**BIO380: Cancer Biology**

**Homework Assignment #3: Classifying Cancer Genes**

**50pt, Due Wednesday Feb 1**

1. Watch the *Cancer as a Genetic Disease* video clip (<https://www.hhmi.org/biointeractive/cancer-genetic-disease-video-highlights>).
2. Complete the worksheet handed out in class. It is also posted on moodle in case you lost it. (15pt)
3. Complete the “3-2-1” analysis of the in-class activity and video: 3 things you learned, 2 things that surpised or particularly interested you and 1 question you still have. (6pt)
4. Answer the following questions. (4pt)
	1. Why is it important to know the loci of proto-oncogenes and tumor supressors?
	2. Why might the HUGO Gene Database be a useful resource for people to know about?
	3. The video discusses oncogenes being similar to a “gas pedal” and tumor supressors as a “break”. This analogy is not entirely accurate. Make up a new analogy to help others understand how oncogenes and tumor supressors work.
5. Mini-research project[[1]](#footnote-1) (25pt)

Select one of the gene cards you researched and draw a concept map (example below) comparing the function of the normal gene to that of the mutated, cancer-causing gene. Suggested websites for your research include the [National Institutes of Health’s (NIH’s) Genetics Home Reference](https://ghr.nlm.nih.gov/) website, the [Online Mendelian Inheritance in Man (OMIM)](https://www.omim.org/) online catalog, the [PubMed](https://www.ncbi.nlm.nih.gov/pubmed/) website, and the [COSMIC](http://cancer.sanger.ac.uk/cosmic) database.



1. HHMI Biointeractive Website. “Cancer Discover Activities.” [↑](#footnote-ref-1)