

| Lecture # | Subtopic | Lecture Topic | Lecture Source Material | JC paper |
|-----------|-------------------------|---|---|--|
| 1 | Cancer Biology | Course Overview, JC grading and expectations, What is cancer? - hallmarks, Why do people die from Cancer? | Hannahan and Weinberg 2011, Weinberg ch14 | |
| 2 | Cancer Biology | Kinases, Oncogenes and Tumor Suppressors, Src and Rb, Knudson 2 hit | Mendelsohn ch1, Weinberg ch3, ch5 and ch7 | |
| 3 | Cancer Biology | Multistep Tumorigenesis, Genetic Landscapes and Instability, Heterogeneity | Weinberg ch 11, Fearon 1990 Cell, Swanton 2012, Sin & Leder 1987 Cell | Knudson 1971 |
| 4 | Cancer Biology | Angiogenesis | Weinberg ch 13 | Wood 2007 Science |
| 5 | Cancer Biology | Angiogenesis | Weinberg ch 13, Jain Angiogenesis book chapter, Jain 2005, Jain 2013 JCO, Helmlinger 1997 Nat Rev | Folkman 1977 Br j Can |
| 6 | Cancer Biology | Metabolism - Metformin - redox imaging | Vander Heiden 2009, Wallace 2012 Nature Reviews Cancer, Pouli 2016 Sci Trans med | Tong 2004 Cancer Research |
| 7 | Cancer Biology | Metastasis, seed and soil | Weinberg ch 14, Steeg 2006, Talmadge 2010 | Jiralerspong 2009 JCO |
| 8 | Cancer Biology | Tumor Microenvironment | | Hart and Filder 1980 Cancer Research |
| 9 | Cancer Biology | Intravital Imaging | Condeelis, Weissleder 2010 Cold Spring Harbor, Nakasone 2012 Cancer Cell | Paszek Weaver Cell 2005 |
| | Cancer Biology | Only JC - Midterm Review | | Wyckoff 2007 Cancer Research |
| 10 | | <u>Midterm</u> | | |
| 11 | Diagnosis and Prognosis | Mammography, incidence, prevalence | ACS BC Facts and Figure 2016 | |
| 12 | Diagnosis and Prognosis | CT/MRI/PET | Schwarz-Dose 2009 JCO | Andersson 1988 BMJ |
| 13 | Diagnosis and Prognosis | Molecular Signatures for Prognosis and Treatment Guidance | Sotiriou 2009 NEJM, MacConail 2013 JCO, Ross 2008 The Oncologist, Sorlie 2003 PNAS | Hylton 2012 Radiology |
| 14 | Diagnosis and Prognosis | Oral Cancer Endogenous Imaging/Diffuse Optical Spectroscopy | roblyer research material, Pakalnikis 2011 Radiology | van't Veer 2002 Nature |
| 15 | Diagnosis and Prognosis | Chemotherapy | Nagrath 2007 | Cerussi 2007 PNAS |
| 16 | Treatment | Microfluids for Cancer Diagnosis | | Karabacak 2014 |
| 17 | Treatment | Chemo-Immunotherapy | Bock 2012 | Esserman 2012 JCO |
| 18 | Treatment | Chemo Prodrug-activation Gene Therapy for Cancer | Chen 1995 Cancer Research | |
| 19 | Treatment | Immunotherapy | Berry 2012, Zitvogel 2011, DeNardo 2011, Cancer Discovery | Druker 2001 NEJM |
| 20 | Treatment | Targeted Therapy | Slamon 2001 NEJM, Lindstrom 2012 JCO | Hamid 2013 NEJM |
| 21 | Treatment | Treatment Resistance | Holohan 2013 Nature Reviews, Robey 2018 Nature Reviews | Enriquez-Navas 2016 Science Translational Medicine |
| 22 | Treatment | Guest Lecture + course evals, feedback from students | | |
| 23 | | <u>Final</u> | | |