Cancer Biology 101 (癌症生物學導論)
Monday M5

Instructor:
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Course Description:
If you want to understand how cancer starts and spreads, this course is for you. This course is also a useful introduction to cancer biology for undergraduate students from diverse backgrounds. Some biology knowledge will be helpful but not required. We'll talk about the origins of cancer and the genetic and cellular basis for cancer. The factors that have been implicated in triggering cancers and research directions for cancer therapy will also be covered.

Primary Resources:
>*Cancer A-Z*, American Cancer Society
>*Understanding Cancer Series*, National Cancer Institute
>*CancerQuest.org*, Emory University
>*Learn.Genetics*, University of Utah
>Recent publications investigating human cancer

Course Requirements and Expectations:
- Students are required to read the course materials. If you read the materials before each class, discussions will be more meaningful, and learning will increase. Expect to spend a minimum of 30 minutes reading per week.
- Each student will participate in a group presentation and also represent your team in the competition.
- Each student will participate the final exam during the term.

Table of Contents:
Unit 1: Origins and Overview.
- The History of Cancer
- What is Cancer?

Unit 2: The Biological Building Blocks
- Basic Genetics (Mutation, DNA Repair, and Recombination)
- Epigenetics, Gene Expression and Regulation (Transcription and Translation, Signal Transduction Pathways)

Unit 3: Cancer Genes
- Oncogenes
- Tumor-Suppressor Genes

Unit 4: Death and Life: Apoptosis and Tumorigenesis

- The Apoptosis Pathway
- "Death Receptors"
- Tumorigenesis

Unit 5: Breast Cancer 101
- About Breast Cancer
- Breast Cancer Research Examples (Molecular Subtypes, Cell-to-cell Variation)

Unit 6: Student Presentations

生成式人工智慧倫理聲明

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