with the primary goals of improving interprofessional student performance, reducing health care errors and promoting competent and excellent patient care.

New York State Center of Excellence in Bioinformatics and Life Sciences (CBLS)

The CBLS is a research hub for scientists, a source of innovation for industry and an economic engine for the Buffalo Niagara region. UB students from across the disciplines conduct scholarship and research within CBLS laboratories and start up incubators under the guidance of renowned faculty, entrepreneurs and industry leaders. These unique collaborations help generate new ideas, leading to innovative research and economic generation.

Clinical Translational Research Center (CTRC)

The CTRC links clinical care and teaching with research and commercial application. Along with key community partners in the health sciences, it is one of a handful of such facilities in the nation. It is the home for outstanding clinical and translational science and is the hub of the Buffalo Translational Consortium, providing innovative research tools, support, training, resources and coordination.

Affiliated Teaching Hospitals and Health Systems

We are very fortunate to have comprehensive health systems centers as well as world-renowned specialty health care affiliations with Kaleida Health System, Erie County Medical Center, Veterans Affairs Western New York Healthcare System, Catholic Health System, Buffalo Psychiatric Center and Roswell Park Cancer Institute.
About the University at Buffalo

The University at Buffalo is a premier, research-intensive public university dedicated to academic excellence. It is the largest and most comprehensive campus in the 64-campus SUNY system.

Our thinking, research, creative activity and people positively impact the world. We’re an established leader and are consistently recognized by top university guides and publications for our excellent value and high-quality academics.

Learn more about UB at pharmacy.buffalo.edu/ub.

A Value Investment

A UB education is an excellent value. As a public university, we are only a fraction of the cost of attending a private college or university of comparable quality and opportunity. We offer $350,000 in competitive scholarships annually, thanks to the generosity of alumni, friends, and various organizations/corporations.

Students may apply for residency to be eligible for in-state tuition one year after a student has established a New York State domicile.

Learn more at pharmacy.buffalo.edu/financial-aid.

Buffalo-Niagara: Our Hometown

Gorgeous landscapes, a world-class art museum and some of America’s greatest architecture. And that’s just for starters. The Buffalo-Niagara region is a major metropolitan area with a diverse blend of communities, characterized by a neighborly way of life, an unpretentious nature and spirited loyalty among residents.

Learn more about Buffalo at pharmacy.buffalo.edu/buffalo.
Contact us to schedule a visit!

University at Buffalo School of Pharmacy and Pharmaceutical Sciences
Office of Admissions and Advisement
270 Kapoor Hall | Buffalo, NY 14214 | prepharm@buffalo.edu | 716-645-2825

pharmacy.buffalo.edu/admissions