

- 2. Principles of Pharmacotherapy for Cancer Engineering**
2 units, September 30 and October 1, 2025

Course Director: Stephen Harnicar, PharmD, BCOP - Manager, Clinical Pharmacy Practice

Course Lecturers:

- Raymond G. DeMatteo, PharmD, BCOP
Clinical Pharmacy Specialist, Early Drug Development
- Issam Hamadeh, PharmD, BCOP
Clinical Pharmacy Specialist, Multiple Myeloma
- Lane Nguyen, PharmD, BCPPS
Clinical Pharmacy Specialist, Pediatric Critical Care

September 30th 2025: Class 9:30-12:30p, Koch Pharmacy Tour 2-3p

October 1st 2025: Class 9:30-12:30p

October 2nd 2025: Koch Pharmacy Tour 1-2p

Course Description

Conducting safe, high-quality clinical research necessitates accounting for on- and off-target drug effects and how drugs reach those targets across a diverse cohort. Researchers must apply crucial pharmacotherapeutic concepts, including pharmacokinetic and pharmacodynamic principles, when designing clinical cancer research.

This course explores principles of pharmacotherapy as they relate to clinical cancer research, including pharmacokinetics, pharmacodynamics, pharmacogenomics, and drug transporters and interactions. The course's intent is to provide students with a practical foundation for rational incorporation of these principles into their research.

Course Goals and Learning Objectives

Upon completion, course participants should be able to:

- Review pharmacokinetic (PK) principles including absorption/bioavailability, distribution, metabolism, and excretion, including the role of drug transporters
- Articulate PK models including one and two compartments
- Contrast pharmacodynamic principles of classical oncologic agents, targeted agents, and immunotherapy agents
- Understand the role of drug transporters and list pathways of drug interactions
- Describe principles of pharmacogenomics

September 30th 2025: Class 9:30-12:30p, Koch Pharmacy Tour 2-3p

Session 1: Pharmacokinetics (Ray DeMatteo)

Session 2: Pharmacodynamics (Lane Nguyen)

September 30th 2025: Koch Pharmacy Tour 2-3p

Students will have the opportunity to tour the MSK pharmacy where chemotherapy processing occurs to get a visual of drug preparation and dispensing.

Please meet in the Koch Lobby 10 minutes prior to tour time; Omair Jamil will conduct tours.
530 E 74th St, New York, NY 10021

Shelby Cherkas
Sylvia Illouz
Bailey Levin
Adithya Prabakaran
Christina Ta

October 1st 2025: Class 9:30-12:30p

Session 3: Drug Transporters and Drug Interactions (Issam Hamadeh)
Session 4: Pharmacogenomics (Issam Hamadeh)

October 2nd 2025: Koch Pharmacy Tour 1-2p

Students will have the opportunity to tour the MSK pharmacy where chemotherapy processing occurs to get a visual of drug preparation and dispensing.

Please meet in the Koch Lobby 10 minutes prior to tour time; Omair Jamil will conduct tours.
530 E 74th St, New York, NY 10021

Olivia Hanselman
Matthew Lange
Ana Marie Perea del Angel
Stephanie Tarrab