

(Microscopy: Cell targeting with polymeric drugs)



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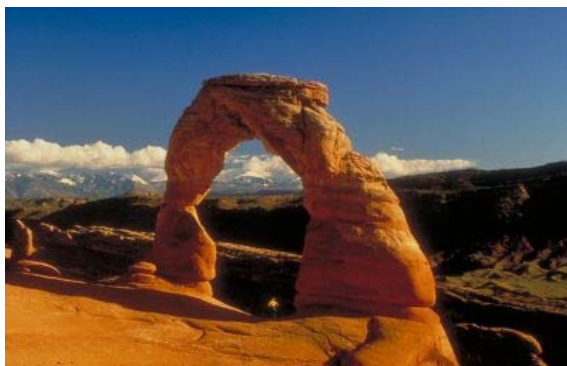
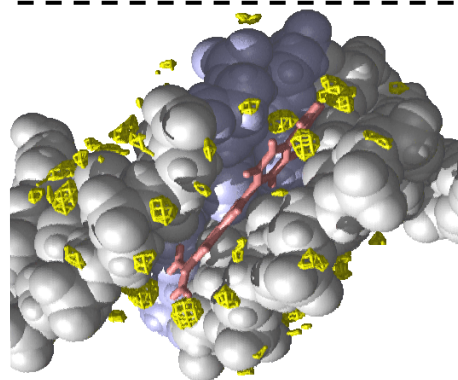
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**Graduate studies in**

**Pharmaceutics  
and  
Pharmaceutical  
Chemistry**

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**Producing New Drug  
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**[http://www.pharmacy.utah.edu/  
pharmaceutics/](http://www.pharmacy.utah.edu/pharmaceutics/)**

## ***Utah's Graduate Program in Pharmaceutics and Pharmaceutical Chemistry***

**Pharmaceutics** is the science of drug delivery and drug targeting to improve therapies and medicine. This rapidly expanding field now integrates many aspects of modern biomedical science, bioengineering, synthetic, polymer and physical chemistry, cell and molecular biology, and applied math and mass transport modeling. Research spans fundamental science of drug packaging, stability, dosage forms and release control to complex molecular targeting and imaging modalities inside the body, to modeling of drug action and therapeutic performance.

### **Current research projects involve:**

- Gene medicine, including novel therapeutic gene 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 (e.g., transgenes, proteins, peptides) to build and control system design, drug release and stability.

- Innovative drug delivery systems that combine new targeting, imaging, and triggered release features to improve therapy.
- Cell-based therapies for metabolic disease
- Basic research in drug metabolism kinetics and mechanisms in the body.
- Studies of drug transport mechanisms into and through biological membranes (such as skin, GI tract, mouth/nose, lung or cell membranes and cell organelles) and through synthetic polymer delivery devices.
- Basic studies of physical and chemical properties of drugs, and influences of bioactive molecule chemical structure on those properties.

The Department houses world class centers, namely **Center for Controlled Chemical Delivery**, and **Cell Sheet Tissue Engineering Center** and is affiliated with the **Utah Center for Nanomedicine**.

The University of Utah encourages collaborative research with other University departments (e.g., radiology, bioengineering, oncology, internal medicine and surgical specialties), 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 innovative projects.

## ***The University of Utah Health Sciences Center***

The Wasatch National Forest boundary lies within site of the Utah Health Sciences campus nearly a mile above sea level above Salt Lake City. The School of Medicine, University Hospital, Huntsman Cancer Institute, Moran Eye Institute, School of Nursing, Spencer S. Eccles Health Sciences Library, and the School of Pharmacy are clustered in modern buildings adjacent to the 1600-acre University campus, at the base of the towering Wasatch mountain range. Numerous core research facilities in biomolecular synthesis and characterization, genomics, and transgenics are housed in this complex of several thousand biomedical researchers. The University of Utah, as the State's flagship research school, has over 28,000 students in over 90 departments, drawing more than \$400 million in research support annually. Several modern core research facilities are located throughout campus, allowing access to instrumentation.

## ***The Utah Lifestyle***

With nearly 300 days of sun annually and world-class skiing very close, Salt Lake City offers a unique mountain-west lifestyle: affordable urban living in a safe modern city. Numerous cultural activities include a world-class symphony, ballet, theatre, opera, cuisine, and professional sports. It's a great place to study and work for our advanced degree and your bright future career.

***New Drug Delivery Strategies  
that Improve Modern Medicine***