

COLLABORATING WITH CHINESE SCIENTISTS

Whitlow W. L. Au

*Hawaii Institute of Marine Biology
PO Box 1106, Kallua, Hawaii 96734*

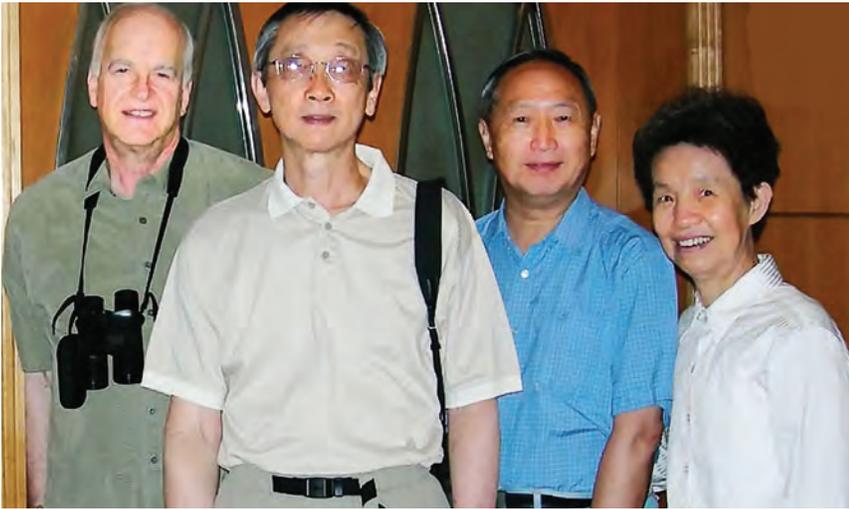


Fig. 1. Peter Narins, Albert Feng, Shen Jun-Xian and wife.

Acoustics 2012 Hong Kong will include the 163rd meeting of the Acoustical Society of America (ASA) and it will be a historical one. This will be the first joint meeting of the ASA with the Acoustical Society of China, along with the Hong Kong Institute of Acoustics and WESPAC. It will also be the first meeting of the ASA on Asian soil which will provide a unique opportunity for members of the ASA to engage Chinese scientists and perhaps develop mutually beneficial relationships and collaborations. Many things can happen at such an international meeting and this article will provide examples of such occurrences.

In 1992 Drs. Peter Narins, University of California, Los Angeles (UCLA), Albert Feng, University of Illinois, and Phillip Jen, University of Missouri, attended an International Congress on Acoustics (ICA) in Beijing. As a result of that meeting, they were invited to deliver a series of lectures by Professor Wang Shu-Rong, the director of the Institute of Biophysics. During the lecture series, they met Professor Shen Jun-Xian, an auditory physiologist who paved the way for field work on an extraordinary frog in the Huangshan National Park in Anhui Province, China in 2000. Previously, Albert met Xu Chun-He, a Ph.D. student in his own department who eventually hosted Peter and Albert in their field expedition in 2000. Xu Chun-He eventually became a professor at the Shanghai Institute of Life Science at the Chinese Academy of Science. He not only provided critical logistic and bureaucratic support, but also several extraordinarily talented and helpful students to serve as field assistants, in exchange for instruction in techniques for conducting biological field research.

This collaboration led to the first publications documenting the ability of those frogs to produce and detect ultrasonic sounds. With the retirement of Professor Xu Chun-He, Narins and Feng began collaborating with Shen

Jun-Xian (Fig. 1). Since 2005, Shen has been involved in all aspects of the project and has been a coauthor on every subsequent publication that has emerged from the work. Narins and Feng performed the original peripheral and central auditory physiological recordings in Professor Shen's laboratory in Beijing and moreover, he, as well as his wife and students, have participated in every joint field trip involving those frogs since 2005. Recently, with the impending retirement of Professor Shen, and with a desire to study a second species of frog with putative ultrasonic sensitivity, Narins and Feng began collaborating with Professor Jiang Jianping, at the Chengdu Institute of Biology at the Chinese Academy of Science, Sichuan Province. Narins and Feng have found their scientific collaboration

with Chinese scientists to be fruitful, interesting, productive, but at times frustrating and challenging.

At the same ICA in Beijing (1992), Dr. Larry Crum of the University of Washington (UW), met Professor Rong Jue Wei, director of the Institute of Acoustics in Nanjing. Their laboratory visits revealed a number of mutual interests. These visits resulted in student exchanges in which Dr. Crum accepted several Chinese students into his group while continuing their education in the US. One individual, Juan Tu, (Fig. 2) was an exceptional student at UW, and returned to Nanjing as a faculty member. With the passing of Professor Wei, Juan Tu has served as a close contact with the students there, and she has

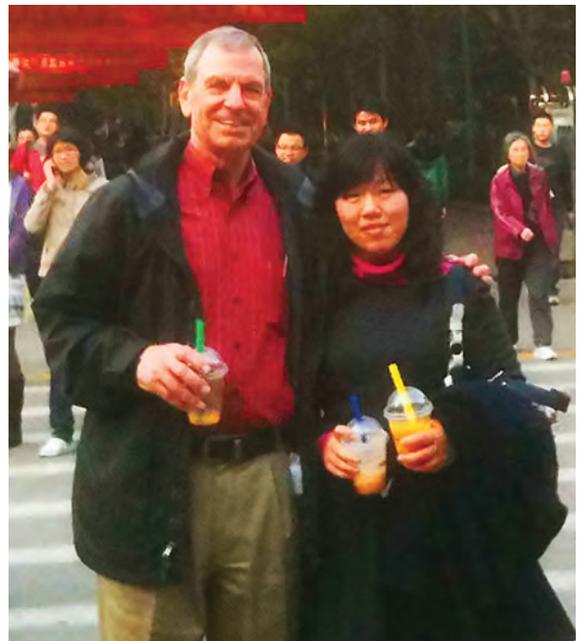


Fig. 2. Larry Crum and Juan Tu.

agreed to screen the students and recommend those who she felt would flourish in the American system.

Recently, Larry's research interests have focused on medical ultrasound, particularly therapeutic ultrasound. He discovered on a visit there in 2001 that the Chinese have not only developed ultrasound systems that could perform transcatheter tumor ablation, but had treated several thousand patients with a number of commercial systems. Accordingly, together with the assistance of Chinese colleagues, the International Society for Therapeutic Ultrasound was formed and annual symposiums have been held ever since. The 2011 Symposium was held in New York with over 300 attendees and over 200 papers presented.

The following are comments from Larry concerning Acoustics 2012 Hong Kong, "I strongly recommend developing a working relationship with our Chinese colleagues. If you are an academic, they can help screen students so that you won't be unpleasantly surprised when that student appears in your laboratory. If you are in industry, China is not just concerned with low-cost manufacturing, the percentage of their budget that they spend on Research and Development (R & D) is significantly more than that of the US. I travel to China 4 or 5 times a year to work with a medical device company, and my experience is that they are innovative, highly technical, and have strong government backing, and a reduced tax-rate, for high-tech industry. The ASA meeting in Hong Kong next year is an excellent opportunity to develop such a relationship and I strongly encourage you to attend."

An interesting paper entitled "Fifteen Years of U.S.-China Cooperative Research in Underwater Acoustics: 1995-2010," in the Proceedings of the Second International Shallow-Water Acoustics Conference (AIP conference proceedings 1272, Melville, NY, 2010) was authored by Drs. Ellen Livingston, Office of Naval Research (ONR), and Jeffrey Simmen, Applied Physics Laboratory, University of Washington. The following is quoted from the abstract "The Office of Naval Research and the Chinese Academy of Sciences established and continue to encourage an unprecedented collaboration between the United States and China in the basic research field of ocean acoustics." The abstract goes on to state "This cooperative research effort, primarily focused on shallow-water acoustics,



Fig. 3. Peter Dahl planning on the R/V *Shi-Yan 3* in the Asiaex experiment.

has varied over fifteen years. It has involved numerous researchers and institutions from the U.S., China, and other countries, and it has resulted in productive workshops, conferences, field experiments, research collaborations, and scientific publications."

Two large joint field experiments, the Yellow Sea Experiment (1996) and the Asiaex experiment (in the East China Sea and the South China Sea) have taken place in 2000 and 2001. Two shallow water acoustics conferences ensued—the first in Beijing in 1997 and the second in Shanghai in 2009. Participating scientists for the Yellow Sea Experiment came from the National Acoustics Laboratory in Beijing, Institute of Acoustics of the Chinese Academy of Sciences in Beijing, South China Sea Institute of Oceanology in Guangzhou, Ocean University in Qingdao, Applied Physics Laboratory at the University of Washington in Seattle, and the Georgia Institute of Technology in Atlanta. The Chinese research vessels *Shi-Yan 2* and the *Shi-Yan 3* were involved. In the Asiaex Experiment, scientists came from the U.S., China, Korea, and Taiwan (Fig. 3). The U.S. R/V *Melville*, the Taiwanese R/V *Ocean Researcher I* and the Chinese research vessels R/V *Shi-Yan 2* and R/V *Shi-Yan 3* were involved in the various phases of the Asiaex Experiment.

Acoustics 2012 Hong Kong will be an exciting meeting and the opportunities to advance the field of acoustics as a result of this meeting will be many. Take advantage of this excellent opportunity and plan on attending Acoustics 2012 Hong Kong. [AT](#)