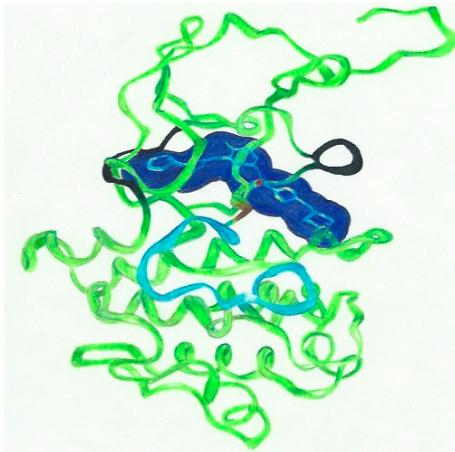


Interview with Dr. William Forrester
Novartis Institutes for Biomedical Research
Boston, Massachusetts
November 02, 2013 5:40 PM



Commission piece on different topic than this interview

Introduction: Dr. William Forrester is the Senior Research Investigator at Novartis Institutes for Biomedical Research. Received education at University of Washington, University of California, Berkeley, and Los Angeles Mission College. Was an Ass. Professor at Harvard Medical School and was Post-Doc at UCSF. Now residing in the greater Boston area.

Interview:

Bethany Davis: What is your name, position, and organization/laboratory/hospital you work at?

William Forrester: William Forrester

Senior Research Investigator
Novartis Institutes for Biomedical Research

BD: How did you come to research in this area?

WF: I'm 54 years old and have recently come to appreciate that I was a scientist long before I entered college. How do I know that? Although I was a very undisciplined student in general, I was very interested in science classes. Oddly, my interest wasn't always enough to compel me to study hard enough to get good grades, but at this point in my life, the seeds of science were already planted. I did spend lots of time playing sports & socializing, but as far as my interests in school, I spent extra hours working with biology and geology faculty, enjoyed the labs especially in chemistry and biology and felt as if I was able to understand concepts in genetics fairly easily. Also during high school I did spend time working with patients at a hospital but also in a research lab.

After high school I went to college and majored in Molecular Biology & during this period I joined a research lab and spent 2 years studying how a tumor virus can insert itself into the genome of mammalian cells. This was my first exposure to cancer research...and it was very basic! By basic I mean that at this level there aren't cancer patients and you're not necessarily working on cancer treatment. Instead there are many mechanisms involved in cancer. For example because cancer is caused by cells that grow out of control, it is important to understand how cells grow and divide. This is complicated and many types of basic cancer research use model systems meaning that these experimental approaches try to reduce the complexity of studying something as daunting as real tumor. In college I studied a virus called SV40 which can cause cancer in monkeys. It also has DNA and the DNA has to make copies of itself just like a cancer cell. The focus of my research was to learn about how SV40 replicates its genome and perhaps can apply this to understanding how cancer cells replicate their genomes.

I also loved research and especially my interactions with other researchers. There is a feeling of trying to solve the most important puzzle in the world but no one really can fully understand the rules to the puzzle. So it takes people being willing to open up, to share ideas, to trust each other and once you and your colleagues can come up with a key question, then you have to think about the simplest experiment to answer that question.

BD: Can you tell me a little about your current work and its implications?

WF: Currently, I'm working on 2 projects:

1. Understanding sarcomas: these are cancers of muscles, cartilage and other types of soft tissues called "connective tissues". This is different than most types of cancer like cancer of the lung, brain, breast, colon and other organs.
2. Understanding tumor suppressor genes: Cancer is caused by a series of genetic accidents. Like a car needs "GO" genes and "STOP" genes that combine to regulate growth. The "STOP" genes are called tumor suppressors and the "GO" genes are called oncogenes. Even if there are lots of growth stimulating signals coming from the "GO" genes, the "STOP" genes can keep a cell from being cancerous. But when a cell loses a tumor suppressor gene that's very serious. But what can you do about mutations that lead to disruptions in tumor suppressor "STOP" genes? Typically these genes are no longer available and therefore you can't make a drug against them. So making drugs that can cure cancer have to figure out a way to exploit the fact that cancer cells lack tumor suppressor genes. So getting back to the car: if your accelerator is stuck you can always slam on the brakes, but when you don't have any breaks, you have to find another way to stop the car. It's a bit tricky. Got any ideas?

BD: What is your life like as a researcher on a day to day basis?

WF: My day to day life involves lots and lots of thinking. I love thinking. I work with very smart people so much of my time is spent talking about things with the smart people I work with. I go to lots of meetings which are mostly about scientific ideas and data and there are LOTS of powerpoint presentations. So learning how to use powerpoint is super important. I also do lots of writing. So being a good writer is super important. Also at these meetings, typically someone is presenting their ideas or data to a room filled with people that might not really want to be there (!). So it is super important that the speaker knows how to prepare their talk so that it is interesting, clear, and informative.

BD: Is there something that you would like to share with the general public or community that cares about prevention, therapies, and cures for the disease?

WF: I am not really working on prevention, but my wife is very focused on preparing healthy foods, lots of fresh green vegetables. I used to eat kind of junky food, but now I really love eating fresh, healthy meals. I

also like exercising because it helps me relax, think about ideas and get stronger. I hope that this is also helping me stay healthy!

BD: Thank you so much I really appreciate the time you spent to give information and thoughts on your work.