USTC Alumni Foundation conducts alumni interviews for all of us to exchange ideas on how to build USTC into a world-class institution, and to help ourselves excel at our chosen professions. As such, USTCAF doesn't necessarily endorse all statements made during the interviews.

**Interview with Dr. Zhan Hongbin**

--by LI Xiaolin (December 1999)

Xiaolin Li: Thank you for talking with us. Today we would like to talk with you about your career and your thoughts on how to develop local alumni communities such as the one in College Station. Let's talk about your career first. A lot of physics majors switch to other fields. Please tell us why from your perspective and how you picked up hydrology and hydrogeology.

Hongbin Zhan: The main reason why a lot of Physics students switch to other fields is simply that the job market can't accommodate so many physics graduates. The good news is that many physics students have very strong background in mathematics and physics, something they can leverage in many fields. But I am not saying that there is no need for physicists. Some outstanding people should still be able to do well in that field.

Which field to switch is a decision that has to be made by each individual. Everybody knows that electronic engineering and computer science are hot. That I became a hydrogeologist has everything to do with my personality. I am not someone who follows the trend. Besides, I looked at the research that a hydrogeology professor in UNR was doing at that time. I found the research very interesting and with an extremely high demand of math and physics skills. I asked the professor to be my Ph.D. advisor and the move has worked out great for me.

Hongbin Zhan graduated from the Physics Department of USTC in 1989. He received his MS in physics in 1993 and Ph.D. in hydrology & hydrogeology in 1996 from University of Nevada, Reno (UNR). In September 1996 Dr. Zhan became an assistant professor in the Geology and Geophysics Department of Texas A&M University where he works today. Dr. Zhan has published numerous papers in top journals in his field and held several honorary positions. His research areas include contaminant transport in strongly heterogeneous geological media, hydraulics of horizontal wells, hydrodynamics of density-dependent water flow in inclined aquifers, fracture hydrogeology, stochastic hydrology and fluid flow in complex petroleum reservoir. Hongbin has been actively involved in the USTC alumni community in College Station, TX.
L: On your web page, you listed six research areas. Seems like each one of them is very complex by itself. How do you organize and develop your research?

Z: After you do research for some time, you will know which areas have good potential. Although I work on all the six areas, currently I concentrate my energy on two areas. The first area is to develop technology for horizontal wells. There are many open topics such as hydraulics and pumping heads to be hammered out. I am finalizing several papers now. A Ph.D. student of mine is also working in this area.

The second area is to research on highly heterogeneous geological media. The physical coefficients of this kind of media vary substantially. Theoretical and experimental methods are not well developed. We expect this area to attract much attention well into next century.

L: Right now you have a National Science Foundation (NSF) grant. We know the funding from NSF is very limited. What's your experience of writing an effective application?

Z: It's extremely difficult to get funding from NSF. My advice to people who wants to apply funding from there is to be persistent (Jian1 Ren4). You have to have a good science topic, but persistency makes all the difference. Never give up after failing for 1 or 2 times, otherwise you can't achieve anything. I guess that's why some people say science is for those die-hard minds.

L: This year (1999), you have published 7 papers, along with 3 more in review and 5 abstracts. Do they all belong to one puzzle? What about the years ahead?

Z: You know it takes a lot of time to prepare a paper, not to mention the lengthy review process. So some of the papers I published this year can be traced back to my Ph.D. years. Not all of them can be neatly categorized. But I am sure the pattern will change as continuous effort is put in my key research interests.

I may not be as lucky in the following years as in this year. As a relatively new faculty member, right now I am mostly working by myself. I have a very good Ph.D. student, but I need to have more graduate students.

L: How do you like the teaching part of your job?

Z: I like that part very much. One very important reason that I like to be a professor is that I do have passion about teaching. I was especially glad when I won the excellent teaching award in Texas A&M this year.

In the future I want to recruit graduate students more aggressively. This is something I didn't do enough in the past. I will go back to China soon to visit some universities and research institutes. I will talk to students there and hope a few excellent ones will apply for Texas A&M later.
L: If somebody just came to the US as a physics graduate student this fall, what advice would you give to him about his career?

Z: This question has to be dealt with on the individual basis. If you ask my opinion, I would say "get an MS in physics first". Physics students can get into all kind of fields, such as EE, CS, other engineering fields, finance, and so on. I know another Chinese faculty in the biomedical engineering department of A&M. He has a student who was a physics major. That student published 4 papers in 2 years. Those who came to the US recently can use their MS time to learn about this new environment and find the field in which they can flourish with their fundamental skills.

L: From our last interview with Professor Guohua Deng, we know that USTC invites short-term visitors from all over the world to Hefei every year. Do you want to participate? If so, what do you think needs to happen to make the visits productive?

Z: Of course I would like to participate. I have several comments about how to make these visits successful. First of all, we should concentrate on the substance, not the formality. These visitors should help USTC become better academically. Second, the visitors should spend a lot of time with students, both the undergraduate and graduate students. That's the best way for students to be exposed to cutting-edge research topics and prepare for their careers. Finally, those who are experts in university administration can shade some light on that topic. But I believe we should really concentrate on science and technology.

Personally I would like to talk with professors in related departments such as Departments 7 and 12. I would like to do some research on water resources in China. The NSFs of the US and China have some exchange programs that we can work on. It is very difficult to find good research partners. I hope to find a few good partners in USTC.

One can't just talk for USTC to become a world class university. Everybody, professors, students, and alumni, has to work together to make it happen. Whatever makes USTC successful and special are what we should do.

L: USTC wants to recruit top-notch young researchers from all over the world. Do you want to go back to China to work in the future? What will it take for you take an offer from USTC?

Z: I don't have an answer for your first question yet. You know, the work environment here in the US is very good, very attractive. I need to think carefully to make a decision on whether or not to go back to China to work within the very recent years.

If I do decide to go back, the most important factor I would consider is the opportunity to be in touch with the international community constantly. I know some colleagues who went back to Israel and they are happy about their decision. They are able to come to the US to attend conferences or just visit whenever necessary. I would like to do as much as I can before I am 40 years old. An excellent work atmosphere is critical to achieve that
L: You have been instrumental in organizing the alumni group in College Station. What are the most helpful activities can local alumni associations organize in general? How to keep these groups active?

Z: I think the most important thing the local alumni associations can do is to help new comers to settle down. They should not feel friendless in this new environment. These are the things that will help them to fully develop their potentials.

Many local alumni groups are often short-lived and there are many reasons for that. The local groups need to organize activities that reflect common interests. If common interests are not found for a while, the support and participation will trail down. Formality is not even remotely as important as people's minds (Ren3 Xin1). If everybody enjoys the activities, the group will do well.

L: We know you are a USTCAF member. What are your favorite programs in USTCAF? What new programs would you suggest?

Z: My favorite programs are by far the outstanding new students award and the goodwill fund. I like both programs because they help USTC continue to get top students. The goodwill fund is especially good. Those students in need we should really help. They should have their careers and money should not stand in their way.

Talking about new ideas, I would recommend 3 programs that the former students of A&M are doing. They sponsor distinguished research, teaching and service awards every year. These programs recognize outstanding faculty and staff who are making significant contributions to the university. If these programs were started in USTC, along with the above 2 programs, they would help create a better studying and working environment in USTC.

L: Thank you very much.