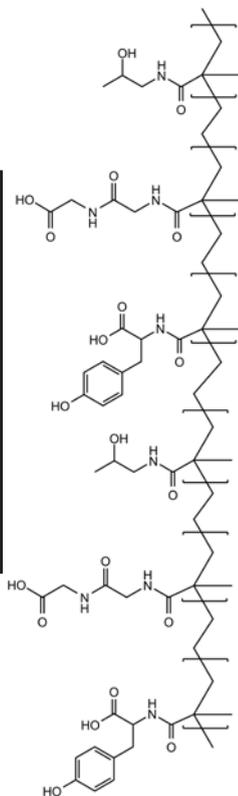


Preparing for Careers in Pharmaceutics

The University of Utah's Ph.D. program in pharmaceutics comprises intensive coursework to cover essential topics in basic science, and most importantly as a research degree, in-depth research experience. Most students entering with a bachelor's degree in a related discipline fulfill their Ph.D. requirements within 4-5 years.

Highly motivated students with bachelor's degrees in chemistry, engineering, biochemistry, microbiology, mathematics, biomedical science, pharmaceutical science, or biology are best prepared to enter the Utah pharmaceutics graduate program.

Applicants are advised to complete the entire undergraduate calculus, organic chemistry, and physical chemistry sequence, as well as one semester of anatomy, cell biology, developmental biology, classical genetics, or physiology.



Drug Delivery
Targeted Therapy
Nanomedicine

Department of Pharmaceutics
and Pharmaceutical Chemistry
College of Pharmacy
30 South 2000 East
Salt Lake City, UT 84112
www.pharmacy.utah.edu/pharmaceutics/index.html



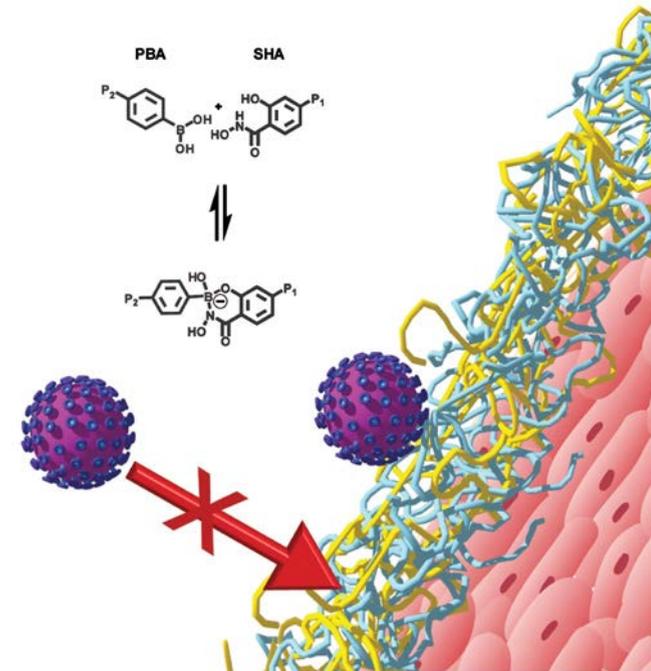
UNIVERSITY OF UTAH
COLLEGE OF PHARMACY



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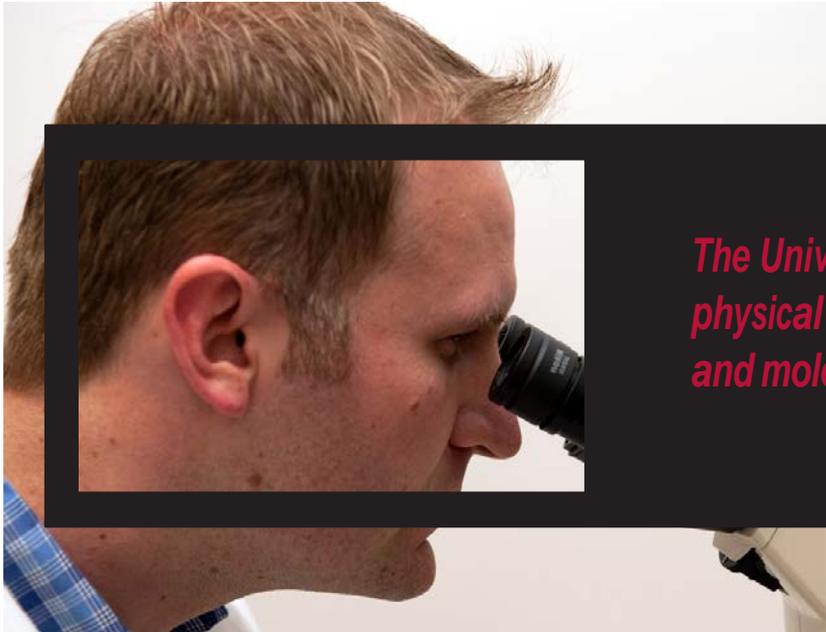
Drug Delivery
Strategies that
Improve Modern
Medicine



Graduate Training and
Research program in
Pharmaceutics and
Drug Delivery

Utah solutions for revolutionizing drug delivery technologies

The University of Utah Pharmaceuticals graduate program emphasizes training in physical chemistry, organic chemistry, mathematical modeling, bioengineering, and molecular biology



Pharmaceutics is the science of drug delivery and targeting to optimize therapy. This rapidly expanding field now integrates many aspects of modern biomedical science, bioengineering, synthetic, polymer and physical chemistry, cell and molecular biology, nanotechnology and applied math and mass transport modeling. Research spans the fundamental science of drug packaging, stability, controlled-release dosage forms, complex molecular targeting, *in vivo* imaging modalities, as well as modeling drug actions and therapeutic performance. With its international reputation, Utah Pharmaceuticals, is ranked #3 nationally for research productivity in the field.

Current research projects include:

- Gene medicine, including novel therapeutic genes, siRNA delivery and targeting methods
- Interfacial properties and performance of biomaterials in medical applications, including implantable devices, diagnostics and bioassays
- Design and characterization of novel drug delivery systems using new biomaterials (polymers, peptides, nanosystems) and new drug forms (transgenes, proteins, peptides) to control system design, drug release and stability
- Innovative drug delivery systems that combine new targeting, imaging, and triggered release features to improve therapy
- Nanomedicine
- Cell-based therapies for metabolic disease
- Studies of drug transport mechanisms into and through biological membranes and through synthetic polymer delivery devices
- Basic research in drug metabolism kinetics and mechanisms in the body
- Animal models of toxicity

The University of Utah encourages collaborative and translational research with other University departments (e.g. radiology, artificial organs, bioengineering, oncology, internal medicine and surgical specialties, Nano Institute of Utah), as well as joint work with other universities and industries, both in the United States and internationally. Formal relationships are established on many of these levels to promote student involvement in innovative projects.

