

The American Association of Immunologists

Williams: Were your parents born in this country?

Austen: No. My parents were born in Europe. My father really learned this special kind of engineering in Germany and played a major role in building the dirigibles in Friedrichshafen, where he met my mother, who grew up in the area near Friedrichshafen.

Williams: When did they come to this country?

Austen: After the First World War. So my two sisters were actually born in Germany. My brother and I were born in the United States.

Amazing. I was dumbfounded, to tell you the truth, that anybody would worry about that, but the medical school did, and, obviously, as soon as my brother got there, we then lived together for the next three years in the dormitory at the medical school. We were very good friends always.

Toward the end, about halfway through my senior year and his junior year, and because we had a double room, we usually had martinis on Friday with a group of friends. We were sitting there relaxing on a Friday, and my brother Jerry said to me, "Frank, we're good friends, but we're a little competitive. We shouldn't do the same thing. You're the oldest. You choose either medicine or surgery, and I'll do the other one." This is amazing true.

Williams: So you were at Harvard Medical School from '50 to '54?

Austen: That's correct.

Williams: So what words would you use to describe that experience?

Austen: Marvelous. I mean, again, my brother and I lived together in the dorm. We pooled our resources. Our parents used to give us the money for tuition at the beginning of the year, so we would buy a car in the fall, sell it in the winter to pay the second semester, so that meant that we offered a lot of rides to friends, usually the shuttle to Wellesley [College]. So it was a good experience socially.

Academically it was wonderful faculty, some of whom I'll always remember. The beauty of the Harvard Medical School is the fact that it's affiliated with a number of hospitals, all of which are equal, which means in a sense that the Department of Medicine, which was my interest, was very strong, whether I took something at the Mass General or the Peter Brigham or the Beth Israel or the Boston City, and it just meant you could learn about renal disease or pulmonary disease or heart disease in four different places with diversity of opinions.

So the education, I thought, was wonderful. In a sense, the high point of my medical school was being accepted into the Mass General house staff program, which was one of the two or three most competitive in the country. That was a time when there were twelve interns, not sixty-eight or seventy, as there are now. I had very much hoped that I would be selected for that program, and so I was very happy to be house officer there with eleven other people who I felt were extremely able and enjoyed being with.

Very importantly in terms of the evolution of my thinking what I would do with my life, I

Williams: So you left the study of polio after you left Boston and you moved to these other sites to look into other aspects?

Austen:

Austen: I made general medical rounds until I was seventy, which means general medicine, which I loved. But around that time, the American healthcare changed a lot with the gatekeepers and with the focus on discharging people as quickly as you possibly could. I really felt that it was important for the teaching to be very practical, very “can do,” and that basically a measure function on mechanism was really not what those kids were focused on anymore. They really were focused on

merge the hospitals on the other end of town, which were all together around the medical school, which was the Peter Brigham, the Robert Brigham, and two women's hospitals which had already merged, the Free Hospital for Women and the Boston Lying-In then became the Women's Hospital. So the task was to merge the Women's Hospital, the Robert and the Peter Brigham, and that was no small feat.

The first task was to get a Certificate of Need, and at that time it was turned down for a variety of important reasons, but mostly because the community felt that building a bigger institution in their midst would further damage the concept of a community, and they felt that even the Peter and the Robert and the Women's was not paying adequate attention to the community.

So in order to get a Certificate of Need, the dean hired a sociologist from Brandeis [University] by the name of Steve Miller and assigned two of us to work with Steve and with the community and to find out what it was that we could do to gain their support for building this new medical center. So that's something I did in the evenings, which was quite interesting, in churches, in homes, and the like.

One of the first things that Steve Miller taught us was that in order to interact with the community, the community had to organize. So we actually paid the salaries of people in the community to work against us so that they could define what it was we had to do to make our project acceptable, which we did. They took about three years. We got a unanimous approval of the certificate.

Williams: Who issues the certificate?

Austen: The state. Then once that was under way, the next job was to get the institutions actually to merge, and so I did chair the committee of physicians and hospital directors that worked toward that end. We subsequently completed the merger, built the hospital, and it has now become a very large medical center with primary interactions with the Dana-Farber [Cancer Institute]. For example, all the Dana-Farber patients that need to be hospitalized or hospitalized at the Brigham and Women's Hospital, which is the name that we came up with because it came from these three constituent institutions. So we kept the name Brigham and we kept the Women's, importantly. It interacts with direct passageways to the Children's Hospital, and it's really next door to the medical school, so it's a marvelous place to work and to interact with all these institutions.

Williams: So during this period of transition, what effect did that have on your growing little department?

Austen: It had no negative effect because through an odd—which I'm not going to go into in any great detail. I made the decision that I was immensely enjoying my research and that I didn't want a bigger job, and so I decided not to do a number of other things elsewhere in the United States.

generated, and what its role is in biology. So I'm still working on the same three projects I was working on as a postdoctoral fellow, it's just fifty years later and we can do a lot more.

Williams: The question I've been asking people is—you've just described to me what you'd say have been your major accomplishments. What about disappointments and dead ends?

Austen: I also mentioned the disappointment. I would have liked to have gotten the composition of SRS-A, but I take joy in the fact that Robert Murphy did it with Bengt Samuelsson and used the purification that he worked out with me and my colleagues in our own laboratory. But I would have liked to do that. So what we did is say, "Well, that's that."

Once I knew the structure, I knew that we could not have done it because there was no way that I was going to resolve a lipid link to a peptide by a sulfur bond, so it was much better that he went to a laboratory with the knowledge that he had and had the creativity to lead that analysis. So that's when we moved very sensibly, I think, to isolating the enzyme that made it and that continued to make it. Then we obviously found a variety of receptors that determined all the functions. So it was a blip, but I'm glad it was done, I'm glad somebody else did it, and so it was the disappointment that afforded us the opportunity to go on really and move to the next stage.

Williams: And to collaborate.

Austen: And to collaborate, sure.

Williams: So what impact has your science had on disease and general public?

Austen: Well, I mentioned the issue of age-related blindness. I hope it's going to lead to therapy there, which will be based on blocking, the original reason for which we studied it, which is that amplification loop of the complement system. There are members of industry who are addressing that possibility by making inhibitors or approaching ways of inhibiting it. In the leukotriene area, the cysteinyl leukotriene area, there is a drug out there which is the only small molecule for bronchial asthma that is targeted to the cause of the bronchospasm. All the other drugs that we use are ways that relax the muscle or reduce inflammation, but they don't deal with the pathobiology itself. So the inhibitors of the cysteinyl leukotriene receptor type 1 are targeted to the mechanism of the disease, and they are effective in children and they are effective in the numerous adults and are a major contribution to the management of bronchial asthma that is mechanism-based. So that, obviously, is very meaningful.

Williams: What percentage of sufferers are positively affected by that?

that there was enough money in the system to take care of the folks who were making meaningful contributions.

I don't remember all the politics and the . . . And we had good support from Congress at that particular time. I mean, I didn't think of it in that way, but there were people who strongly believed in biomedical science, who understood immunology. But the important thing is immunology didn't need necessarily its own person. What it needed was serious commitment to the biomedical sciences and the belief that it could make a difference. So I don't remember fretting, honestly, about NIH support at that time or about any other major political issues.

Williams:

So I think it's important to have physician scientists as investigators in the system who see patients and whose research is influenced by it, because you may embark in an area of research that may not occur to somebody who doesn't have a clinical life. I don't think anybody would have worked on SRS-A or cysteinyl leukotrienes with the passion that I did if they didn't think it had something to do with asthma. For twenty years I didn't know the nature of the product I was working with.

So what does matter to is to keep a cadre of knowledgeable physician scientists in the system, and that's getting harder and harder because as the NIH reduces its funding per se and if you are going to maintain a clinical life and be competent in both basic science and in clinical medicine and be reasonable, meet your responsibilities as a family person, it becomes very difficult. So I worry about whether or not we can sustain that group and whether I can keep these young people committed to this life. So far we have been able to do that, but they're immensely talented and they keep their eye on the human disease at the fundamental level, which I think is very helpful to asking the right questions.

Williams: So would you recommend the field of immunology to someone starting out on the path in medicine?

Austen: Very much so.

Williams: Why?

Austen: I should have responded I think immunology is finally getting to the right place, that inflammation which is now elegantly called innate immunity, which recognizes the phenomenal diversity within our genes that is fixed, not adaptive but fixed, germ line. Our germ line diversity vastly exceeds anything any of us thought, and immunology is now beginning to think about this germ line information and how the adaptive immune system is profoundly influenced by the tissue that it's in, by cells that were considered nothing but structural or having some other function. We're beginning to really think about immunology in an integrated way, and so I think we're just entering the most exciting period of immunology where we put innate and adaptive together in a meaningful way.

Williams: You mentioned family. What advice do you have in terms of balance between scientific responsibility and family?

Austen: Obviously, I think it's immensely important to keep in mind one's family, that with the ups and downs of research, especially in the current climate, family is more important than ever because it keeps you focused on what's really important, which is do you have a reasonable relationship with your wife and are you really paying attention to your kids. Do they know you exist? Are you really helping with their development? Are you supporting your spouse in her role? Now with two-career families it's even more important to make sure that your

