

A PROFESSIONAL EXCHANGE VISIT TO CHINA

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ARRANGING A PROFESSIONAL EXCHANGE

In October, 1996 the National Center for Earthquake Engineering (NCEER) at the State University of New York, Buffalo published a request for proposals for researcher exchange visits between the United States and the Peoples Republic of China to be sponsored by the National Science Foundation. In Pacific Grove we decided to take advantage of this program to extend our own knowledge and establish and renew contacts with the Chinese disaster research community. These grants are usually awarded to researchers at universities such as Stanford or the California Institute of Technology and it might be unusual for someone working at a fire department to receive such a researcher exchange travel grant. Through a fortuitous set of circumstances, however, it appeared that Pacific Grove might be eligible.

The Federal Emergency Management Agency had given national recognition to Pacific Grove in May 1997 in an article, "Pacific Grove - A Model City for Disaster Preparedness", which appeared in the *Compendium of Exemplary Practices in Emergency Management*. In addition, the January 1997 issue of the *Journal of the American Society of Information Science* contained a paper on an analysis of citations and translations in Chinese library and information science literature. Citation data had been collected from seven major Chinese journals in library and information science published between 1983 and 1990. My name was listed in two appendices concerning groups of the most heavily cited and translated authors. What a surprise to see a paper that I had written in 1977 in my starving student days when I was working on my PhD listed as heavily cited! I immediately wrote to the NCEER to point out that the Chinese had found my earlier research useful and that I hoped that some seismologists in Beijing would be given a travel grant to come to Pacific Grove to find out about the useful things in earthquake preparedness that I was now doing!

A proposal was submitted to the NCEER for exchange visits by Chinese earthquake researchers to visit Pacific Grove to learn how a small California city prepares for earthquakes and for the Pacific Grove Fire Department's disaster coordinator to visit China for two weeks to learn how the Chinese prepare for earthquakes.

The NCEER approved my proposal with the stipulation that the travel must be completed before February 28, 1998. I therefore suggested visiting the Chinese Academy of Sciences during the period of October 20-31, 1997. The Pacific Grove City Manager invited the Chinese to visit Pacific Grove during the first two weeks of April 1998 so that they could observe the City of Pacific Grove's participation in the State of California's annual earthquake exercise, usually scheduled for the first Tuesday in April. The

Chinese Academy of Sciences sent me an invitation by e-mail to show to the Chinese Consulate in San Francisco when I applied for my visa. The American Embassy in Beijing was notified by e-mail of my visit to the Chinese Academy of Sciences.

NOT ALL THINGS WORK OUT

An inquiry had also been made to the Chinese Academy of Sciences for a possible visit to the Shanghai Anti-Disaster and Relief Office on October 9-10 before visiting the Center for Disaster Reduction of the Chinese Academy of Sciences in Beijing. I had met some of the five members of the Shanghai delegation to the 2nd International Conference of Local Authorities Confronting Disasters and Emergencies held in Amsterdam in April 1996 when I presented a paper there. Even in organized exchange visits, however, not all things turn out as expected. When I arrived in Shanghai and contacted the Anti-Disaster and Relief Office, the visit could not take place because of the absence of an interpreter.

CENTER FOR DISASTER REDUCTION

The Center for Disaster Reduction of the Chinese Academy of Sciences was established in 1995. The Center's headquarters is located at the Institute of Atmospheric Physics in Beijing. It is a union of more than forty organizations which are engaged in disaster reduction activities. There were 47 research projects underway in 1996.

I gave a seminar on "Emergency Preparedness for Earthquakes in California" on October 28th at the Center for Disaster Reduction. The Director, Professor Wang Ang-Sheng, is also the Director of the Experts Group of the Chinese National Committee for the International Decade for Natural Disaster Reduction. He and Dr Qian Ye (who received his Doctorate from Oregon State University) and Dr Dong Jiarui assisted in arranging other visits for me. A number of representatives of the Institute of Atmospheric Physics, Institute of Geology, and the Institute of Crustal Dynamics also participated in the seminar, and my wife, Ellen, also discussed how neighborhood emergency response teams are organized. Their research community has outreach problems with their administrative community and the Chinese research community seemed glad to hear of the grass-roots public education efforts which emphasize the individual homeowner's taking more responsibility for preparedness.

A small collection of American preparedness literature was presented to the Center for Disaster Reduction. This included copies of publications from various US sources, such as the NCEER, ERRI, the state of California, FEMA, the American Red Cross, IAEM, and public disaster information from several Monterey County organizations. We take much of this information for granted, but there is little access to it overseas, just as foreign literature is not readily available here. This type of literature is very much appreciated when making visits to foreign organizations. Numerous Chinese research publications were given to me. Chinese research into natural disaster precursors and prediction seem promising and would seem to be worth investigating.

Professor Wang Ang-Sheng, Director of the Center, arranged for me to visit the Institute

of Atmospheric Physics and the Institute of Geology. I also visited Peking University and Beijing Polytechnic University and met scientists from the Institute of Geophysics and Institute of Crustal Dynamics, State Seismological Bureau, and visited Tangshan, the city which suffered China's worst earthquake disaster in this century.

VISIT TO TANGSHAN

Dr Dong Jiarui took me to visit the city of Tangshan, about 90 miles from Beijing. A magnitude 7.8 earthquake occurred at 3:42 am on July 28, 1976 which resulted in 240,000 deaths in the city. The Peoples Liberation Army responded with 100,000 troops to rescue survivors, treat the injured, build temporary shelters, and feed the earthquake victims. The rebuilding of the city was a classic case of forced urban renewal. The city is now a showcase since most of the buildings are now only ten to 15 years old and the streets are wide with attractive landscaping using many trees and flowers. There is a comprehensive earthquake museum which documents the disaster and the rebuilding of the city.

CHINESE RESEARCH ON PRECURSORS AND PREDICTION

It is curious that research on alternative non-seismological approaches has apparently not been taken seriously in the United States. Large disturbances of the earth's magnetic field have been observed shortly before devastating earthquakes such as the "Good Friday" earthquake in Alaska. The observations were reported in a distinguished scientific journal, but since then they have been almost universally ignored in discussions of the possibility of predicting earthquakes.

I was impressed with the Chinese approach of examining magnetic observatory records to see if there were any precursor indications associated with earthquakes. The United Nations is interested in exploring this approach and had scheduled a workshop for representatives from magnetic observatories in about 15 different countries to come to Beijing for a week in February 1998. The Chinese researchers demonstrated three different methods of analysis of geomagnetic data so that each magnetician could go home and examine his data for precursors of local earthquakes.²

It would appear that Chinese research on earthquake precursors and prediction should be looked at seriously in the United States since the combination of several alternative methods seems to have indicated the potential of empirical prediction for large earthquakes even where physical understanding is lacking. It may be prudent and worthwhile for researchers in the United States to investigate some of these alternative non-seismological approaches.

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NOTES

1. Russell C Coile, PhD, CEM has been the disaster coordinator/emergency program manager at the Pacific Grove Fire Department for the past eight years. He received SB, SM, and EE degrees in electrical engineering from M.I.T., Cambridge, Mass. and a Ph.D. in information science from The City University, London, England. He is a Fellow of the Institute of Civil Defence and Disaster Studies, London.

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2. The U N "Global Program" can be found on the Internet at <<http://www.shore.net/~globalw/ungp/>>.