

An Interview with
BENJAMIN W. WAH, Ph.D.

Conducted by David Walden

on

December 3, 2015

by Skype

with Professor Wah in Hong Kong

and the

interviewer in E. Sandwich, Massachusetts

IEEE Computer Society History Committee
Computer Society Past Presidents Oral History Project
Copyright 2016 IEEE

WAH: Good evening to you.

WALDEN: Good evening to you.

WAH: This is morning here, actually.

WALDEN: I'm sorry; good morning to you. Can you see me okay?

WAH: Yes, I see you okay.

WALDEN: Good. Thank you for taking the time to do this.

WAH: You are most welcome. Thank you for doing it.

WALDEN: Let me tell you what I have set up here. I'm recording you on a call recorder within Skype; I'm also recording you on a microphone connected to my computer speakers and on a lapel mike that I have for backup. These recordings will be sent off to a professional transcriber, and she will transcribe it. I'll go through it first because I may be able to fix spelling and things before we send it to you for review.

WAH: That will be fine.

WALDEN: We prefer that the interview be kind of spontaneous; thus, when you review it, please don't spend a lot of time trying to make it academic English.

WAH: Okay, that will be fine.

WALDEN: At some point, Anne Marie Kelly of the Computer Society will send, or has already sent a release form to give the Society permission to, once you approve it, to post this on the website and so on.

WAH: But would the interview be polished when it is published?

WALDEN: It'll be an oral history interview, and they typically are not, as I said, polished but they are carefully edited. They're meant to be in conversational English, as opposed to presentation English, and that's the way the rest of them have been. Okay?

WAH: Okay.

WALDEN: So let's begin if you're ready.

WAH: Sure.

WALDEN: As I said, it's an oral history interview so we'll start at the beginning and get to the end, and it shouldn't take us more than an hour or hour and a half or so. So the first question is please tell me a bit about where you're from, your youth, your hobbies, anything you think is interesting about your parents, your siblings, and so forth; in other words, about your youth and origins.

WAH: I was born in Hong Kong in 1952. I spent my primary, junior and high schools in Hong Kong. I went to the states for my university education. My father worked as a manager in a company. When I was young my hobby was exercising, cycling, and sometimes playing basketball, but not too often. I was in a pretty good high school, so it was quite competitive. When I turned 18 I went to the States for my university education.

I first joined San Diego State University for two years, and then I transferred to Columbia to get my bachelor's and my master's degrees in electrical engineering and computer science. Then I went to UC Berkeley for my Ph.D. education, and I got my Ph.D. in 1979. That's pretty much my education.

WALDEN: Let's go back to your youth a little bit more, in Hong Kong. Presumably some dialect of Chinese is your original language?

WAH: It is. Cantonese is the spoken language. I was in what is called English school, so the primary language of instruction was English although we studied Chinese and Chinese history but that was perhaps only one-third of the subjects.

WALDEN: So you had to learn to be literate — read, write — in both English and Chinese.

WAH: That's correct.

WALDEN: Sounds like a lot of work.

WAH: Yes it is.

WALDEN: It sounds like this kind of a high school where you speak English primarily is not a typical high school for a youth in Hong Kong.

WAH: No, it is pretty common. In Hong Kong in the 60's, those Chinese-only schools, meaning that they teach only Chinese, were at that time around 10 or 15 percent of all the high schools. The majority would be a combination of both English and Chinese.

WALDEN: And that's perhaps because of the British history in Hong Kong?

WAH: Yes it is.

WALDEN: Interesting. You mentioned that you were able to, from this high school, go on to college in the U.S. Again, was that a typical thing that a person could do or is it that your high school somehow was "pretty good" (I guess those are the words you'd used.)

WAH: Actually, that high school was pretty good because, to get into that high school, a student would have to be in around the top three percent of all the primary school graduates. When I got into that high school, around 30,000 students were taking the entrance exam from all the secondary schools in Hong Kong and only the top 1,000 were able to get into a school of a similar nature. It was one of the top three high schools in Hong Kong.

WALDEN: I don't know if you mentioned them as hobbies or sports, but were bicycling and basketball school sports, or extracurricular sports, or both?

WAH: Bicycling was really extracurricular. It's done at home. Basketball was sometimes done in schools. Basketball, soccer, those were games that were available in schools.

WALDEN: And you were on teams?

WAH: We were just playing on our own. We were not on teams; actually there were no teams formed in those days.

WALDEN: I see. This isn't like a physical education class?

WAH: No, it was outside of a physical education class -- sometimes over lunch, and after class, and so on.

WALDEN: Were you involved in other nonacademic activities during your elementary and high school years?

WAH: Not too much other than taking some extra classes, for example taking photography, developing films. Those were extra activities that I took. It was really activities provided in schools after class. I also participated in the school choir, and we did compete on a Hong Kong wide basis.

WALDEN: You said that you went to San Diego for your earliest college years. How long were you there?

WAH: Two years.

WALDEN: For two years, and what school was that in San Diego?

WAH: San Diego State University. The reason for going there was when I finished my high school, I was interested in aerospace engineering and they offered a program in that subject. But after one year I changed my interest into electrical engineering, so that's why I decided to transfer to Columbia.

WALDEN: And what brought about your change of interest?

WAH: Mainly because that jobs were scarce in aerospace engineering in the 1970s. Also I got advice from my friends that computer science and electrical engineering would be the areas to go in the future, so that's the reason why I made the change.

WALDEN: Back in high school, were you already interested in science and engineering?

WAH: My focus was in science and engineering in high school.

WALDEN: And had that been your interest even earlier? Did you do electric amateur radios at home, or any of that?

WAH: In those days that was not easy because we didn't have access to the Internet; it wasn't easy to get parts. But math has always been my strongest subject, even starting from my primary school. I got interested in math, science, and engineering probably at an early age but my exposure to engineering was very scarce in Hong Kong.

WALDEN: When you went to Columbia, you said you studied computers and electrical engineering. Were you focused on any particular aspect of computers or electrical engineering?

WAH: It was mainly on computer architecture, systems design, and communications. In those days, computer science was really not a separate subject. They were often integrated with electrical engineering, so a lot of the courses that I studied at Columbia were on electronic circuits, quantum theory, circuit design, and so on. There were a few courses on computers and computer-related areas like systems programming, compilers, architectures, and communications. But those were not the majority of the courses offered in the department in those days.

WALDEN: According to your CV, which I saw on your university web site, you got your bachelor's degree in 1974 from Columbia?

WAH: Yes, that's correct.

WALDEN: And altogether with San Diego State, was that four years of college?

WAH: That's right, yes.

WALDEN: And were you going back and forth to Hong Kong at vacations and so on during that period, or pretty much staying in the U.S.?

WAH: I didn't go back to Hong Kong until the summer in 1975 before I transferred to U.C. Berkeley.

WALDEN: How was that? Had you been to the U.S. before you went to college in San Diego or New York?

WAH: No, I'd never left Hong Kong before I turned 18. [Laughs.]

WALDEN: And so how was the adjustment, just to living in a different culture?

WAH: In the beginning it was very difficult. There were a lot of challenges, in terms of taking care of myself -- not to mention getting groceries, cooking, washing -- everything was a challenge. And also doing schools, paying tuition, buying books. Those were all things that I did not have to take care of when I was young. But suddenly, when I went to the States, it was a totally new experience.

WALDEN: Did you get summer jobs then during those four years?

WAH: Yes, I had summer jobs.

WALDEN: And your student visa — I presume you had a student visa — your student visa allowed summer jobs.

WAH: In those days, they allowed students to work on campus as well as in the summer.

WALDEN: Very nice.

WAH: Yes.

WALDEN: Again according to your CV, you received your master's degree in 1975 from Columbia. I presume there was a master's thesis of some sort; what was the topic of that?

WAH: It was only a master's project, and we were not required to do a thesis because there was an option to do either a thesis or a project. The project was to implement a communication protocol between a DEC PDP-7 computer and an IBM 360/91 computer in the computer center. I studied a protocol called Bi-Sync, and implemented it on the PDP-7 computer to connect it to the IBM 360/91. That project was a challenge because the PDP-7 computer was a computer with only eight kilobytes of core memory, and the inputs were only on punched paper tapes. So all the programs had to be done in assembly language, entered into a paper tape punch, and read into the computer. The entry -- there was no screen -- was done through a keyboard and that usually was very prone to errors. To make the connection we had to set up a line with a telephone company to go all the

way from Columbia to downtown New York to connect to the phone company's central office before routing it back to the computer center in Columbia.

WALDEN: So both computers were using a phone communication interface?

WAH: That's correct.

WALDEN: And you worked on the software or you had to work on hardware as well for that project?

WAH: I worked mainly on the software. The hardware was provided but we had to set up the arrangement with the telephone company to do the connections.

WALDEN: And this was the basic link protocol, so you didn't have to worry about things like character set conversion, and so on?

WAH: Yes, it was using 8-bit EBCDIC characters. And there were no high level protocols; it's just a basic communication protocol for connecting two computers because it was not even widely available in those days.

WALDEN: Interesting.

At that time, were you already planning to go on for more education, or had you been planning at some point to stop going to school and become a practicing engineer?

WAH: When I finished my bachelor's degree, I was undecided whether to go on for more education or find a job. Many of my friends went out to look for jobs, but I was very interested in doing further studies. Before I graduated with my master's degree, I looked for schools everywhere. UC Berkeley gave me a full scholarship to continue with

a computer science degree, so I took the challenge and decided to do that. It was a spontaneous decision. In those days there was not much information on what one could do in a Ph.D. because Ph.D. theses were not easy to access; they were mostly on microfilms. Finding out what people were doing was not as easy as what you can do today.

WALDEN: Did you have any particular mentors at Columbia or San Diego that helped you along?

WAH: At San Diego I didn't have many mentors because it was the first two years of a university education. But at Columbia I had several mentors. My major advisor was Professor Omar Wing. In my senior year I worked on a project to help him develop some programs on circuit design. I also worked with Professor Ted Bashkow; he was the person working on computer architecture and systems programming at Columbia in those days, and my master's project was with him.

WALDEN: When you went on to Berkeley, you got another master's degree; is that right?

WAH: That's correct. In Berkeley, yes.

WALDEN: And that was in computer science?

WAH: That was in computer science, yes.

WALDEN: Did you have any interface with a particular professor there that helped you get there or was it strictly that your grades were very good so they read your resume and wanted you?

WAH: Yes, I applied really based on my grades. I didn't have any advisors when I joined UC Berkeley, so the challenge in the first year was to find an advisor. I found my Ph.D. advisor, Professor C. V. Ramamoorthy, within two weeks after I joined UC Berkeley. I consulted my friends there, and they said he was a very nice person, easy to get along with. So I went to his office and talked to him, and he gave me a project to study. He didn't mention that he would be taking me at that time because I was on fellowship. I worked on the project and returned to him after one month with my solution. He was very pleased with my solution, and I started working with him. The first year was particularly challenging because I needed to pass a preliminary exam, which was like a qualifying exam. This required taking five subject areas; it was completely oral; and one spent 20 minutes with a professor. Altogether I would be interviewed by 10 professors on five subjects, and they could ask any open question on those subjects. It was a challenge because my background was in computer-related areas, but not exactly in computer science; when I first started at Berkeley, I had to take all the undergraduate courses in computer science, starting with the most basic undergraduate courses, not to mention graduate courses. A passing grade was only 20 percent in those years, and luckily I passed in the first trial. After that trauma in the first year, I started working as a research assistant for Professor Ramamoorthy.

WALDEN: And the project that you first did to make him happy, what was that project?

WAH: It was designing a buffering system for an interleaved memory computer.

WALDEN: Nice.

WAH: That project turned out to be published in two papers in the *IEEE Transactions on Computers*.

WALDEN: And then did you have to do a master's thesis at Berkeley?

WAH: Actually, it was along the way that first year when I was designing that interleaved memory system. Professor Ramamoorthy advised me to turn that project into a master's thesis. At the end of the summer of the first year, I turned it into a master's thesis and got my degree.

WALDEN: By that time had you picked a topic for your Ph.D. research?

WAH: The general area was in computer systems design. It was the focus area of Professor Ramamoorthy at that time. I was interested in memory design – associative memory, interleave memory. And then I extended that to a higher level – to the systems level -- how to use the memory, for example, to support data bases. It became a spectrum of studies from lower level memories all the way to high level support in using memory systems.

WALDEN: Regarding data bases: was Stonebreaker already working on data base management systems when you were there?

WAH: Yes, he was there.

WALDEN: So when you say one of the applications of the memory systems you were thinking about was data bases, was there any connection there?

WAH: I took classes from Eugene Wong and Stonebreaker; in those days Gene Wong was the main person teaching data bases. The ideas I got over there helped me integrate data bases together with memory systems.

WALDEN: So ultimately what was your thesis topic then? Or what was your thesis title, even?

WAH: I can't remember it anymore. [Laughs.] I think it's called "Data Management in Computer Systems." Let me look it up to see whether it is available.

WAH: Yes. Okay, "A Systemic Approach to the Management of Data on Distributed Databases."

WALDEN: So when you say your thesis had distributed data bases, it was a data base spread across multiple things?

WAH: Yes, it was on a distributed system, meaning distributed over a network of computers.

WALDEN: After your Ph.D., if I understand correctly, you joined the faculty at Purdue. How did you get recruited there?

WAH: It was mostly luck. When I finished my Ph.D. I was undecided whether to go to industry or to academia. The majority of my friends were going to industry. They were going to Bell Labs or IBM because those were the major companies doing a lot of research in those days. I interviewed at Bell Labs and IBM and got offers. I also interviewed at several other places, and Purdue was the one that attracted me because of its program. They have a very comprehensive program in electric engineering. I joined the School of Electrical Engineering. Also, my advisor had friends over there, and they were very helpful in getting me settled in at Purdue.

WALDEN: Did you have a particular research area when you were at Purdue?

WAH: Well, it was mostly on computer systems, parallel processing, distributed processing; it was an extension of my work from Berkeley.

WALDEN: And were you getting funding from somebody to do that research?

WAH: I got a Research Initiation grant. In those days the only support from NSF for junior faculty members was a Research Initiation Award or RIA. In the second year, I got the support. Then I worked with other faculty members on several NSF proposals and got funded throughout my years at Purdue.

WALDEN: Why and how did you transition to the University of Illinois?

WAH: It was for a combination of reasons. In those days the department -- the school -- was not well run. There was a turmoil: they hired a chair who was spending a lot of resources on his own research but not on the faculty. Many people were thinking of leaving in 1984-85, and I was one of them. The department chair was then relieved in the middle of the semester by the dean. The dean tried to retain me, but at that point I already got an offer from Illinois, and I decided to take the offer.

WALDEN: And at Illinois, were you in computer science, or electrical engineering, or both?

WAH: I was in electrical and computer engineering.

WALDEN: Electrical and computer engineering.

WAH: That's different from the computer science department.

WALDEN: Now I understand. Were you teaching only electrical engineering? Well I guess you were teaching electrical engineering and computer engineering.

WAH: It was computer engineering. The courses that I taught over there included system architecture, both undergraduate and graduate courses, computer networks, programming, logic circuit design -- all in computer engineering.

WALDEN: Lot of that sounds like computer science to me. Was computer science there more languages, and compilers, and data bases, and so on?

WAH: Yes, in those days.

WALDEN: Okay.

WAH: There is a very large overlap between computer engineering and computer science.

WALDEN: What research areas were you pursuing at Illinois?

WAH: When I started, I mainly focused on distributed processing and parallel processing. I worked on that for almost 10 years -- mainly on networking support, networking protocols, and design of algorithms for parallel processing.

WALDEN: And your work from Berkeley, for instance, on how to access memories -- were you also still working on that?

WAH: No, I stopped working on memory systems because memory systems became a commodity in the 1980s and 1990s. Actually the area came back; there was a lot of studies even in the 2000s on predictions, memory pre-fetching, and so on. In those days, I gradually shifted more to higher level algorithms, parallel processing support, designing algorithms on distributed and parallel processing systems.

WALDEN: The reason I asked is because in parallel processing systems oftentimes there's a question of how do different processors get the different memories, and how do they share memories, and so on.

WAH: Yes, that's correct.

WALDEN: From the biographical information that I've collected about you, I see that your involvement with the Chinese University of Hong Kong starting in about 1998, even though you were still at Illinois. Is that correct?

WAH: That's correct.

WALDEN: How did that overlap happen, and how did it work?

WAH: I took a sabbatical leave; In Illinois I took two sabbatical leaves. One at the University of Tokyo in 1992; and the next one at the Chinese U in 1998. It was by accident – the reason I came to Chinese U was because previously they had invited me to be an external examiner. Both the University of Hong Kong and the Chinese University of Hong Kong invited me to be external examiners for their programs, and I got an opportunity to visit Hong Kong quite often and they invited me to come to Hong Kong for a year during my sabbatical leave.

WALDEN: Do you think of being an external examiner as a variation of academic work or more like professional society work? Not professional society but professional activities.

WAH: It's more like professional activities in terms of helping a university to benchmark its academic program; it is like an external visitor to review a program, trying to understand and to share our experience.

WALDEN: That kind of brings me to the whole area of professional activities. Had you already been involved with professional societies as a student or in your prior university work, or was this sort of the beginning of your professional activities?

WAH: My professional society work started in 1977 when I was a student at UC Berkeley. I was the student leader who put together all the volunteers for Compcn in San Francisco, and I helped arrange all the student volunteers from UC Berkeley to help the sessions in Compcn. That's my first exposure to the Computer Society. I did that because of my advisor. He had a very strong connection to the Computer Society; he was on the Governing Board and he got me involved in the Computer Society.

WALDEN: This was Professor Ramamoorthy still?

WAH: Yes. That started in 1977, and after I graduated there were some on and off activities -- serving on program committees and so on. My major involvement with the Computer Society was in 1984 and 1985, when we worked together with Prof. Gio Wiederhold and Prof. Bruce Berra to set up the International Conference on Data Engineering. It started in 1985. I served as a co-program chair for that conference in 1986, and as the general chair in 1987. Then in 1988, I worked with Professor Ramamoorthy and Professor Berra to propose the *IEEE Transactions on Knowledge and*

Data Engineering that got approved by the Governing Board to launch in 1988. It was a major decision by the Computer Society because at that time there were only two IEEE Transactions offered by the Computer Society, which were the *IEEE Transactions on Software Engineering*, and the *IEEE Transactions on Computers*. The *Transactions on Knowledge and Data Engineering* was the third transactions that the Computer Society offered, starting in 1988. Then in 1988 I got invited to run for the Governing Board. I remember when I was invited to run for the Governing Board I got advice that I should not expect to win in the first run, because I was a newcomer and nobody knew me. But luckily, in the first run I succeeded in getting elected, and I served for two terms from 1989. Also, Professor Ramamoorthy was serving as the Editor-in-Chief, until 1992, of the Transactions that we started in 1988; and I was serving as the Associate Editor-in-Chief for four years. Then I got selected as the Editor-in-Chief for the *Transactions on Knowledge and Data Engineering* between 1993 and 1996. That was how I got into volunteer activities with the Computer Society in the beginning. Then on and off, as an EIC, I had to attend the Computer Society Publications Board meetings. In 1997, I got invited by Barry Johnson, who was the President-Elect at the time, to serve as the Treasurer of the Computer Society. It was also done with the recommendation from Professor Ramamoorthy. I served as Treasurer for one year; then the year following that I was invited to run as a Second Vice President. I again was elected and served as the Second Vice President for Publications. A year later I was invited to run as the First Vice President. Again I served as the Chair of the Publications Board; after that, I was asked to run as President. That was in 1999; and in 2000 I was the President Elect; and in 2001 I was the President.

WALDEN: So during this time, presumably, your universities were supportive of all of this professional society activity?

WAH: Yes, the university was very supportive, although I didn't get any relief in teaching, but I kind of rearranged my teaching activities to fit the duties of the Computer Society.

WALDEN: Not *that* supportive.

[Laughter.]

WAH: It was kind of flexible in terms of arranging the teaching duties so that didn't overlap with my travel. Even during the time when I was President I was still teaching.

WALDEN: How did you feel about this professional service activity? Was it something that was useful for your career, or was it simply gratifying for helping the world, or whatever?

WAH: It is useful in several senses. First, it helped me serve the Society. Using my professional knowledge, I was able to develop directions for the Computer Society that would benefit the community as a whole. It was very gratifying that they valued my service and I was able to render my service to the community. Second, it was something that helped develop me professionally, although I didn't realize it at the time. In those days, I never dreamed to become an administrator. I was interested mostly in academic research, but I thought that taking some time off to serve the community would be something worthwhile to do. In addition, it helped develop my training in terms of understanding management, in terms of developing administrative skills, working with people, working with budgets, and that was a good training that I got when I served as the President. That is something that is useful even today when I'm serving as the Provost.

WALDEN: Let me step back and ask a follow-up question. You said that you got invited originally to join the Governing Board. Was there a particular person who spotted your talent and invited you?

WAH: It was, I think, Roy Russo.

WALDEN: Ah yes, another ex-president.

WAH: Yes, one of the ex-presidents. He was impressed when I went to the Governing Board to present the proposal on the IEEE Transactions, so I got invited to run as a Governing Board member.

WALDEN: I have a question about your considerations as you decided to run for president. Was that you by that time going through the progression? Or what motivated you to keep going through the progression from treasurer, to second vice president, to first vice president, to president, and so on?

WAH: In a way it was not my ambition. In those days I didn't even have an ambition to run for President or even to serve on the executive committee. I was happy serving as Editor-in-Chief, because that's mostly technically oriented rather than administration. But when I was invited to serve as the Treasurer I took the challenge. Once you got into the executive committee there were lots of new challenges that arose, and it was like somebody pushing you behind your back, and then it was difficult to get off. It was not really my intention nor even my ambition to serve as President; but I was invited and I was provided with opportunities, and I took the challenge.

WALDEN: What was the sort of landscape of the Computer Society when you were becoming first vice president?

WAH: The challenges were working with the IEEE. The Computer Society is a society of the IEEE, and as a result, it has to be run under the jurisdiction and all the policies of IEEE. As such, sometimes, we were not as creative as we could be, in terms of starting new journals or running the digital library. The Computer Society was the first Society to start the digital library, and IEEE followed that afterwards. We started our own digital library, and there were a lot of restrictions. In those days, the executive director, Dr. Michael Elliott, was very creative; and he launched many innovative initiatives. They were first of a kind but ultimately they got picked up by IEEE. When I was President-Elect, there was a serious conflict between the IEEE and the Computer Society in terms of the contract of Michael Elliott; and eventually he was relieved in late 2000, before I even started as President. In my first nine months of my presidency, I didn't even have an executive director. I was working with Anne Marie Kelly, who was helping me out in the first nine months before we recruited our executive director.

WALDEN: So you were deeply involved in the recruiting and hiring of Angela?

WAH: No, Angela was not the executive director.

WALDEN: Oh, there was another executive director before Angela.

WAH: Yes. I don't remember his name now. But we recruited him, and then he served for something like four or five years, and then we recruited Angela.

WALDEN: Okay. What was your vision for the society as you became president, beyond trying to get along with the IEEE?

WAH: Oh that was one of the challenges that took most of the time. But it was an awesome opportunity in the year 2000. It was at the end of the three-year cycle that we had to develop a new strategic plan; so in the year 2000 as the President Elect, I was responsible to develop the strategic plan. I worked with John Keaton closely to think of new challenges and new ideas. The new initiative in 2000 was to develop the Computer Society into a total information provider. There was an article I wrote in the Computer magazine on that subject — it means not only to have a digital library, but to provide information in a comprehensive fashion -- for on-line learning, teaching on-line books, and providing information that people need to get access to in developing their career. This was a new idea in the year 2000 to make the Computer Society into a total information provider that covers all the information that professionals need to access in their career.

WALDEN: For this vision, you were first vice president at this time?

WAH: No, I was the President-Elect, responsible to develop the three-year strategic plan.

WALDEN: And Ms. Pollock was the president at the time?

WAH: Guylaine Pollock was the President in 2000. Yes.

WALDEN: Back to the digital library; you said the Computer Society started the digital library and then the IEEE picked up on it. Were you involved in that initiation of the digital library for the Computer Society?

WAH: No, I was not involved. It started in the middle of the 1990s and Michael Elliott was the one who was behind it.

WALDEN: I've read your three articles — I think there are three articles — in 2001 issues of *Computer* — one at the beginning of the year, and one at the end of the year, and then one in November.

WAH: Right.

WALDEN: One of the things you mention is a distance-learning initiative. What was that about?

WAH: Distance learning was not something new, but however, using distance learning in a large scale was not something that the Society would do because it was an unknown. In the late 1990s there were a lot of tutorials in tutorial weeks that were offered. Distance learning was something we could offer, for example, as recorded lectures; but the transfer of those lectures on networks was not popular. My ambition at that time was to see whether this could be done through computer networks, whether information could be transferred electronically rather than using CDs, rather than using face-to-face tutorials. That was the direction I wanted to push, so that information or lecture material could be transmitted over networks to all the subscribers.

WALDEN: I've done several of these interviews now of prior presidents of the Society, and one of the things that strikes me is that you're not there very long so you have to depend on the staff a whole lot.

WAH: Right.

WALDEN: Can you talk to me about how it is to work when, of course, you help with planning so you know what's going on; but it's up to the staff to carry out most things, I

suppose. And then you're the past president, and I suppose you continue to do a good bit of travel, carrying the Society flag during that past-president period.

WAH: Right. It was a common complaint, in terms of the duration of the service – whether one year would be enough. In my case, it was unique, one of a kind, because I don't think any other president had experienced for almost the entire year without an executive director. I had to work very closely with the Society staff to direct all the initiatives and the activities. I had the flexibility to not so much depend on the staff, but to make decisions to start those activities in the year 2000 and 2001. If one had a good executive director, one could lay back and just travel around and carry the flag. But during my year, it was a very difficult year; I had to work with IEEE as well as with the staff, and to hold up the morale. It was kind of a unique year. I would say that during that year it was probably more like a two-year service rather than a one-year service.

[Laughs.]

WALDEN: One year was enough, in that case. Were you traveling from Hong Kong to do all of this interaction, or in daily conversation with staff, or were you still at Illinois?

WAH: No, I was still in Illinois at that time. Illinois and D.C. are only about two hours apart — so it's not really a huge overhead. I could leave in the evening, and the next morning, hold meetings, and then come back home after the meetings. It was not a huge overhead of working with the Society from Illinois.

WALDEN: For this period, at least when you were the president, headquarters really was the Washington office.

WAH: Right.

WALDEN: Now it's called the headquarters, but I think most of the activity happens out of California.

WAH: That's right, because in those days, the main office was in Washington, D.C. and the West coast office was the publications office.

WALDEN: I see. Was Michael Elliott in the D.C. office?

WAH: Yes he was.

WALDEN: I never understood that.

WAH: He actually lived in D.C.

WALDEN: I see. After you were president, did you then go back to academic life, or did you stay quite involved with the Computer Society?

WAH: I stayed with the Computer Society for like four or five more years, on and off.

WALDEN: Committees and panels and so on?

WAH: Committees and so on. In the year 2001, I was debating whether to run for the IEEE Board of Directors, and they invited me to run as the TAB [Technical Activities Board] Vice President. But I lost. And then they invited me to run for the IEEE Board of Directors, and I turned it down for the reason that the relationship between the Computer Society and the IEEE was not always on nice terms, and there was a lot of politics involved. I went back to academia to continue my research. That was a change. I had

done my service in the Computer Society, and I wanted to leave room for other people to continue.

WALDEN: A couple of questions regarding the parts of the Computer Society with which I've been involved: as president did you have any significant interaction with the History Committee or the *Annals* board?

WAH: Not exactly. I know the History Committee; I don't know who was the chair; I believe it was Ron Waxman. But I didn't have too much interaction because I was not part of the history at that time. [Laughs.]

WALDEN: So you went back to academia in Illinois, and then eventually somehow you ended up in academia in Hong Kong. How did that come about?

WAH: It was by chance. I was happy doing my research in Illinois. In 2007, Illinois started negotiating on a new research center with ASTAR in Singapore. That negotiation took almost two years. I was part of that and eventually the center was set up in 2009 with \$50 million given by ASTAR to Illinois to start the research center. The goal of the center is to foster collaborations between Illinois and Singapore, so the money would be used to help provide travel and the support for Illinois faculty members to work in Singapore. I was named as the inaugural director of that center, and I moved in Singapore in March of 2009. At that time, I was going back and forth between Illinois and Singapore. Then I received an invitation to apply for the Provost job at Chinese U. I was never expecting that because I never served as department chair or dean, but they invited me to apply. I interviewed. I remember the interview was in November of 2008. Somehow they were very impressed by me and they offered me the job right on the spot, but I didn't take the job until April 2009, after I moved to Singapore. It took me another

nine months to help the center get started, to find the next director before I came to Hong Kong in 2010.

WALDEN: At some point you broke your connection with Illinois, or you've remained somehow affiliated with Illinois?

WAH: I was on leave from Illinois for two years, until 2012 when I retired from Illinois.

WALDEN: I see. That brings us to today, I think.

WAH: Yes.

WALDEN: So at Hong Kong, you're doing administration more than teaching or research.

WAH: My major activity is in administration. I don't do any teaching now because my schedule doesn't allow it but I still keep my research group of five students and a post-doc, and I work with them every week and over the weekends on my research.

WALDEN: I have a couple more questions; they get very general now. Please tell me a bit more, if you're willing, about the rest of your life; your family, what's happened outside of your career.

WAH: My family consists of my wife and two daughters. My daughters are twins and they are 29 at this point. One is working in the States at Google, and the other is finishing her Ph.D. at Michigan. I'm blessed because they were very supportive of me throughout the years when I had all the travel, volunteer activities, and research, and so on. I was not

home all the time and I got lots of support from them in terms of helping me succeed in my career, so I'm very grateful for their support.

WALDEN: Is there something I should have asked and didn't; and if so, please tell me what that is so I may ask it.

WAH: I don't think so; I don't think there is anything that you missed.

WALDEN: Then I want to thank you for taking the time to do this interview. I very much enjoyed it.

WAH: Okay, very good. I hope the information is useful.

WALDEN: I don't know if you took any time to look at the website but we're building up a nice collection of these oral histories of the past presidents. Thank you again so very much, Ben.

WAH: Okay, thank you, Dave.

WALDEN: Bye.