



Tsing-Chang (Mike) Chen (1945-Present)

Professor of Meteorology

Iowa State University

"Meteorology is a very exciting and challenging field." Tsing-Chang Chen, 2005.

Overview

Dr. Tsing-Chang Chin is a professor of Meteorology at Iowa State University. Over the years, Chen has conducted a number of successful research projects, a fact he notes as a career highlight. His efforts have included research in the areas of energy transformation, tropical meteorology and monsoons, the global hydrological cycle, and severe weather systems in the Great Plains. In 1993, Chen and his mentor, Dr. Aksel Wiin-Nielsen, co-authored a book called *Fundamentals of Atmospheric Energetics*; the work went on to become a landmark in the field. Chen's outstanding research led his colleagues to elect him as a fellow of the American Meteorology Society, from which he has received an Editor's Award. Some of his selected publications are below:

- Yoon, J.-H. and T.-C. Chen, 2006: Maintenance of the boreal-forest rainbelt during northern summer. *J. Climate* (in press).
- Chen, T.-C., 2006: Characteristics of African Easterly Waves Depicted by ERA-40 Reanalysis. *Mon. Wea. Rev.* (in press).
- Chen, T.-C., S.-Y., Wang and M.-C. Yen, 2006: Interannual Variation of the tropical cyclone activity over the western North Pacific. *J. Climate* (accepted with revision).
- Chen, T.-C. and J.-D. Tsay, 2006: Merging data on the polar stereographic and octagonal grids. *J. Appl. Meteor.*

This interview was conducted in 2015.

Early Life and Education

Tsing-Chang (Mike) Chen remembers becoming interested in science as a small child. His father was a high school teacher, and often brought his son to school when the family could not find a babysitter.

When Chen was just four or five years old, he would sneak into the Chemistry lab and watch as the older students mixed solutions together. “I remember watching the two solutions combine and change colors,” Chen says. “As a child I was absolutely fascinated; that was how I was first exposed to, and became interested in, science.”

As a young man, Chen had his sights set on pursuing a career in physics, and he graduated from Taiwan University with a physics degree. However, in the midst of his studies, an advisor suggested that Chen apply his strengths in scientific interpretation to geophysics or meteorology. Chen says that he was initially uninterested in either field; but the more he learned about meteorology, the more interested he became. Following college, Chen came to the United States, where he obtained a Ph.D. in meteorology from the University of Michigan.

Career

Chen did post-doctoral work at the National Aeronautics and Space Administration’s (NASA) Langley Research Center in Hampton, Virginia, and at MIT, where he stayed for nearly two years. Following his post-doctoral research, Chen planned to return to Taiwan, but was denied re-entry for political reasons. Chen was involved in a church that was outspoken against Chiang Kai-shek; his father-in-law was part of the church’s clergy, and the Taiwanese government used this affiliation to bar Chen from the country. After several unsuccessful attempts to return to Taiwan, Chen accepted a teaching position at Iowa State University, where he is currently employed.

Highlights

Over the years, Chen has conducted a number of successful research projects, a fact he notes as a career highlight. His efforts have included research in the areas of energy transformation, tropical meteorology and monsoons, the global hydrological cycle, and severe weather systems in the Great Plains. In 1993, Chen and his mentor, Dr. Aksel Wiin-Nielsen, co-authored a book called *Fundamentals of Atmospheric Energetics*; the work went on to become a landmark in the field. Chen’s outstanding research led his colleagues to elect him as a fellow of the American Meteorology Society, from which he has received an Editor’s Award. He also gained tenure within three years of joining the faculty at Iowa State, and was eventually nominated for the school’s Distinguished Professor Award.

Importance of Mentorship to Career Development

Both Wiin-Nielsen, with whom Chen wrote his book, and Dr. Fred Baer (both originally University of Michigan professors) have provided Chen with inspiration and guidance throughout his career. Both men were successful in the field of meteorology, and served as excellent mentors to Chen as he shaped his own career goals. Unfortunately, Chen has few opportunities to mentor young minorities at Iowa State, simply because the university does not have many minority students in meteorology. Iowa State falls short of its goal of seven to eight percent minority enrollment, Chen says. However, he notes that the university does have many international students, some of whom are in Chen’s department.

Challenges

Iowa State University is located in mid-Iowa, a politically conservative area. Chen feels this may explain why diversity issues do not have a strong root on the campus. Chen says he has tried on occasion to become involved in campus diversity activities, but was told that Asians do not qualify as a minority group.

Chen would like to interest more minorities in meteorology and other environmental sciences; he advises interested young people of color to start by getting involved in outdoor activities. Chen faults the American educational system for not nurturing minority environmental talent. However, he also notes that many universities are still eager to attract minority students, and higher-education opportunities remain for students of color.

Chen says that ultimately, he remains in his field because the weather never stops being interesting. Meteorology is a dynamic field with many real-world applications, as Chen illustrates with this anecdote: "In September, we had a tornado touch down right in the middle of campus. Everyone around here wanted to know why, so myself and a graduate student studied it for a month. It's really an exciting field."

For More Information

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