YOUR BETTER TOMORROW STARTS TODAY

Doctor of Philosophy in Pharmaceutical Sciences
Department of Pharmaceutical Sciences
In our labs, faculty and students work together to keep science moving through the phases of preclinical basic research, drug discovery, and translational medicine. Our innovations disrupt the course of disease and forge new approaches to research.

Located in Philadelphia, the School is among the pharmaceutical industry hubs of the Northeastern U.S. Our home on the Temple University Health Sciences Center campus is a nucleus of healthcare delivery, education, and research.

**AREAS OF CONCENTRATION**

Offered by the Department of Pharmaceutical Sciences:
- Medicinal Chemistry
- Pharmaceutics
- Pharmacodynamics

“A great place to explore pharmaceutical science and to experience the diversity of the world in a city of brotherly love!”

—Tirtha Nandi
Graduate Student & Chair of Temple’s AAPS Student Chapter
The program provides graduate training in Medicinal Chemistry, Pharmaceutics, and Pharmacodynamics. We prepare students to work in influential positions in academia, industry, government, and other research and development environments.

MEDICINAL CHEMISTRY
Medicinal Chemistry is the chemical approach to understanding the biological effects of drugs and integrates:

- organic chemistry
- pharmacology
- biochemistry
- physiology
- molecular biology

Working closely with faculty in the Moulder Center for Drug Discovery Research and other labs, you will develop safe and efficacious treatments that are suitable for use in healthcare today.

PHARMACEUTICS
Pharmaceutics is the discipline of dosage form design and integrates:

- drug delivery
- drug formulation
- drug pharmacokinetics
- pharmacokinetic modeling

Our faculty are experts in nanomolecule formulation, targeted drug delivery, drug formulation design, pharmacokinetics, and modeling. Labs include the Jayne Haines Center for Pharmacogenomics and the cGMP (Current Good Manufacturing Practices) Facility.

PHARMACODYNAMICS
Pharmacodynamics utilizes molecular, biochemical, and behavioral approaches to explore the interface of:

- physiology
- neuroscience
- pathology
- pharmacology
- pharmacogenomics

The current research interests of our pharmacodynamics faculty include pharmacological questions in carcinogenesis and chemical dependency. They also conduct research on proteomics and metabolomics.

“It's the place that will foster your ambition and provide you with the appropriate research environment to make your ambition a reality.”

— Bayan Alshahrouri
Fulbright Fellow
Pharmaceutics (drug delivery & formulation)
EXTRACURRICULAR EXPERIENCES

Our faculty and staff facilitate the pursuit of internships, conference participation, and membership and leadership in scientific organizations, including Temple’s American Association of Pharmaceutical Scientists Student Chapter.

The School’s annual Research and Recognition Day provides a forum for presenting student research, garnering feedback from a diverse group of observers, and networking with fellow students, faculty, and healthcare and pharmaceutical industry professionals.

Additional opportunities to learn and network outside of the classroom include in-person and virtual seminars, special interest committees, and social gatherings coordinated by the Department and the School.

FAST FACTS

Average time for degree completion: 5 years

Full-time/part-time status: Full-time status is recommended due to the nature of ongoing research. Admission for part-time status may be offered under exceptional circumstances.

The Department of Pharmaceutical Sciences also grants master of science degrees.

For more information on individual program requirements, [click here].

Underrepresented domestic students are strongly encouraged to apply. Please explore [diversity and inclusion related offerings] from the Temple University Graduate School office.

[Apply now through our website] to prepare to submit your application by December 15.
**Faculty**

*Magid Abou-Gharbia, PhD
Laura H. Carnell Professor
Synthetic Medicinal Chemistry

*Carlos Barrero, MD
Assistant Professor
Protomics and metabolomics to
develop a better understanding of
the pathophysiology of disease like
diabetes, COPD and HIV-1.

*Benjamin Blass, PhD
Assistant Professor
Research on a wide range of disease
states through the careful application
of medicinal chemistry strategy and
drug design principles

*Michael R. Borenstein, PhD
Associate Professor and Senior
Associate Dean for Operations
Analytical techniques to study/measure
drug disposition

*Daniel J. Canney, PhD
Associate Professor and Interim
Director of the Moulder Center for Drug Discovery
Synthesis of novel ligands for
pharmacologically relevant
receptor proteins; structure-activity
relationship studies

*Wayne Childers, PhD
Associate Professor
Organic synthesis and drug design,
especially in the areas of stroke,
neurodegenerative diseases,
epilepsy, Alzheimer’s Disease, pain,
and psychotherapeutic agents

Peter Doukas, PhD
Professor
Medicinal Chemistry

*Reza Fassihi, PhD
Professor
Drug formulation; Novel drug dosage
and delivery forms

*Marc A. Ilies, PhD
Professor (Research/Instruction)
Medicinal chemistry and drug design,
drug and nucleic acid delivery
systems, nanotechnology

*Ken Korzekwa, PhD
Professor
Predictive models for human
pharmacokinetics, modeling
transporter kinetics

*David B. Lebo, PhD
Professor (Instruction) and Director
of cGMP Facility
Formulation development; Solubility
enhancement; cGMP facility

*Salim Merali, PhD
Professor
Laura H. Carnell Professor and
Associate Dean of Research
Protomics and metabolomics applied to biomarker discovery,
disease pathogenesis and
identification of novel drug targets

*Swati Nagar, PhD
Professor and Director of Graduate
Studies
Pharmacokinetics (PK) and Drug metabolism; Modeling and simulation
of PK and drug-interactions

*Jayanth Panyam, PhD
Professor and Dean
Drug delivery, therapeutic antibody
constructs and anticancer vaccines

*Oscar Perez-Leal, MD
Assistant Professor
Molecular biology, Protein Target
Identification, Development of cellular models for high-throughput
screening by using CRISPR genome
engineering, Pharmacogenomics

Mario C. Rico, MD
Research Assistant Professor
Drug discovery and animal models
for metabolic disorders and chronic
diseases

*Ellen A. Walker, PhD
Professor and Chair
Behavioral pharmacology of
analgesia, substance abuse,
cognition, and feeding

*Ho-Lun Wong, PhD
Professor
Strategic use of lipid-polymer hybrid
nanotechnology and lipid-based
nano-systems as novel drug-delivery
systems

Joanne Xue, PhD
Research Assistant Professor
Evaluation of the therapeutic effects
of nanoparticles

*Graduate faculty

**Postdoctoral Associates**

Shubhmita Bhatnagar, PhD
Panyam Lab

Elizabeth Hewlett, PhD
Childers Lab

Erickson Paragas, PhD
Nagar/Korzekwa Labs

Vishnu Revuri, PhD
Panyam Lab

Drishti Sehgal, PhD
Panyam Lab

**Staff**

Dennis Colussi
Research Scientist
Moulder Center for Drug Discovery
Research

Almira Cutler
Administrative Assistant
Graduate program

Sophon Din
Administrative Assistant
Graduate admissions and
departmental administration

John C. Gordon, PhD
Manager, Screening Center
Moulder Center for Drug Discovery
Research

Magda Florez Lozano
Research Assistant
Barrero Laboratory

George Mateo
Research Scientist
Moulder Center for Drug Discovery
Research

Edward Melenski
Research Scientist
Moulder Center for Drug Discovery
Research

Carman Merali
Research Scientist
Proteomics Facility

George Morton
Research Scientist
Moulder Center for Drug Discovery
Research

Min Ye
Research Scientist
Korzekwa Lab, Moulder Center for
Drug Discovery Research
Most students accepted into the Doctor of Philosophy program are granted up to five years of financial support in the form of a university fellowship, teaching assistantship, or research assistantship.

Recipients of financial support are determined on a competitive basis during the admissions process. Those selected receive a stipend and full tuition remission for up to nine credit hours per semester.