Interview with Thomas Eling, Ph.D.

Conducted on August 10, 2017 by John Maruca
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TE = Thomas Eling, interviewee
JM = John Maruca, interviewer

TE: Hello, my name is Tom Eling. I am a Scientist Emeritus at NIEHS. I've been retired for, I guess, two years. Not actually sure to tell you the truth. Came to NIEHS in July 1971. I was in the intramural research program in, used to be called Laboratory of Molecular Carcinogenesis, but now they changed the name. It's not a cancer lab anymore. I guess I've seen it all here.

JM: Well, Tom, thank you for helping us with our history of NIEHS today. To get started, have you always been interested in science?

TE: Yeah, I've always been interested in science. Every time I can think back in my youth, I guess I've always been interested in science and basically in how things work. And so, I got interested early on in my life in different things. I had a little chemistry set and all this kind of stuff that you had back in those days.

JM: So, tell me a little bit about your academic background.

TE: When I went to high school, I took all the science courses and things of that sort, the biology, and the chemistry, and the physics, and the math, and I was always interested in that. Then, I got to the point where I was going to go to college, and I was undecided exactly what I wanted to do. But I had a relative of mine who was a pharmacist who said, "Well, if you go into pharmacy, there's a broad enough base that you can choose different careers. You could go into medicine, you could go into dentistry, you can go into basic science and things of that sort." So, I did my degree in pharmacy, and when I got in there, I got interested in biochemistry. So, I chose to do a PhD in biochemistry. So, I did that, and I had, of course, as my pharmacy background, I had always an interest in pharmacology and things of that, because they're associated together. When I got my degree, I had a doctor degree in biochemistry, but I had a minor degree in pharmacology.

JM: How did that lead into all of your research?

TE: It all kind of ended up tying together. The biochemistry fit the pharmacology, and the whole thing kind of tied together in kind of a career, so to speak.

JM: What research are you pursuing now?

TE: I think right now, I'm just considering myself piddling around. But my research started here, I guess, what I'm predominantly known for is I worked on prostaglandins, which are the lipids that are inhibited by the formation, these lipids are inhibited by things like aspirin, indomethacin, the NSAID things. So, most of my career has been working on those lipids, and particularly how they relate to cancer, because it's things like aspirin; there's evidence that

aspirin reduces colorectal cancer. So, I worked on that problem for a number of years. Then, towards the end of my career, I actually found a protein that was induced by NSAIDs, which we called NAG1, and it turned out that this protein has a lot of really interesting properties. It's a tumor inhibitor, but it's also a protein very much involved in controlling your metabolism. This protein, when you express it in mice, makes the mice leaner; they're resistant to obesity. So, I spent probably the last 10 years of my career working on this protein. Actually, the most interesting stuff was the later stuff with the NAG1, I think, because the drug companies are very interested in that protein. There's a lot of pharmaceutical interest in developing drugs based on this protein.

JM: So that's how this all ties into human health.

TE: Yeah, that's how it ties into human health. Turned out that this protein is a survival protein in that, again, mice that we made it express as protein, live a lot longer than the corresponding wild-type. So, the protein probably is a survival protein of some sort. But it's not clear what's going on.

JM: Is there one discovery that you made that was most surprising?

TE: I think the latest thing with the NAG was kind of like purely by accident. We did an experiment to look for changes in protein expression and found this protein. It's not what we were expecting at all. We thought it was an antitumorigenic protein. It turned out, it's antitumorigenic, but what it's really doing is something completely different. So, the big surprise was we made the mice, they turned out to be so much leaner, but we never expected that.

JM: Over the next few years, what sort of scientific advances would you like to see?

TE: Well, I think there's lots of things. With the prostaglandin field, I think that's more of a mature field. It's still not exactly clear what is going on with its role in cancer. There's a lot of data, but it's still not totally resolved. I think this problem with the NAG1, it's in its infancy, and they need to really figure out what's really going on here, because it has kind of like paradoxical biological effects. It's really not clear, for example, the receptor's never ever been characterized. So, there's a lot of things that need to be done to really solve the problem.

JM: So, what brought you to NIEHS?

TE: Well, let's see, I did my postdoc for a guy by the name of Jim Fouts at Iowa. This was a drug metabolism place. He moved here and started a whole program here. I got back to the University of Cincinnati and didn't like it, so I one day called him up and said, "If you see a job, let me know, I'd like to get out of here." The next thing I know, I was on a plane to Research Triangle Park, and the next thing I knew, I was being hired as a tenure-track appointment, back in the old days when there was really jobs out there. So, that's how I got here.

JM: Tell us one attribute that's important for every scientist.

TE: I think the most important one is curiosity. You got to be curious. Then, you got to have persistence, because things don't work out. You got to have those two things.

JM: If you hadn't become a scientist, what career would you have pursued?

TE: I would've probably ended up in medicine.

JM: Do you have any advice for young people who are interested in a career in science?

TE: Well, today, science is not the lucrative career that it was when I started out. When I finished my postdoc, I had a choice of many jobs. Nowadays, it's the other way around. These people apply for hundreds, and maybe never ever get a job, or they end up doing something they really don't want to do. So, my advice to them is to think very carefully what you're going to do if you're going to get into science, and what is your career goals, what are you going to end up doing. Is what you're doing going to end up giving you a position, because there's a raft of people, there's just too many people out there looking for jobs. So, it's a very difficult thing, so they got to be very careful what they do. I think that funding is pretty high, but the problem is they've over-trained so vastly. Like it used to be, they were looking for people, now I'd say there's probably every job that's open, there's probably 100 people looking for it.