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E-News

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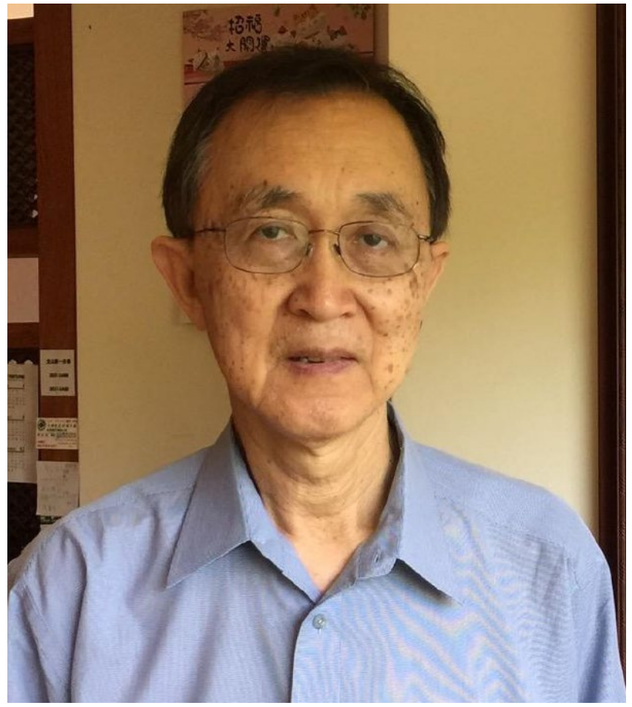

Dr. Chih-Pei Chang is Distinguished Professor Emeritus of the Naval Postgraduate School, Monterey, California and Distinguished Chair Professor of National Taiwan University. He received his Ph.D. from University of Washington in 1972. He was elected a Fellow of American Meteorological Society (AMS) in 1981 and received the Meisinger Award in 1983, in both cases being the first post-World War II generation Chinese American scientist honored by AMS. His other honors include Menneken Award of the Sigma Xi Society, Fellow of the Meteorological Society of Republic of China, a series of outstanding teach and research awards from the Navy, Honorary Member of the Hong Kong Meteorological Society, and Appreciation for outstanding leadership as the chair of the Monsoon Panel for a decade from the World Meteorological Organization.

1 Interview of Distinguished Professor Emeritus of the Naval Postgraduate School: Dr. Chih-Pei Chang

Author: Dr. Zhuo Wang

1. I have heard several legendary stories about you being a problem student who almost flunked out of school multiple times. Could you tell us your journey as a student?

I was never a good student, I did not like school work and was always wandering around with different extracurricular interests. In high school when Taiwan was under Martial Law, I got into trouble with the military teacher and was almost kicked out of the school, until my father agreed to keep me at home away from campus, so that I could keep my eligibility to take the college entrance examination. In college my interest was in competition bridge, and I became the captain of the National Taiwan University bridge team while failed so many courses that I was put on probation twice. I wanted to stay as a professional bridge player, but my father pushed me to come to U.S. It was pure luck that I ended up first in St. Louis University in 1967, and another luck that enabled me to transfer to University of Washington even though my admission was initially rejected due to poor grades. Two years later I became a student leader in the Bao-Diao Movement, when many students from Taiwan protesting Taiwan government's giving up of the Diaoyu Islands. I and my wife tried to start a small noodle restaurant so I can devote my time to the political activities. We couldn't find a place with affordable rents, so I had to come back to finish my thesis.

Some of these histories can be find in the following article:

https://www.ntsec.gov.tw/FileAtt.ashx?id=3107 (download pdf file "熱血坏學生的科學路", the file name may appear as random codes)

2. What are the contributions to atmospheric sciences that you are most proud of?

In term of research, in the 1960s when I was a student, it was probably my work on the time series of satellite images of tropical waves. They were the first direct observation of westward propagating waves, and a figure from that paper was included in Holton's dynamics meteorology textbook. In the 1970s my interest was in equatorial wave theories. My paper in 1977 was the first theory of the MJO, which separated equatorial waves into two vertical modes: a shallow, vertical propagating mode that behaves like free waves and dominates the stratosphere, and a deep vertical (reduced static stability) mode due to the quasi-balance of diabatic heating and dissipation, which dominates the troposphere. In 1978-79 I participated in the Winter Monsoon Experiment, resulting in a series of papers in the 1980s on the observation and theory of cold surges, showing that they behave like gravity waves. (cont.)

2 Interview of Distinguished Professor Emeritus of the Naval Postgraduate School: Dr. Chih-Pei Chang

Starting year 2000 my interest shifted to the Maritime Continent monsoon. We showed that the mesoscale terrain interacting with large scale circulation results in many interesting variations from short to annual time scales. These include the first observation of tropical cyclone development at the equator, the asymmetric seasonal march of monsoon rainfall, and most recently, a unique seasonal prediction problem due to global models' failure over the western Indonesia – Malay Peninsula region. I termed the region WIMP, which has an interesting meaning in English language: lack of confidence.

3. What about another dimension: your 3. What about another dimension: your leadership in coordinating and facilitating exchanges and cooperation across different communities and for international organizations?

In the second half of 20th Century Taiwan and Mainland China were enemies which prevented interactions between meteorologists across the Taiwan Strait. I had the luck to push through two watershed meetings between meteorologists from Taiwan and Mainland China during two of the region's highest tension periods: the 1989 Tiananmen incident and the 1996 Taiwan Strait missile crisis. In both times I was able to rescue the meetings that were initially derailed by seemingly insurmountable political forces. The cooperation between the two weather services flourished since then, leading to great benefits to people on both sides of the Strait as well as the East Asian region and beyond. There were also many subsequent developments that led to activities beyond the original purpose. My memoir of the dramatic development surrounding summer 1989 was published by the Meteorological Society in Taiwan and translated into English by the Hong Kong Meteorological Society:

http://www.networkchinese.com/region/tw/07041001.html

https://news.ucar.edu/sites/default/files/news/2014/CPChang%20Memoir%201989%20HKMS-Final.pdf (cont.)

Chih-Pei Chang (front row center) in a photo of the International Organizing Committee of the Sixth International Workshop on Monsoons of the World Meteorological Organization in Singapore, November 2017

3 Interview of Distinguished Professor Emeritus of the Naval Postgraduate School: Dr. Chih-Pei Chang

The 1989 conference was the first global Chinese language meteorology meeting. Professor Jing Wu of University of Delaware was the leading oceanographer at the conference. Upon returning to U.S he started to promote the idea of COAA, and I was asked to be the west coast coordinator. That was the time when most Chinese American scientists were from Taiwan, so the first few generations of COAA organizers were mostly from Taiwan.

I had the fortune to be involved in the initial planning and developments of the Modernization Program of the Central Weather Bureau in Taiwan, the Asia Pacific Economic Cooperation Climate Center in Korea, the Centre for Climate Research in Singapore, and the founding of the Hong Kong Meteorological Society. As the WMO Monsoon Panel Chair, we organized a series of international workshops, bringing hundreds of researchers and forecasters from around the world to discuss topics ranging from extreme rainfall to climate change. We published four books entitled the Global Monsoon System with the fifth in process, and helped to organize several field experiments. Recently, our report on monsoon rainfall climate change from an international workshop was highlighted by the 2022 January issue of the paper copy of BAMS and formed the basis of the IPCC report on the subject.

The following Naval Postgraduate School site has an old article about my activities prior to 2010:

https://nps.edu/stories-archive/-/asset_publisher/A2LdkKOlw8D1/content/nps-distinguished-professor-quietly-pursues-meteorological-diplomacy-

A recent short article about early 2022 activities can be found at the National Taiwan University press release:

https://sec.ntu.edu.tw/epaper/article.asp?num=1519&sn=21260

4. With your history of diversified interests, what are your current interests besides atmospheric sciences?

Chinese history, medical science, religious philosophy, and cosmology

Chih-Pei Chang (second from right) in 1978, then of the Department of Meteorology, Naval Postgraduate School, attending the Winter Monsoon Experiment with colleagues in Kuala Lumpur, Malaysia.

"In college I spent most my time competing in premier league bridge and seemed to be destined to become a professional bridge player. When I learned that heavy rainfall in the South China Sea can occur a couple days following cold air outbreaks from far away Siberia, I thought weather forecasting can be as fun as bridge. Instead of counting cards, I just have to count the cold air outbreaks and rainfall. And my father would be happier with me if I did not make a living playing cards."

—Chih-Pei Chang, Naval Postgraduate School and National Taiwan University

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