Biological Warfare - Modern Medicine vs Modern Disease

Lecture Series Outline

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Learning in Retirement – Spring 2018

Subjects For Discussion

Week 1  Introduction to Medical Research. We will introduce the tenets of the drug development pipeline from basic fundamental research to clinical trials. We will also take a look at the medical research facilities we have here in Ottawa and the surrounding area. Lastly, I will give a brief introduction to three key tools used in the field: stem cells, genetic manipulation, and DNA sequencing.

Week 2  Muscular dystrophy: We are making major strides against this disease and are quickly striving towards a cure on many fronts. You will learn about this devastating and debilitating disease but you will also learn how we are fighting back. We will conclude by discussing how stem-cell therapy and genetic manipulation of defective dystrophin can help us get to a cure.

Week 3  Cancer: What is cancer and how might we beat it. The toolkit used to fight cancer has grown quickly in recent years and we will soon have new options beyond traditional surgery, chemotherapy, and radiation. We will focus on the most modern approaches to treating the disease specifically the use of oncolytic viruses. We will highlight local researchers who are pioneering this new field.

Week 4  Zika Virus: What exactly is this virus and why does it cause babies to be born with major abnormalities? Zika is a new version of an old virus but the threat is real and the answers we currently have are limited. However, we have made great strides in understanding and controlling the devastating virus. We will look at recent findings, the recently discovered sexually-transmitted nature of the virus, and anti-Zika drugs. Also, we will discuss the possibility of a Canadian-made vaccine.

Week 5  AIDS and Cystic Fibrosis: What is AIDS and why is it such a complex disease to treat? We have been able to greatly prolong the lifespan of those infected with HIV and are on the edge of a true cure. What is the the drug “cocktails” that many patients take and what might the cure look like? Learn about the first person to ever be cured of AIDS. Also, we will take a quick look at what exactly cystic fibrosis is and how medical science may soon make huge progress towards treating CF.

Week 6  Alzheimer’s: This disease causes people to slip away from us right in front of our eyes. What are the roles of amyloid plaques, oxygen stress and DNA mutations on Alzheimer’s. How will a new brain scanner at the Ottawa Hospital help us fight back? Also a look at some current treatments still in the pipeline and some recently approved drugs.