

# MECHANISMS IN CANCER THERAPEUTICS – GS04-1213

## FALL SEMESTER 2021

*Mondays 4:00-6:00pm & Wednesdays 4:00-5:00pm*  
*Mitchell Research Building (BSRB)-Gallick Classroom (S3.8367)*

### Course Requirements:

- ✓ 85% class attendance (10%)
- ✓ Class presentation (30%)
- ✓ 3 Take Home assignments (2 Assay questions each) (30%)
- ✓ 3 MCQs in class exams (30%)

Reference Book: Cancer Chemotherapy and Biotherapy: Principles and Practice, by Bruce A. Chabner MD, Dan L. Longo MD

<u>Date</u>	<u>Lecture Title</u>	<u>Instructor</u>
<b><u>Topics I &amp; II: Cellular Processes, Targeting Cellular Events</u></b>		
Mon, August 30, 2021	Introduction to Cancer Therapeutics	Marina Konopleva
Wed, September 1, 2021	Cell Cycle & DNA Replication	Walter Hittelman
<b>Mon, September 6, 2021</b>	<b>Labor Day Holiday - No Class</b>	
Wed, September 8, 2021	Ribonucleotide Reductase & Deoxynucleotides	Varsha Gandhi
Mon, September 13, 2021	Alkylating Agents, Cisplatin and Analogs	Bill Plunkett
Wed, September 15, 2021	Antifolates and Fluorouracil, Topoisomerase Inhibitors	Bill Plunkett
Mon, September 20, 2021	Nucleoside Analogs	Varsha Gandhi
	Targeting Mitosis	Ann Klopp
<b><u>Topic III: Radiotherapy, DNA Damage and Repair</u></b>		
Wed, September 22, 2021	Radiotherapy	Ann Klopp
Mon, September 27, 2021	DNA Repair Mechanisms, Inhibition and Synthetic Lethality	Bill Plunkett
Wed, September 29, 2021	Radioisotopes in Cancer Therapy	Federica Pisaneschi
<b><u>Topic IV: ROS &amp; Cell Death:</u></b>		
Mon, October 4, 2021	ROS: Generation, Toxicity, & Drug Target	Joya Chandra
	Drug Induced Cell Death	Joya Chandra
<b>Wed, October 6, 2021</b>	<b>Exam I: Topics I, II, III, IV</b>	
<b><u>Topic V: Aberrant Kinases &amp; Receptor Signaling</u></b>		
Mon, October 11, 2021	Introduction of Cell Signaling & RTKs	Varsha Gandhi
Mon, October 11, 2021	PIK3	Senthil Damodaran
Wed, October 13, 2021	Targeting the BRAF Pathway	Rodabe Amaria
<b>Wed, October 13, 2021</b>	<b>Assignment No. 1 Due Assignment</b>	
Mon, October 18, 2021	BCR-ABL and CML	Bing Carter
Mon, October 18, 2021	Aura Kinase Inhibition	Faye Johnson

Wed, October 20, 2021	Targeting the ER and HER2 Receptor in Breast Cancer	Debu Tripathy
Mon, October 25, 2021	Targeting the Androgen Receptor: Prostate Cancer Applications	Tim Thompson
Mon, October 25, 2021	Targeting B Cell Receptor Signaling; Microenvironment	Jan Burger
Wed, October 27, 2021	Tumor Microenvironment	Michael Andreeff

**Topic VI: Tissue Physiology & Angiogenesis**

Mon, November 1, 2021	Targeting Cancer Metabolism	Joe Marszalek
Mon, November 1, 2021	Targeting the EGF Receptor	John Heymach
Wed, November 3, 2021	Autophagy	Nancy Gordon
Mon, November 8, 2021	Angiogenesis	Joe McCarty
Mon, November 8, 2021	Cancer Stem Cells	Lokesh Battula

**Wed, November 10, 2021**

**Exam II: Topics V, VI**

**Topic VII: Transcription & Translation**

Mon, November 15, 2021	Epigenetically Directed Cancer Therapeutics	Deepa Sampath
Mon, November 15, 2021	Transcription, Gene Expression and Silencing	Kunal Rai
Wed, November 17, 2021	Protein Ubiquitination & Proteasome Inhibitors	Joya Chandra
<b>Wed, November 17, 2021</b>	<b>Assignment No. 2 Due</b>	
Mon, November 22, 2021	TP53	Gigi Lozano
Wed, November 24, 2021	<b>Thanksgiving Holiday - No Class</b>	
Mon, November 29, 2021	Targeting (Bromodomains Extraterminal) Proteins for Leukemia Therapy	Gautam Borthakur

**Topic VIII: Immune Therapies**

Wed, December 1, 2021	CAR-T Cells	Sattva Neelapu
Mon, December 6, 2021	Checkpoint Inhibition Strategies	Michael Curran
Mon, December 6, 2021	Basic Immunology of Cellular Immunotherapy/ Stem Cell Transplant	Geath Al-Atrash
Mon, December 8, 2021	NK Cell Therapies	May Daher

**Wed, December 8, 2021**

**Assignment No. 3 Due**

**Mon, December 13, 2021**

**No Class**

**Wed, December 15, 2021**

**Exam III: Topics VII, VIII**