

Essay-Contest 2017/18

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The Creativity in Scientific Work:

Canada is certainly a country of progressivity, a place where one can experience truly dynamic science, engaging politics, and, according to the Organization for Economic Cooperation and Development, with 51% [1], Canada has the highest proportion of college graduates in the world. (TIME/ Sep. 27. 2012) [1]. Surely, these marvellous achievements would not have been possible without the dedicated work of generations of curious and devoted scientists who contributed their part to the future that is now.



And that is why I do not want to write this essay about a scientist of the past, but about one that is working now to ensure the further progression of mankind: Dr Jennifer Gardy. As a young girl, Jennifer Gardy wanted to be a doctor in the morning, a dentist in the afternoon, and a ballerina at night [2]. This wish sprang from the desire to combine science with art, epidemiology with acting, maths with music [3]. Later, in her teen years, this changed when she watched the movie “Outbreak” (1995) with Dustin Hoffman. She decided that would be what she wanted to do for a living: to become what she calls a “Disease Detective”. She decided to major in science, but also to keep up her artistic side.

In an interview with Engineering Stories, she said that her desire to do something creative next to her scientific work never really left. Dr Gardy enjoys balancing art and science. In that same video, she proclaims that: *“The creativity that art requires makes my science actually a lot better!”* [2] -Jennifer Gardy 2017 [Spotlight: Creative Scientist/minute 0:50/ Sep. 20. 2017] [2] [The music in our genomes | Jennifer Gardy with Peter Gregson | TEDxVancouver/ Dec. 24. 2014] [3], which is a statement I could not agree more with. Her creative approach to science makes it seem less sterile, more attainable.

Jennifer Gardy is now a Senior Scientist in Molecular Epidemiology at the British Columbia Centre for Disease Control by day, and at night, or in her free time, she is a guest-hosts in CBC's series "The Nature of Things", where she answers questions like whether alcohol really warms you up when you are cold, or if mosquitoes prefer the blood of women. Her science-communication job also led to her writing a children's book called: "It's Catching: The Infectious World of Germs and Microbes". [4]

As head of the BC Centre for Disease Control Genome Research Laboratory, her main area of research is in the field of communicable genomic epidemiology. She is also using whole-genome sequencing of bacterial pathogens to understand outbreaks of epidemics. [5] When there was a huge tuberculosis outbreak in Canada for roughly three years between 2007 and 2010, her method of whole-genome data sequencing revealed two genetically distinct lineages of tuberculosis with identical types of genomes, suggesting two concomitant outbreaks. Both lineages descended from a common ancestor, proving a social, not a genetic, cause of the spreading. Further investigation revealed that the recent outbreak could be traced to the highly increased crack-cocaine use in the area. [10] (UBC/no date given) [5] (Whole-Genome Sequencing and Social Network Analysis of a Tuberculosis Outbreak/ Jennifer Gardy/ 2011) [10]

Gardner's contributions were recognized in 2014 by the YWCA Women of Distinction Award for Science, Technology and Research. [8] (Dr Jennifer Gardy wins a YWCA 2014 Women of Distinction Award/ Bryan Nordley/ 2014). With her dedicated work, Dr Gardy has influenced the lives of thousands of kids who watched her on television or read her book. In my eyes, the connecting of sciences with creative work is one big step towards getting more and more children involved in such professions. Especially girls are often discouraged from taking up a scientific career because they look at all those famous men who are present in our media and history books and see the lack of women as a sign that they should not even consider trying to get into those careers. [6] (Eileen Pollack/NY times/Oct. 3. 2013)[6]

Scientists who entertain and encourage young adults in varied media play one of the most important roles in the lives of future scientists. They include people like Kari Byron, known as a co-host of MythBusters, Simone Giertz, YouTuber and robotic scientist, and of course Jennifer Gardy. In the graphic novel "Nowhere Men" it says that "Science is the new Rock 'n' Roll"[9] and looking at the popularity of Shows like The Big Bang Theory, Because Science,

MythBusters and StarTalk with Neil deGrasse Tyson, I think this statement could right now not be truer. (Nowhere Men /Eric Stephenson/Title cover/ 2012) [9]

When others ask her what you have got to do to be able to be a microbiologist who also co-hosts a television series, she responds with simple but true words: she tells them that they should just do it. To just go out there and work to achieve your dreams. She was the kid that would dissect a fish in the morning and have a theatrical performance for her parents' guests in the afternoon. [7] (Jennifer Gardy on research and science communication/Biol240/ Oct. 10. 2014) [7]

Jennifer Gardy also talked about how knowledge is a privilege, and science is a very creative field. If you can bring a passion into that field, it really helps to communicate that knowledge to the students. [2]

As a teenager and school student myself, I have to say Jennifer Gardy and scientists or professors like her, in general, are truly inspiring to me. Their way of creatively communicating difficult to understand topics to a younger audience is just captivating. I hope to one day also be an inspiring person like her to the next generation of aspiring scientists.

~Trystan Noll

Bibliography:

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- [4]: <https://www.amazon.com/Its-Catching-Infectious-World-Microbes/dp/1771470534>
- [5]: <http://www.spph.ubc.ca/person/jennifer-gardy/>
- [6]: <https://www.nytimes.com/2013/10/06/magazine/why-are-there-still-so-few-women-in-science.html>
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