

## Dr. Andrew Bett

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Dr. Andrew Bett is a vaccine researcher at Merck Research Labs in West Point, Pennsylvania. Dr.

Bett grew up in Burlington, Ontario, about 40 minutes outside Toronto. In High School, he was always interested in science, but originally thought he would pursue a career in medicine. He started his undergraduate at the University of Western Ontario with plans to later go to medical school.

However, Dr. Bett did his Honours in genetics and became exposed to different possible career paths. He wanted to continue working in genetics and decided to head towards a PhD. Dr. Bett also had an interest in vaccines and ended up doing his PhD in Dr. Frank Grahams lab at McMaster University. During his PhD, Dr. Bett worked with adenovirus (cold virus) vectors that expressed SIV proteins as a model for an HIV vaccine.

Dr. Bett collaborated with another lab during his PhD run by Dr. Caskey. Dr. Caskey was working on using adenoviral vectors for gene delivery for therapeutic purposes. Dr. Caskey was joining Merck as a senior vice president for research and brought his research along using the adenoviral vectors for gene therapy. He asked Dr. Bett if he would come to Merck to do a post doc with him. This is how Dr. Bett ended up at Merck 25 years ago.

During his post doc, Dr. Bett shared his knowledge on adenoviral vectors with Merck vaccine researchers. This sparked interest at Merck for the use of adenovirus vectors as an HIV vaccine and Dr. Bett did some work on vaccines during his post doc. This led to Merck offering Dr. Bett a



permanent job in vaccines. I commented how that seemed so lucky the way everything worked out. Dr. Bett agreed that there was some luck and 'who you know' that led him to be at Merck. He also added that the opportunity to do a post doc at Merck helped open the door for him to be able to collaborate with others and then be offered a job.

Today, Dr. Bett works on early discovery vaccine research and is responsible for a group of 11 people. They work on vaccine platform technology as well as expressing and purifying vaccine antigens. They collect and analyze data which is needed to determine if a vaccine should move onto human trials. This includes using in vitro assays for gaining information on pathways or signaling and in vivo tests on immune responses.

Dr. Bett talked about how collaborative his work is. Often, his team is working with other departments to help carry out in vivo studies which Dr. Betts team will design and then analyze the results of. They also work with other departments at Merck who specialize in areas such as scaling up the production of vaccines, marketing, and other departments with their own expertise. Work at Merck is very collaborative, which Dr. Bett says is an advantage as it helps them move vaccines quickly into clinical trials.

I asked Dr. Bett what his favourite part of his work is. He told me he loves working with younger scientists and helping them develop as scientists and in their careers at Merck. He also loves looking at the data. When new data comes in, Dr. Bett says analyzing it and finding new questions to tackle is the most fun part of being a scientist.

The more challenging part of Dr. Betts work, he says, is being responsible for driving discussions and keeping the group he's responsible for on the same path. He also mentioned that the timelines for projects can be tight, which is another challenge.

The last thing I wanted to ask Dr. Bett was if he had any advice for graduate students who will one day be looking into getting a research job. Dr. Bett told me he gets asked that question a lot. He said when it comes to working in a large pharmaceutical company, like Merck, it's very important to be able to collaborate and be able to express yourself and opinions to your team. Having the ability to hand things off to another team is also important. Since at Merck they



work on early discovery, there comes a point where projects must be handed off to groups that focus on later stages of development. Overall though, when people try to control projects or the course of a vaccine, Dr. Bett says, it never ends up with good results. He said that at Merck you get the opportunity to work on many different projects, but you don't own anything, Merck owns it. Dr. Bett finds it rewarding to see projects he's had the opportunity to work on move onto clinical trials.