

**For pre-pharmacy or pre-pharmaceutical sciences
advisement, please contact:**

School of Pharmacy and Pharmaceutical Sciences
The State University of New York at Buffalo
Office of Admissions and Advisement
112 Cooke Hall
Buffalo, NY 14260-1200
Tel: (716) 645-2825
Fax: (716) 645-3688
Email: pharm-admin@buffalo.edu
Website: www.pharmacy.buffalo.edu/admissions

 School of Pharmacy and Pharmaceutical Sciences
University at Buffalo *The State University of New York*

Lead. Care. Create.



 School of Pharmacy and Pharmaceutical Sciences
University at Buffalo *The State University of New York*

UB's School of Pharmacy and Pharmaceutical Sciences is rated as having the top program in the northeast and one of the top programs in the nation by *U.S. News & World Report*.

Lead. Care. Create.

Since 1886, the University at Buffalo School of Pharmacy and Pharmaceutical Sciences has been a national leader in education and research in both pharmacy practice and the pharmaceutical sciences. From pioneering a cutting-edge pharmacogenomics curriculum to originating the nation's first HIV antiviral treatment certification program, your work here will make you part of a proud tradition.

As the only pharmacy school in the State University of New York (SUNY) system, you'll learn alongside the best and brightest students and from some of the most renowned faculty in the discipline. Industry-leading employers recognize UB'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.

Small school attention, large school resources

For Pharmacy and Pharmaceutical Sciences students, UB is more than just an education — it's an experience. The success of the school's graduates is rooted in the close-knit community of students, alumni, and faculty who work together to create an atmosphere of active collaboration and mentorship. The guidance of this cohesive community prepares you to engage with over 160 rotational sites where you will have the opportunity to learn from the best practicing pharmacists in the nation as you begin your experiential rotations.

Our internationally recognized faculty are respected worldwide for their research innovations, educational leadership, industry experience, and commitment to one-on-one student attention. At UB, your education will push the boundaries of a traditional curriculum, as you work side-by-side with your professors and classmates to tackle real-world issues facing our society.

"UB's doctor of pharmacy (PharmD) program curriculum prepares students for a lifetime of learning and provides essential professional experience. From the extensive research opportunities and variety of practice sites offered, I am ready to conquer anything as a new practitioner."

Jordan Csati, PharmD, 2008



Pharmacy Practice (PharmD)

Pharmacy practice is among the most rewarding careers in today's rapidly expanding health care landscape. Our comprehensive doctor of pharmacy (PharmD) academic program prepares the brightest and most sought-after graduates in the country.

The PharmD, an entry-level professional degree that enables one to work as a pharmacist, takes a minimum of six years to complete. The pre-pharmacy years consist of undergraduate prerequisite coursework in chemistry, biology, statistics, calculus, organic chemistry, and physics. The last four years are devoted to the PharmD professional program.

A curriculum for success

UB's unique and challenging PharmD curriculum blends theory and practice, building a solid foundation in the medical and biological sciences before immersing students in real-world situations. Students choose from four tracks — outpatient care, applied pharmacotherapy, clinical research, or pharmaceutical sciences research – and pursue a course of study that culminates in an advanced experiential learning rotation in the fourth year of the PharmD professional program.

Typical PharmD Curriculum

Year 1	Undergraduate prerequisite coursework*
Year 2	Undergraduate prerequisite coursework*
Year 3	First Professional Year
Year 4	Second Professional Year
Year 5	Third Professional Year
Year 6	Fourth Professional Year/Experiential Year

* Students may choose to complete a junior year of college or pursue a BA/BS or higher level degree prior to applying.

Required Prerequisites

Please visit www.pharmacy.buffalo.edu/admissions for a detailed list of required prerequisite courses.

"I chose the PharmD program at UB because it is a small school inside of a large university. It is the best of both worlds. With smaller class sizes and closer relationships with fellow students and faculty, you enjoy the benefits of a large, diverse campus. I also chose UB for the excellent value with world class faculty and facilities for public university prices. I came from out-of-state and qualifying for in-state tuition was easy and convenient."

Tyler Smith-Strutz, PharmD, 2007

PharmD—How to Apply

Learn more about how to apply to the doctor of pharmacy (PharmD) program, read Frequently Asked Questions, and get important tips on the application process at www.pharmacy.buffalo.edu/admissions_pharmd.

Admission to the doctor of pharmacy (PharmD) program at the University at Buffalo is highly selective. There are two types of applications:

Early Assurance

Interested students must first apply, and be accepted into, the University at Buffalo directly from high school and indicate pharmacy as their intended major. Learn more about Early Assurance at www.pharmacy.buffalo.edu/admissions_pharmd_ea.

Regular Admission

Regular admission applicants are those students currently enrolled at UB or other institutions or who have already completed a college degree. The deadline for all regular admission applications is February 1. Candidates seeking regular admission must complete the following steps:

- PharmCAS application: www.pharmcas.org
- School of Pharmacy and Pharmaceutical Sciences supplemental application and fee
- Pharmacy College Admission Test (PCAT): www.pcatweb.info
- All required prerequisite courses

Regular Admission Criteria

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.

- Minimum GPA of 3.0 (based on pre-pharmacy math and science courses)
- Minimum percentage of 300 on the Pharmacy College Admission Test (PCAT). The sum of each item under the Percentile Rank (Verbal Ability, Biology, Reading Comprehension, Quantitative Ability, and Chemistry) determines the score (not the Composite score).

For more information on admissions criteria and the application process, visit www.pharmacy.buffalo.edu/admissions_pharmd.

"What makes us great? Small classes, the best students, faculty who are specialists in their field — it's like a private school education with public school costs."

Swati Patel, PharmD, 2003

Collaborative Degree Programs

The School of Pharmacy and Pharmaceutical Sciences is one of the only schools in the nation to offer unique collaborative degree programs that address the shifting dynamics in the delivery of health care. These broad-based, interdisciplinary programs position our graduates to fill the demanding leadership roles of the future.

PharmD/JD

The doctor of pharmacy and doctor of jurisprudence (PharmD/JD) six-year collaborative degree helps students develop a unique skill set desired by employers in federal regulatory agencies, the pharmaceutical and biotechnology industries, private practice, and beyond. To apply, candidates must submit separate applications to the Law School and the School of Pharmacy and Pharmaceutical Sciences. Access the UB School of Law application at www.law.buffalo.edu.

PharmD/MBA

The School of Management and the School of Pharmacy and Pharmaceutical Sciences jointly offer a seven-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. Students wishing to pursue the dual program should apply during their first professional year of study. Admission will be limited to students who have demonstrated superior capabilities. Applications for the MBA program may be obtained online at www.mgt.buffalo.edu.

PharmD/MPH

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. 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. Students apply to the Graduate School during their second professional year of study. Applications may be obtained online at www.grad.buffalo.edu/admissions.

The School of Pharmacy and Pharmaceutical Sciences will also offer the PharmD/doctorate in pharmaceutical sciences (PhD) collaborative degree (expected 2009). Learn more about collaborative degree programs at www.pharmacy.buffalo.edu/school_degrees_granted.shtml.

“You cannot beat the value that the UB School of Pharmacy and Pharmaceutical Sciences provides. Graduating from a top-notch, nationally ranked pharmacy program sets you on the path of a long and rewarding career - for a very reasonable, comparative price. For those who wish to take a more business-oriented approach to pharmacy, UB offers the joint PharmD/MBA in conjunction with the School of Management which is recognized as one of the best programs in the world.”

Keith Wagner, PharmD, 2000, MBA, 2003

Want to learn more about life and learning at UB's School of Pharmacy and Pharmaceutical Sciences? Check out our blogs to hear the straight story from current students, faculty, and alumni. www.pharmacy.buffalo.edu/admissions_blogs

Undergraduate Program in Pharmaceutical Sciences (BS)

If you are interested in combining chemistry, biology, mathematics, and computer science with human anatomy, physiology, and biochemistry to work on the development of treatments to prevent disease and improve health, a bachelor of science (BS) degree in the pharmaceutical sciences may be for you.

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.

Graduates with a pharmaceutical sciences background enjoy rewarding careers in academia, hospital, and pharmaceutical industry settings.

How to Apply

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. Get started today at www.admissions.buffalo.edu/apply.

Pharmacy Practice vs. Pharmaceutical Sciences

The doctor of pharmacy (PharmD) is a professional, entry-level degree that qualifies one to be a practicing pharmacist, working directly with patients and other health care professionals. A degree in pharmaceutical sciences prepares graduates to work in a research setting, primarily drug development and pharmaceutical industry research.

To learn more about the BS in Pharmaceutical Sciences, visit www.pharmacy.buffalo.edu/admissions_psci.



UB pharmaceutical sciences graduates are highly sought after by the pharmaceutical industry — approximately 90 percent of our graduates obtain employment in the pharmaceutical industry, with the other 10 percent going on to graduate school.

Graduate Programs in Pharmaceutical Sciences

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.

BS/MS

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 years.

How to Apply

Only students enrolled in the BS program in pharmaceutical sciences with a strong academic record (a minimum GPA of 3.0) may apply.

MS

The MS in pharmaceutical sciences is a two- to three-year degree program (30 credit hours) for students with a previously earned four-year BS degree. Students have the opportunity to concentrate their studies 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.

How to Apply

Applying online to the Department of Pharmaceutical Sciences MS program is easy. Just fill out the online application and submit the supplemental materials. Get started at www.pharmacy.buffalo.edu/psci_grad_apply.

Faculty Focus

The School of Pharmacy and Pharmaceutical Sciences is home to three SUNY Distinguished Teaching Professors and seven faculty members have received the SUNY Chancellor's Award for Excellence. Numerous faculty members have also received recognition in their areas of specialization, including patents, grants, and national awards.



PhD in Pharmaceutical Sciences

The PhD program in pharmaceutical sciences admits students with a previously earned four-year BS degree or MS degree (an MS degree is not a prerequisite). Depending on individual progress, the degree is normally completed in four to six years.

How to Apply

Apply to the Department of Pharmaceutical Sciences PhD program at www.pharmacy.buffalo.edu/psci_grad_apply.



“We are recognized as one of the top schools for research in pharmacokinetics and pharmacodynamics in the world. We have outstanding facilities for pharmacokinetics, including a new pharmacogenetics facility and a shared instrument facility.

Although this is one of the most difficult programs in the country, we have some of the best students who seem to thrive in this challenging environment. It is great to see students do well and develop new ideas for the first time. And even after years of research I can say there is still nothing better than watching data with students as it comes off the instrument. Is it what you thought — how and why is it different from your anticipated result? This is the essence of research.”

Joseph Balthasar, PhD
Professor, Pharmaceutical Sciences

Great Futures: Careers in Pharmacy and Pharmaceutical Sciences

Pharmacy Practice

With the health care field expanding yearly, there are now more than 100 job descriptions for positions that pay as much as \$100,000 in many parts of the country. A PharmD degree from the University at Buffalo positions you well for these in-demand roles through our commitment to professional development and real-world learning.

- As part of the training for their expanded role in health care delivery, UB pharmacy students spend 300 hours of Introductory Pharmacy Practice Experience and 1440 hours of full-time Advanced Pharmacy Practice Experience, helping patients with chronic diseases — ranging from diabetes to HIV — to better manage their health and medications
- Students and faculty work with local and regional health systems partners, including Roswell Park Cancer Institute, Kaleida Health System, Erie County Medical System, VA Medical Center, Buffalo Psychiatric Center, Catholic Health System, Niagara Hospice, the University of Rochester, and numerous other regional health care centers

Pharmaceutical Sciences

The intellectual diversity of the pharmaceutical sciences is matched by the range of challenging employment opportunities in the field.

- Clinical and basic research in institutes, universities, and pharmaceutical companies
- Work in government and regulatory agencies
- Positions in business and legal affairs

Salary Success

According to the 2008 American Association of Pharmaceutical Scientists (AAPS) Annual Salary Survey, graduates with a BS in pharmaceutical sciences and up to five years of professional experience earned a range of \$47,500 to \$62,400 annually. Master's graduates with up to five years of experience took home \$55,000 to \$81,500 per year. Pharmaceutical Sciences PhD graduates can expect a starting salary of \$82,000 to \$96,000.

Locally trained pharmacists

Playing an integral role in the health and wellness of Western New Yorkers, 40 percent of the region's pharmacists receive their advanced degrees from UB's School of Pharmacy and Pharmaceutical Sciences.



Real-World Learning — A Competitive Advantage

Get an in-depth view of our residency and fellowship programs at www.pharmacy.buffalo.edu/pprac_res_fellow.

The University at Buffalo's extensive residency and fellowship programs offer students professional, hands-on preparation for pharmacy practice. The experiences our unique partnerships with area hospitals and research centers provide mean you'll enter the job market with a competitive advantage.

Residency Training Programs

PharmD graduates with residency program experience are highly sought-after by employers seeking pharmacists with superior leadership and critical thinking skills. We offer several challenging residencies for motivated post-graduates:

Pharmacy Practice Residency Programs (PGY1)

- Ambulatory Care
- Hospice/Homecare
- Primary Care
- Psychiatry

Residencies Programs (PGY2)

- HIV/Infectious Diseases
- Psychiatry

Fellowships

Postdoctoral pharmacy fellowships are highly individualized training programs that develop high-level research skills. We offer fellowship-level training in the following areas:

- Drug Development — Novartis Pharmaceuticals
- HIV Pharmacotherapy
- Molecular Imaging
- Pharmacometrics PK/PD
- Transplant Immunosuppressive Pharmacology

Power in Partnerships

The School of Pharmacy and Pharmaceutical Sciences maintains both clinical and research affiliations with a variety of local, regional, national, and international sites including the Roswell Park Cancer Institute (a comprehensive cancer center), the Nobel Prize-winning Hauptman-Woodward Medical Research Institute, the New York State Center of Excellence in Bioinformatics and Life Sciences, the National Institutes of Health, the ACTG (AIDS Clinical Trial Group), and the University of Zimbabwe, Harare, Zimbabwe.

Transforming Pharmacy

Since our founding in 1886, the School of Pharmacy and Pharmaceutical Sciences has played a major role in transforming pharmacy to the fully integrated and respected health care profession it is today. Pharmacy-related research is flourishing at UB, thanks to the cutting-edge, multidisciplinary initiatives taking place in our school.

- The School of Pharmacy and Pharmaceutical Sciences has the second most productive research program in the nation in terms of National Institutes of Health (NIH) funding per faculty member.
- UB was the first professional pharmacy program in the nation to require that its students take courses in pharmacogenetics, which examines the ways human genome data can be used to tailor drug treatments to an individual's genetic makeup.
- In collaboration with the New York State Center of Excellence in Bioinformatics & Life Sciences and Roswell Park Cancer Institute, our faculty researchers are pioneering innovative translational research utilizing pharmacokinetic and pharmacodynamic analyses to guide the development of new therapies in areas such as: drug development and delivery, applied translational pharmacology, clinical pharmacology, pharmacogenomics and proteomics with an emphasis in oncology, neurology, infectious disease, and cardiovascular disease.
- Our faculty are leaders in researching new methods of effective HIV treatment. UB's pharmacy school was the first ever to offer training in advanced management of anti-retroviral treatments.
- In 2012, the school will move to a new building, John Kapoor Hall, which will give students access to highly sophisticated teaching and research spaces to enhance our learning and social experiences.
- A strategic alliance with Pfizer, Inc. will provide up to \$7.5 million for research in pharmacokinetics and pharmacodynamics.
- The School of Pharmacy and Pharmaceutical Sciences is the birthplace of pharmacodynamics, the interface of pharmacology and physiology, a discipline that has fundamentally changed how new drugs are evaluated and approved.
- UB was the first pharmacy school in the nation to offer a master's degree with a concentration in pharmacometrics, a new field that fuses pharmacologic studies with computational and statistical methods of data analysis.
- UB has recently established the Center for Protein Therapeutics to advance the application of pharmaceutical sciences to the development of protein drugs. This unique center, which is funded by an industry consortium, is expected to play a leading role in training scientists to develop new drug products derived from biotechnology.
- Department of Pharmacy Practice faculty are conducting groundbreaking research in patient care environments in adult medicine, pediatrics, geriatrics, nephrology, transplantation, infectious diseases, HIV, oncology, neurology, nuclear medicine, and psychiatry. Clinical trials are performed, incorporating pharmacokinetics and pharmacodynamics, employing the services of the department's Pharmacometrics Study Unit.

"It has been extraordinarily rewarding to witness my doctoral research at UB using pharmacokinetic theory at UB translate from the bench to the bedside. By evaluating certain drug combinations, my research provides substantial benefits to patients with cancer, particularly for treatment of peritoneal tumors including those found in ovarian cancer."

Dhaval Shah, PhD Pharmaceutical Sciences, 2009

Buffalo — A Great Place to Live and Learn

Buffalo — dubbed the City of Good Neighbors — is the second-largest city in New York State, yet it's a big city with a hometown feel. The Buffalo-Niagara region is home to 1.2 million people and offers a world of educational and cultural opportunity, nearby attractions and recreation, and affordable, quality housing.

Frequently Asked Questions About Living in Buffalo

How is the weather in Buffalo?

Buffalo enjoys four wonderful seasons, with plenty to do during each of them. Buffalo is the sunniest, driest city on the East Coast, north of Atlanta, Georgia.

Where can I find information regarding housing?

If you are interested in living on-campus, contact UB Residence Halls & Apartments. For students seeking off-campus housing, Buffalo has many affordable housing options with the convenience of inter-campus shuttles and a metro link to the downtown and suburban areas. Get started at www.ub-housing.buffalo.edu.

What is there to do in Buffalo? What is it like to live in Buffalo and at UB?

Buffalo is a small city with the vibrant cultural and recreation life of a much larger urban area. Amherst, NY — home to UB's North Campus — was recently ranked the safest U.S. city of 100,000 to 499,999 residents and third safest overall. Known as a "20-minute city" thanks to its short commutes, Buffalo is easily accessible by air, train, bus, or car. Read more about life outside the classroom at www.buffalo.edu/aboutub/life.

What is the cost of living in Buffalo?

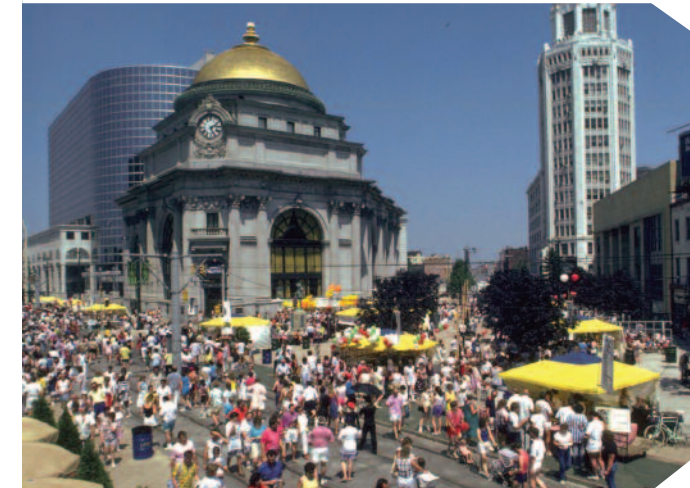
The cost of living is low and the standard of living is high, making the Buffalo metropolitan area among the most affordable in the U.S. with housing costs at 15 percent less than the national average.

Learn more about our great city and region at www.buffalo.edu/aboutub/region.

Financing Your Education

As a SUNY school, the University at Buffalo is one of the best education values in the country. In addition, the School of Pharmacy and Pharmaceutical Sciences offers more than \$350,000 in competitive scholarships each year to academically talented students from around the world. There is no additional application process for first-year students; applicants are notified if they are chosen for UB scholarships.

For additional information on tuition, costs, and financial aid, visit the Student Response Center Web site at www.src.buffalo.edu.



"Buffalo is a great place to study. With the surrounding health community, it's easy to explore all of the different ways in which pharmacists can practice and you see it all happening right here."

Jill Jessmer, PharmD, 2010

Fast Facts: School of Pharmacy and Pharmaceutical Sciences

Founded

- 1886

Dean

- Wayne K. Anderson

Departments

- Department of Pharmacy Practice
- Department of Pharmaceutical Sciences

Student Body

- 564

Faculty

- 42

Alumni

- 4,927

Degrees Awarded

- PharmD
- PharmD/JD
- PharmD/MBA
- PharmD/MPH
- PharmD/PhD
- PhD
- MS
- BS
- BS/MS

Employment Rate

- 99%



Uniting Health

The School of Pharmacy and Pharmaceutical Sciences is one of five schools that constitute the University at Buffalo's Academic Health Center.



Student Organizations

With nearly 20 pharmacy and pharmaceutical sciences student organizations and fraternities to choose from our students create lasting friendships, gain valuable leadership skills, and develop a network of contacts in business and industry.

UB at a Glance



Affiliation

The largest and most comprehensive in the 64-campus State University of New York system; member, Association of American Universities

Founded

- 1846

Character

- A comprehensive, research-intensive public university dedicated to academic excellence

Research

- \$323 million (FY 2007)

Patents Awarded

- 54 (2003–07)

President

- John B. Simpson

Student Body

- 28,192 (fall 2008)
- 19,022 undergraduate
- 9,170 graduate and professional

Alumni

- 202,163 in 130 countries (fall 2008)

Degrees Awarded

- 7,017 (2007–08)

Faculty

- 1,193 full-time (fall 2007)

Athletics

- Division I, Mid-American Conference