Team Number: SJCHS172
School Name: San Juan College High School
Area of Science: Microbiology
Project Title: Curing Breast Cancer using Sloths

Problem Definition: The problem is breast cancer. This is a big problem because in 2016 “595,690 people in the U.S.” (National Cancer Institute) People passed away because of this disease and it needs to be stopped. But the question is by what exactly?

Problem Solution: The solution to the problem is a “Bradypus variegatus” (Higginbotham S, 2014) or more commonly known as the Three Toed Sloth. The fungi in sloth fur than can cure breast cancer is called The *Ascomycota,* which is also referred to as “filamentous ‘hyphal’ organisms” (Microbe-Wiki), can cure breast cancer, other deadly diseases and if we can do this in a simulation then maybe in a few years and then maybe we can fix one of the biggest problems in the world.

Progress to Date: Me and Isaiah have been working on this since September 22 and that when we barely started talking and reading about the project we were scared by the numbers and also surprised at that number. The reason being is because that is a lot of lives lost, but if this can work how we expect then cancer will be beaten and even reunite families. But right now with our simulation, it is actually moving and making progress instead of making a block.

Expected Results: The expected results were that the fungi will kill or cure the breast cancer cells making them disappear. And maybe in a few years maybe we can simulate this in real life where we make the fungi grow naturally and make it duplicate in an artificial setting. It’s like how pills are made when they put the bacteria on a big sheet and they leave that sitting there for about 2 or 3 days and then the bacteria should have been spread across all over the sheet and then they put little pieces of the sheet into the pill capsules. Then we distribute that all across the world for people to use and get their life, family, and health back from breast cancer.

Team Members: Isaiah Joe and Jaron Yazzie
Sponsoring Teacher: Don Lorett, the principal of San Juan College High School and Dena Burgert our Super Computing club teacher.

References

Abstract. (n.d.). In *Cancer is a hybrid produced by a relationship between a plant bacterium and a mammalian cell: an original concept.* Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/8819114 (Reprinted from Cancer is a hybrid produced by a relationship between a plant bacterium and a mammalian cell: an original concept, *PubMed*, 1996, July)

Higginbotham, S., Linington, R. G., Wong, W. R., Spadafora, C., Iturrado, L., & Arnold, A. E. (n.d.). Sloth Hair as a Novel Source of Fungi with Potent Anti-Parasitic, Anti-Cancer and Anti-Bacterial Bioactivity. *PLOS One*. https://doi.org/10.1371/journal.pone.0084549

Metcalf, T., & Metcalf, G. (2008). *Perspectives on diseases and disorders cancer*. Farmington Hills, MI: Thomson Gale.

Petersen, J. H. (2013). *The Kingdom of Fungi*. Princeton, NJ: Princeton University Press.

Radiation therapy. (n.d.). Retrieved October 26, 2017, from National Breast Cancer website: http://www.nationalbreastcancer.org/breast-cancer-radiation-therapy

Sumner, J. (2000). *The natural history of medicinal plants*. Portland, OR: Timber Press. https://doi.org/10.2307/4451180