Additional Resources on Cancer

Lab Activities on Cancer and Genes, Howard Hughes Medical Institute, including an 8-minute video on cancer tumor genetic defects and 2 activities for students to visualize defective cancer genes, determine where in the genome they are found, and then look at these DNA defects in actual cancer patients. [http://www.hhmi.org/biointeractive/cancer-discovery-activities?utm_source=BioInteractive+News&utm_campaign=f1129f24be-BioInteractive_News_Vol_319_17_2014&utm_medium=email&utm_term=0_98b2f5c6ba-f1129f24be-69776381](http://www.hhmi.org/biointeractive/cancer-discovery-activities?utm_source=BioInteractive+News&utm_campaign=f1129f24be-BioInteractive_News_Vol_319_17_2014&utm_medium=email&utm_term=0_98b2f5c6ba-f1129f24be-69776381)

Great resource for models of molecules: [www.3dmoleculardesigns.com/](http://www.3dmoleculardesigns.com/)

Especially useful in the Oncofertility Curriculum are:

a) DNA model made of sturdy plastic with the bonds made of magnets. Students can fully understand how a 12 base pair sequence of DNA is constructed.

b) Map of the Beta-Globin Gene shows the base pair sequence along with known diseases which result from an insertion and/or deletion frame shift as well as errors in intron and exon splicing.

c) Protein Folding with 15 Tacks and a 4-Foot Toober shows how amino acid residues interact to fold the protein into a functional structure, like an enzyme or structural protein, and how the residues can interact to interfere with proper folding.


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For the 3 part development of Gleevec and beyond, discussed by Dr. Brian Druker, OHSU, see:

Part 1  https://www.youtube.com/watch?v=d6xU3bgBLlw  CML and Gleevec development, clinical trials
Part 2  https://www.youtube.com/watch?v=FA4Xj62EQfE  Gleevec resistance in CML patients
Part 3  https://www.youtube.com/watch?v=6aL-3w8p2KM  Extending the Imatinib (Gleevec) Paradigm

For further lessons on  BRCA1  and  BRCA2  genes from Northwest Association for Biomedical Research (NWABR):
https://www.nwabr.org/teacher-center/introductory-bioinformatics-genetic-testing#overview

University of Rochester, Life Sciences Learning Center (LSLC) Labs and Activities on:
  Antioxidants and Cancer
  Cancer Trends: A Document Based Question
  Cancer Truth or Myth Survey
  The Cell Cycle and Cancer
  Coping with Cancer
  DNA Microarrays (Gene Chips) and Cancer
  Human Papillomavirus (HPV) and Cancer
  Metastasis and Homeostasis
  Reading for Evidence: Cancer Understandings
  The Right to Choose: A Cancer Case Study
  Thalidomide: A Cancer Treatment
  What Patients Need to Know About Cancer
  Your World: Fighting Cancer with Biotechnology

Go to  https://www.urmc.rochester.edu/life-sciences-learning-center/lessons.aspx  to register for Lessons (requires only your email address). Registration will allow you access to the above and more.