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A conversation with Tadataka Yamada

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Conversations with Giants in Medicine

Dr. Tadataka "Tachi" Yamada (Figure 1) joins us for our next Conversation with Giants in Medicine. Born in Japan and trained in the United States as a gastroenterologist, he quickly rose to be the chairman of the Department of Internal Medicine at University of Michigan. He moved to industry and eventually became the Chairman of Research and Development for GlaxoSmithKline. In the next step in his interesting career, he took on the presidency of the Bill and Melinda Gates Foundation Global Health Program. In this capacity, he oversaw over $9,000,000,000 in programs directed at addressing health challenges of the developing world. In 2011, Dr. Yamada moved on to become the Chief Medical and Scientific Officer (CMSO) and Executive Vice President of Takeda Pharmaceuticals. The full interview can be seen on the JCI website, http://www.jci.org/kiosk/cgm. JCI: Can you tell us a little bit about your path to get to medical school? Yamada: Well, my grandfather was a physician. He died before I was born, but my mother would often talk about him and talk about the profession as a very special profession. So, I grew up wanting to be a physician. For my third birthday I asked for a stethoscope and I got one, so I played doctor. But at one point in college, I got more interested in history and […]

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JCI: Can you tell us a little bit about your path to get to medical school?

Yamada: Well, my grandfather was a physician. He died before I was born, but my mother would often talk about him and talk about the profession as a very special profession. So, I grew up wanting to be a physician. For my third birthday I asked for a stethoscope and I got one, so I played doctor. But at one point in college, I got more interested in history and philosophy and I was actually scheduled to go to graduate school with the Woodrow Wilson Fellowship, but it was the time of the Vietnam War, so if you went to medical school, you were deferred from military service.

JCI: Did you do any scientific research during medical school?

Yamada: Because I was a history major in college, I was not trained in science like many other medical students were when I went to medical school. When I got to medical school and the first few years were all about science, I was way behind. I really didn't understand it, know about it, or care about it. But it was really when I went on the ward services as a third-year clerk that I realized you had to be a good scientist if you were going to be a good doctor. And that's what transformed my interest in medicine and in research and science. In my fourth year in medical school, I actually spent a good part of my elective time working in the laboratory of a pulmonary physician at NYU named Roberta Goldring.

JCI: Your early start was in the pulmonary field, but you made your mark scientifically within gastroenterology.

Yamada: The Medical College of Virginia, where I did my residency, had a strong GI division, and they got me very excited about gastroenterology. In the meantime, I had to take a detour into the military, because I was a Berry Plan Officer. I spent three years at the US Army Medical Research Institute of Infectious Diseases in Fort Detrick, Maryland. I did research there — they gave me a lab and a technician and some money and said, "Do research." I wasn't quite sure how to do it, but I spent time at the NIH and learned some protein chemistry.

I was trying to understand the role of the bradykinin system in septic shock, and that got me interested in small peptide molecules. Amazingly enough, because the military set you up this way, you either became a very independent investigator right away or you just didn't become an investigator at all. By the time I finished my army commitment, I had seven papers, but I didn't have a mentor, I hadn't worked in anybody's lab; I just had to create my own lab and do research.

JCI: What was your path from there to the University of Michigan?

Yamada: I went to UCLA for my gastroenterology fellowship. One of the fathers of modern gastroenterology, Morton Grossman, was there, and I wanted to train with him, and he was interested in peptide hormones that altered gut function. I was very fortunate that in those days it was possible to get grants early. So by the time I finished my fellowship, I had a VA career development award and an R01 grant from the NIH, and that set me on a path. Bill Kelley, from the University of Michigan, was looking for a chief of gastroenterology at the University of Michigan's VA Hospital. I liked Michigan, and I liked Bill, but I didn't like the job they were recruiting for, so I turned Bill down. I was only a year and a half out of my fellowship when Bill started to recruit me and I just felt I wasn't ready. He told me, "You're the person I want in gastroenterology, so you tell me when you're ready and I'll keep the job open for you."

It was about another year, a year and a half, and I was actually looking at another position at another institution, and I made a decision that I was going to go there. But I felt depressed about the decision, so I called Bill up and I said, "Bill, do you still have that job open for me?" And he said, "Come to Michigan." I was there for 13 years. I was the chief of gastroenterology for seven years and I was the chairman of medicine for six years.

JCI: And during that experience, did you always have your eye on an eventual career in industry?

Yamada: I had no idea I was going to go into industry. I enjoyed being chief of gastroenterology. I actually think a division chief in medicine is the best job there is in an academic medical center. You have a good group, you can recruit good people, you are active in the lab, and you're having fun. And I became the chairman of medicine after Bill left. So I stayed at Michigan, and I was able to keep my lab going, and I was very involved in both the research and the teaching. And if you're chairman of medicine, other people are going to come talk to you about being a dean or vice president somewhere. I looked at a few of those jobs, and I thought I didn't want to do that.

JCI: So then, what changed to make you consider the job at SmithKline Beecham, and then, later, GlaxoSmithKline?

Yamada: You're working in the laboratory; you're doing research that's pretty basic. And you feel like this work is going to actually have an impact on patients somewhere down the line, but you're never sure, and you're pretty distant from any direct effect on patients. I always wanted to have an impact on patients' lives. I had written a book chapter for a textbook of gastroenterology — more people knew about that chapter than any other research that I'd done, and I realized that educating people is really important. You can have an impact on a great number of people's lives if you can educate people. But I got a call from a headhunter who said they were looking for a member of the board of directors of the SmithKline Beecham. When I went, I realized that these people were really serious and had a very difficult task. Making medicines is maybe the hardest task in biomedical science.

I used to think basic research was tough. When you actually have to make a medicine, so many things can go wrong. The process is so complicated and difficult. The intellectual challenge of it was amazing to me, and if you were successful in making a drug, to know that that drug had

Figure 1
Ushma S. Neill interviewing Tadataka Yamada on April 28, 2012. Image credit: Karen Guth.

an impact on so many people's lives — well, that sold me on the industry. And when they asked me, after a couple of years on the board, if I'd join the company, I didn't think twice about it.

JCI: While you were at the helm of GSK, you oversaw a near-doubling of the number of drugs in the GSK pipeline, from 50 to 97.

Yamada: Because I hadn't come from an industry background, I could look at how people were doing things with a very fresh eye. I took this big operation and divided it up into smaller units, and I gave those smaller units authority and accountability. I also removed as much bureaucracy as I could. I think we got a huge amount of productivity out of it.

JCI: After all the success at GSK, how did you make the decision to leave for the Gates Foundation?

Yamada: After the merger, the new GSK was a big player in HIV. And in 2000, GSK sued Nelson Mandela and the government of South Africa over the pricing of HIV medicines. That shocked and embarrassed me and made me wonder what I was doing in the company. I told the board of directors I thought we should actually be making medicines for people who need them. I proposed to set up a laboratory that focused on malaria and TB, to make medicines without worrying about whether we make money or not. We raised money from collaborations with product development partnerships, and the Gates Foundation largely funded these groups. After a couple of years, I went to the Gates Foundation to talk about what we were doing. The CEO of the foundation said to me, "Can I see you in the office?" We went into the office, and she says, "We're wondering if you'd come here and run our global health program." About a month later, I met with Bill and Melinda, and they really inspired me. Again, I didn't think twice about it, and I left the pharmaceutical world and joined the Gates Foundation.

JCI: What did you accomplish during your time with the Gates Foundation?

Yamada: I think the first was creating a sense of urgency. A lot of people had gotten comfortable with the idea that since the problem is so big, there's nothing you can do about it, but we changed that. We also realized that we really needed a truly innovative approach to solve some of these big problems: we created a program called Grant Challenges Explorations, which was a program focused on innovation. Some of the ideas that have come from that program are just fantastic; some of them seem wild and crazy, but that's where true innovation's going to come from. A third thing was we really focused a lot on measurement — measuring impact, creating vehicles like the Institute for Health Metrics and Evaluation, the Health Metrics Network — and collaborating with the international initiative for impact evaluation to get a handle on whether we were moving the needle or not. Lastly, we furthered partnerships; there's an old African adage that, "If you want to go fast, travel alone. If you want to go far, travel together." In the world of global health, there are lots of players. There's WHO, UNICEF, Global Fund, and others. We worked hard to create a collaborative network to accomplish a common goal.

JCI: You speak with such excitement about the things that you did there. So what motivated you, then, to leave that role to go back into the pharmaceutical world [Takeda Pharmaceuticals]?

Yamada: When I left Japan at age 15 to come to the US, I made my father a promise that one day I'd come back to Japan. I felt that what I learned at the foundation — about urgency, innovation, measuring, and partnering — these things would help the pharmaceutical industry. I actually believe that the pharmaceutical industry is the most important industry in the world. There is no more cost-effective solution for health problems than a pill or a vaccine. Take the polio vaccine as an example: the average price UNICEF pays for polio vaccine today is 12 cents. These vaccines, as well as the medicines that have transformed HIV in Africa and elsewhere in the world, are created by the pharmaceutical industry. I felt that this is where I could make an impact and at the same time live up to a promise I made to my father many years ago.

JCI: What advice would you give to trainees that would want to follow your path towards a career not necessarily entirely in academic medicine?

Yamada: Being a physician is tremendously liberating. You can be a great clinician, you can be an academician doing clinical work or teaching or doing science, you can be an administrator, you can work in government, you can work in industry, you can work in philanthropy — there's no limit to what you can do. I found it tremendously invigorating and exciting to do different things in different phases in my career. I'm not saying that that's the best way, but it certainly is a fun way to be a physician and to learn that you can contribute to patient welfare in different ways.

JCI: What would you do if you were not a scientist or physician?

Yamada: I was interested in history and government and that sort of thing. I thought I'd be a graduate student. Also, I was much younger, I used to paint a lot, and I thought I might want to be an artist. But medicine is such a rich and full life that I can't imagine anything else right now. I don't think I'll ever stop being a physician.

Ushma S. Neill