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**

Great resource for models of molecules: 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.

For a review of the structure of the DNA molecule and the history of its development in a 16 min 53 sec video, go to http://www.hhmi.org/biointeractive/double-helix?utm_source=BioInteractive+News&utm_campaign=a7dcdcd9b8-BioInteractive_News_Vol_381_6_2015&utm_medium=email&utm_term=0_98b2f5c6ba-a7dcdcd9b8-69776381

For the in-depth film guide for students and teachers accompanying the DNA video, go to http://www.hhmi.org/biointeractive/film-guides-double-helix?utm_source=BioInteractive+News&utm_campaign=a7dcdcd9b8-BioInteractive_News_Vol_381_6_2015&utm_medium=email&utm_term=0_98b2f5c6ba-a7dcdcd9b8-69776381

For the3 part development of Gleevec and beyond, discussed by Dr. Brian Druker, OHSU, see:
Part 1 https://www.youtube.com/watch?v=d6xU3bgBLIw 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.