



Interview with James Wei

Conducted August 19 and September 15, 2015

Edited transcript

About James Wei:

James Wei is Professor Emeritus at Princeton University. He began his career as a research chemical engineer for Mobil Oil Research in 1955, and advanced to Manager of Long-Range Analysis in 1969. From 1971 to 1977, he was the Allan P. Colburn Professor of Chemical Engineering at the University of Delaware. He joined the Massachusetts Institute of Technology in 1977 where he served as Head of Chemical Engineering until 1988, and was the Warren K. Lewis Professor from 1977–1991. Between 1991 and 2002, he was Dean of Engineering and Applied Science at Princeton, where from 1991–2010 he was also Pomeroy and Betty Perry Smith Professor of Chemical Engineering. His research interests include shape selective separation with zeolites and nanoporous materials, as well as molecular structure-property relations, especially those relation to product engineering. He has published more than 130 research papers on chemical kinetics, catalysis, reaction engineering, and cancer chemotherapy, and is the author of many books, including “Product Engineering” (Oxford University Press, 2007), and “Great Inventions that Changed the World” (Wiley, 2012). Wei earned his Bachelor’s degree in chemical engineering at Georgia Institute of Technology (1952), MS and ScD in chemical engineering from Massachusetts Institute of Technology (1954, 1955), and a degree in advanced management from Harvard Business School (1969).

The following interview was conducted by Gordon Ellis, AICHE Communications. Video extracts from this interview are available in the Minority Affairs Committee’s archives.

GE — We’re very happy today to be visiting Dr. James Wei. He is a professor emeritus of chemical engineering at Princeton University, and he’s a past president of AICHE. And he’s one of the honorees at the AICHE Minority Affairs Committee’s 25th anniversary gathering of the Pioneers of Diversity. Dr. Wei, thank you for welcoming us to your office.

WEI — You’re welcome.

GE — To begin, why don’t you tell us how you developed an interest in chemical engineering as a young person in China.

WEI — Well, in those days, China was a very poor country. And what everyone told us we needed to do was to introduce science and technology. Engineering was the thing to do — different kinds of engineering or medicine. So, every boy who was growing up was pressured to go into engineering. That’s how I got interested in studying engineering.

GE — And you were drawn to the United States. How did you make a connection with Georgia Tech as a place to pursue your studies?

WEI — Well, there was a family friend who was going to school here. I was a student in Shanghai, and he said I can get you an admission to Georgia Tech. I said, great. That's how I started at Georgia Tech,

GE — Had you ever been to the United States before that?

WEI — Never. That was the first trip. In 1949.

GE — So, as a young minority engineer, emigrating from China to the United States, what was the climate like?

WEI — Well, let me give you one anecdote. When I arrived, I took the train from New York City to Atlanta. And when the train arrived at the Atlanta station, I went out to look for a toilet. And I found that there were four doors. One says white male. One says white female. One says colored male. And the fourth one says colored female. So, which one was I supposed to go to? I figured out that I should not be going to the female ones, but I wasn't sure whether I was white or colored. I had no idea what the rules were. So I said, maybe the safest thing to do would be just don't use the toilets and wait until I get to Georgia Tech. Which was a struggle, but I did it. And this is the way it was at the time.

And of course, at that time, Georgia Tech was an all male school. And at the time it was 99% white. And they hadn't quite figured out where I fit in — whether I was white or colored. Maybe they just didn't think about it.

GE — How did you adjust to that?

WEI — The challenge was — as a semi-refugee — to *not* challenge any of the things that went on. Just try to fit in the best we can, and stay out of trouble. And that's what it was all about.

GE — Then, you pursued your studies at MIT in the early 1950s. Was the climate for a minority engineer similar there?

WEI — Well, it was a lot more cosmopolitan place than Atlanta. There were a few more foreign students, but still quite few. And, they were a lot more tolerant of odd people like myself. But still, the country was, at that time, in a very different climate than it is today.

GE — And after you got your doctorate from MIT in 1955, you began your career in industry at Mobil Oil?

WEI — Yes. I was planning to go back to China in 1955, but I was told by the State Department that I was not allowed to leave America, because the Korean War was on, and they figured that, if I know engineering, that I might be helpful to an enemy country. So I had to stay. So, I found a job so I could put food on the table. And the first job I found was with the Mobil Oil Company in Paulsboro, New Jersey. And the distinct thing that I remember is that, in the whole research lab that I was in, there was only one Chinese man, who had been there for 15 years. And I asked him, what is it like working here? He said, well, you will never get anywhere here. You don't have a Chinaman's chance — which I took to mean, don't be too ambitious. So that set my expectation

very low. I figured, I'm here just to put food on the table and don't expect anything to come along my way. That's the way it was.

GE — But you did have ambitions.

WEI — Oh, yes. Somehow, things worked out better than I expected, and I became quite prominent. I wound up doing very well in research. Better than anyone expected. In fact, the company decided to send me to Harvard Business School. So, they wanted to terminate my research career and make me a manager. Which is quite a change in my plan for myself. But later I went to teach.

GE — Tell us about how you made your first connection with AIChE.

WEI — Well, I really got interested in AIChE in 1962, when I was beginning to publish my research in the engineering literature and going to AIChE meetings. And I became involved in programming the meetings, but I also got involved in talking about things that were beyond technical. And that was, there were a lot of injustices that I really ought to get involved in addressing. Which I did. That was really quite a surprise to me because, not so much earlier, I wasn't planning to do any such thing. I was just going to fit in.

GE — What are you referring to when you say that you wanted to be involved with AIChE in more areas than just the technical?

WEI — For instance, the attitude was the black chemical engineer is not to be treated the same as a white chemical engineer. And, speaking for myself, I very much think that everyone should be treated the same, because I was a marginal character myself. So, other marginal characters and I just flocked together. Why not?

GE — So, you found kindred spirits and similar people at AIChE.

WEI — Well, I was beginning to meet people who played a big role in my becoming part of the mainstream. One of the more notable things is that one year Franklin Van Antwerpen, who was executive director of AIChE, said that AIChE was going to plan for a World Congress in Amsterdam, and I'm nominating you to represent us at this congress. And I thought that was very strange, because I'm Chinese and I'm not part of the mainstream at all. And Van Antwerpen thinks that I am. So I said, okay, if you say so, I'll take your word for it. So I went there for the World Congress Meeting and I represented AIChE. This is the beginning of when I began to feel, maybe I do have a role to play in making things happen.

GE — Take us back — When did you first make contact with the people who were working for diversity in AIChE?

WEI — I met Henry Brown and Gerry Lessells at these meetings in the 1960s. And Gerry talked about the need to start — it wasn't called a committee then — it was a taskforce. And I thought that this was very worthwhile. And at the same time, in the background, there is Martin Luther King and the march in Selma, Alabama, and the idea that everybody should be treated the same made a lot of sense to me. And I was very much encouraged by all that was going on.

GE — And Brown and Lessells, in the late 1960s, were the first people to start driving the outreach to underrepresented engineers in AIChE.

WEI — Exactly.

GE — Did you involve yourself with them then, or did you meet them through your role on the Council? I know that you were elected to the Council in the early 1970s, for the first time.

WEI — Right. But the Council was an opening for me to see what a person in a leadership position should do to make the world a better place.

And, later on I was elected president of the AIChE. It was in the year 1988. And I found a copy of Executive Committee meeting notes, dated April 9, 1988. And it says:

“The presiding person on this meeting is President Wei. And he reported that he had a discussion with Henry Brown, AIChE Minority Affairs Coordinator. And he urged Henry to establish a formal Minority Affairs Committee that should include past presidents and Council members, so as to make this effort more effective. And this will be discussed further with Council Liaison Anne Ruebush.”

So, this was intended to move the efforts from a fringe activity to a mainstream activity of AIChE, and therefore worthy of consideration as a high priority.

And I have another record from an Executive Committee meeting, dated April 21, 1988, a memo from Dick Emmert, who was executive director at the time. And it mentions that we had a meeting in St. Louis, Missouri, in 1988, and it was J. Wei presiding over this committee. And this memo says, the president reported about our interaction with the National Organization of Black Chemists and Chemical Engineers (NOBCChE), and that we would like to collaborate with them more. And it went on to say that President Wei noted that Henry Brown, AIChE Minority Affairs Coordinator, is a trustee in NOBCChE, and that he suggested to Henry that he start a formal AIChE Minority Affairs Committee.

And a couple years later, it was formally adopted by Council.

GE — And you were an advocate for that group at the time they were formally approved to have a standing committee within in AIChE. Do you recall any of the early initiatives of the Minority Affairs Groups? What were some of the things they wanted to do?

WEI — Well, one of the things that we did — Henry Brown asked Council for \$30,000, but the Council voted to give \$1,000 plus the dues-check-off for members' voluntary donations. And those are the big events that made the activities of the MAC resourceful. Without resources, nothing could be done. And this is the beginning of it.

And, of course, to collaborate with NOBCChE — to recruit, and to urge minority engineers to go on to great careers.

GE — So, MAC has continued ever since, presenting hundreds of scholarship, establishing the Minority Faculty Forum, and lots of other activities. What do you think MAC's biggest contribution to AIChE or the chemical engineering community has been in the last quarter century?

WEI — Well, it is a great organization with a lot of wonderful leaders. And the biggest contribution is to make it so that African Americans are treated as they should be — exactly the

same as everybody else. They are just as good, and just as creative, and just as innovative. This is MAC's biggest contribution.

And I could also add a point, and that is — the MAC has mostly been working on causes for African Americans. And in the future, they should expand their scope to represent the name of the committee — which is to say, they should work for *any* minority.

And MAC should consist not only of minority people, but also of people from the establishment. For example, include in MAC past AIChE presidents and past Council members, who are undoubtedly in the mainstream. That's how MAC was originally able to move itself from a fringe organization to a mainstream organization.

GE — As an observer of AIChE and the chemical engineering community, what is your vision for our Minority Affairs Committee and AIChE in the future?

WEI — Well, I would like to see this — MAC started out mainly concentrating on black chemical engineers. And they have done a very good job at getting started. It's not finished, but it's started. And now it's time to broaden to other kinds of minorities. For instance, Hispanics, American Indians, and other people who are not fully respected in the profession. I believe that MAC should look at any other fringe people, to make sure they are all getting respect and getting represented.

And when this is done to such an extent, one of these days, we can have a big party to celebrate, and shut the MAC down, because we won't need it anymore. That would be success.

GE – So, that's your vision for the Minority Affairs Committee in 25 years — that one day it can shut itself down.

WEI – Maybe sooner than 25 years. The sooner the better. When we shut it down, that's when we have succeeded.

GE — Well, on the occasion of the anniversary, would you like to make any closing comments about MAC or about the Pioneers of Diversity as a group?

WEI — I am very pleased that I was able to play some small role in this progress, which is embedded in the history of America and of our profession. And I'm very pleased and looking forward to the celebration in Salt Lake City.

And I salute all these pioneers. They have done a great job. But the work is not finished. There is more to be done.

GE — Dr. Wei, thank you so much. Congratulations on the honor that you'll receive at the Salt Lake City Annual Meeting at the Minority Affairs Committee's 25th anniversary celebration. I wish the best to you.

WEI — See you again soon.

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