

## **Clinical and Research Genomics Assignment #6**

**From Lecture\_13 (April 25<sup>th</sup>): Genetic Intellectual Property and Ethics**

---

**Assignment: Multiple Choice and Short Answer Questions**

**Due Date: 5:00PM on May 2<sup>nd</sup>**

1. Which of the following best describes an exosome?
    - a) Cell-specific, membrane-bound organelle that holds DNA
    - b) Circulating organelle that contains exonucleases
    - c) Fragment of contained bacterial cytoplasm and lipids inside cells
    - d) Organelle that excretes small molecules that regulate genes
    - e) Small membrane vesicle of endocytic origin secreted by most cell types
  
  2. Which of the following is NOT an application of cell-free DNA technology?
    - a) Assessment of transplanted organ rejection
    - b) Cancer detection
    - c) Detection of tissue of origin, using epigenetic marks
    - d) Preconception carrier detection
    - e) Prenatal detection of chromosomal abnormalities
  
  3. What are the sources of false positives in sequencing? How can they be addressed?
  
  4. What are the sources of false negatives in sequencing? How can they be addressed?
  
  5. What is heteropaternal superfecundity? How many other ways can you have twins with different phenotypes?
- 

**Please hand in the assignment on the day of the lecture or email beforehand.**

**For any questions, please contact Alexa McIntyre ([abm237@cornell.edu](mailto:abm237@cornell.edu)), Ebrahim**

**Afshinneko ([eba2001@med.cornell.edu](mailto:eba2001@med.cornell.edu)), or Professor Mason ([chm2042@med.cornell.edu](mailto:chm2042@med.cornell.edu)).**