MINI MED 2012: SYLLABUS OF SUPPLEMENTAL MATERIAL

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MINI MED 2012

CANCER: BASIC BIOLOGY AND THERAPEUTIC APPROACHES – AN UPDATE

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April 3

Introduction to Neoplasia
Gerald D. Abrams, M.D.

Neoplasia

• “Neoplasia is an abnormal new growth of tissue that grows by cellular proliferation more rapidly than normal, continues to grow after the stimuli that initiated the new growth cease, shows partial or complete lack of structural organization and functional coordination with the normal tissue, and usually forms a distinct mass of tissue which may be either benign or malignant.”

• Neoplasia as a Medical Subject Heading - Medical Subject Headings (MESH®), the National Library of Medicine’s controlled vocabulary used for indexing articles in Medline® which contains journal citations and abstracts for biomedical literature from around the world. http://www.nlm.nih.gov/cgi/mesh/2012/MB_cgi


April 10

Carcinogenesis: Basic Biology and Clinical Considerations
Eric R. Fearon, M.D., Ph.D.

• Definition of carcinogenesis from the National Cancer Institute http://www.cancer.gov/dictionary?cdrid=46487


• Cell Biology of Cancer http://training.seer.cancer.gov/disease/cancer/biology/

• Clinical Considerations Cancer [http://www.cape.ca/children/cancer7.html]

April 17

Screening for Cancer – Early Detection and Prevention

Dean E. Brenner, M.D.

• What Is Cancer Screening? From the National Cancer Institute
  [http://www.cancer.gov/cancertopics/pdq/screening/overview/patient]

• Types of Screening Tests. From the National Cancer Institute

• Screening and Testing to Detect Other Types of Cancer. From the National Cancer Institute
  [http://www.cancer.gov/cancertopics/screening/othercancers]

• American Cancer Society Guidelines for the Early Detection of Cancer

• What to expect at a screening. A video from the American Academy of Dermatology
  [http://www.aad.org/skin-conditions/skin-cancer-detection/what-to-expect-at-a-screening]

• Why Get Tested? NIHSeniorHealth. A video
  [http://nihseniorhealth.gov/colorectalcancer/causesandriskfactors/video/cc2_na_intro.html]

• Cancer Screening Guidelines from MD Anderson

• Cancer prevention: 7 tips to reduce your risk from Mayo Clinic
  [http://www.mayoclinic.com/print/cancer-prevention/CA00024/METHOD=print]

April 24

Stem Cells and Cancer

Max S. Wicha, M.D.


• Stem cell transplants for treating cancer from the American Cancer Society

• The Evolving Science of Cancer Stem Cells from the National Cancer Institute
• Cancer’s Stem Cell Revolution – Introduction from the University of Michigan Comprehensive Cancer Center http://www.cancer.med.umich.edu/research/stemcells.shtml

May 1  Treatment Modalities and Clinical Trials

Maha H. Hussain, M.D.

• Treatment modalities from Virginia Commonwealth University Massey Cancer Center http://www.massey.vcu.edu/treatment-modalities.htm

• Treatment of cancer from the World Health Organization http://www.who.int/cancer/treatment/en/

• Cancer Treatment Modalities from Quizlet http://quizlet.com/6927272/cancer-treatment-modalities-flash-cards/

• Introduction to Cancer Treatment from Virginia Cancer Institute http://www.vacancer.com/newly-diagnosed/introduction-to-cancer-treatment/

• Clinical Trials from the National Cancer Institute http://www.cancer.gov/clinicaltrials

May 8  Personalized Medicine – Using Genomic Information to Guide Therapy

Arul M. Chinnaiyan, M.D., Ph.D.

• What Is Personalized Medicine? From Duke University Health System http://www.dukepersonalizedmedicine.org/what_is_personalized_medicine/

• What is personalized medicine? From The Jackson Laboratory http://genetichealth.jax.org/personalized-medicine/what-is/index.html

• What is Personalized Medicine? An Outcome of the Human Genome Project http://patients.about.com/od/yourdiagnosis/a/persmedicine.htm

• What is Personalized Medicine? From Harvard Medical School http://pcpgm.partners.org/about-us/PM

• The Future of Personalized Medicine, From NIH Director Dr. Francis S. Collins http://www.nlm.nih.gov/medlineplus/magazine/issues/winter10/articles/winter10pg2-3.html

• Frequently Asked Questions About Genetic and Genomic Science from the National Human Genome Research Institute http://www.genome.gov/19016904

• Cancer Genomics from the National Cancer Institute
  http://www.cancer.gov/cancertopics/understandingcancer/cancergenomics/

• Targeted Cancer Therapies from the National Cancer Institute
  http://www.cancer.gov/cancertopics/factsheet/Therapy/targeted

• Gene Therapy for Cancer: Questions and Answers from the National Cancer Institute
  http://www.cancer.gov/cancertopics/factsheet/Therapy/gene

Books by Robert A. Weinberg, Ph.D. Founding Member, Whitehead Institute & Professor of Biology, MIT (intended for the lay audience):

➤ Racing to the Beginning of the Road: The Search for the Origin of Cancer by Robert A. Weinberg @ Amazon.com http://www.amazon.com/Racing-Beginning-Road-Search-Origin/dp/0716732831 or check your public library.

➤ One Renegade Cell: How Cancer Begins @ Amazon.com @ http://www.amazon.com/One-Renegade-Cell-Science-Masters/dp/0465072763 or check your public library.

➤ Genes and the Biology of Cancer co-authored with Harold E Varmus @ http://www.amazon.com/Biology-Cancer-Scientific-American-Library/dp/0716750376 or check your public library.

Books from the American Cancer Society (check your public library):

➤ American Cancer Society complete guide to complementary & alternative cancer therapies (2009)

➤ American Cancer Society complete guide to nutrition for cancer survivors : eating well, staying well during and after cancer (2010) Grant, Barbara L./ Bloch, Abby S./ Hamilton, Kathryn K./ Thomson, Cynthia A., Ph.D.


Readings in Scientific American (Sci Am) (check your public library for access to these articles or you can get the full-text by visiting the Taubman Health Sciences Library and using the guest access on our computers. Contact Merle Rosenzweig @ oriley@umich.edu for instructions.):


• Sci Am. 2011 Oct;305(4):20. Outsmarting Cancer. A biologist talks about what makes disease-
causing proteins so difficult to target with drugs. Stockwell B. PMID: 22106796 [PubMed - indexed for MEDLINE]