

# MINI MED 2012

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## 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](http://www.nlm.nih.gov/cgi/mesh/2012/MB_cgi)
- From Wikipedia - <http://en.wikipedia.org/wiki/Neoplasm>

**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>
- ***The molecular biology of carcinogenesis.*** <http://www.ncbi.nlm.nih.gov/pubmed/8334671>
- Cell Biology of Cancer <http://training.seer.cancer.gov/disease/cancer/biology/>
- Cell Biology and Cancer [http://science.education.nih.gov/supplements/nih1/cancer/guide/guide\\_toc.htm](http://science.education.nih.gov/supplements/nih1/cancer/guide/guide_toc.htm)

- 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  
<http://www.cancer.gov/cancertopics/screening/types>
- 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  
<http://www.cancer.org/Healthy/FindCancerEarly/CancerScreeningGuidelines/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/colorectalancer/causesandriskfactors/video/cc2\\_na\\_intro.html](http://nihseniorhealth.gov/colorectalancer/causesandriskfactors/video/cc2_na_intro.html)
- Cancer Screening Guidelines from MD Anderson <http://www.mdanderson.org/patient-and-cancer-information/cancer-information/cancer-topics/prevention-and-screening/cancer-screening-guidelines/index.html>
- 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 Cells from MedlinePlus <http://www.nlm.nih.gov/medlineplus/stemcells.html>
- Stem cell transplants for treating cancer from the American Cancer Society  
<http://www.cancer.org/Treatment/TreatmentsandSideEffects/TreatmentTypes/BoneMarrowandPeripheralBloodStemCellTransplant/stem-cell-transplant-types-of-transplant>
- The Evolving Science of Cancer Stem Cells from the National Cancer Institute  
<http://www.cancer.gov/ncicancerbulletin/072710/page4>

- 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/](http://www.dukepersonalizedmedicine.org/what_is_personalized_medicine/)
- What is personalized medicine? From The Jackson Laboratory <http://genetichhealth.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>
- What is gene therapy? <http://ghr.nlm.nih.gov/handbook/therapy/genetherapy>

- 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>

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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.
- American Cancer Society's complete guide to colorectal cancer (2006) Levin, Bernard.

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](mailto:oriley@umich.edu) for instructions.):

- Sci Am. 2011 Oct;305(4):66-71 . A new ally against cancer. von Hofe E.

Antigen Express, Worcester, Mass, USA. PMID: 22106809 [PubMed - indexed for MEDLINE]

- 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]

- Sci Am. 2011 Jun;304(6):72-7. The devil's cancer. Jones ME, McCallum H. University of Tasmania. PMID: 21608407 [PubMed - indexed for MEDLINE]