

FEATURE

Accomplished Chinese Americans

Heidi Shyu

Vice President/Technical Director Space and Airborne Systems Raytheon Company, Los Angeles, CA

The recipient of 2004 AAEOY Award (Asian American Engineer of the Year) Sponsored by Chinese Institute of Engineers (CIE)/USA Santa Clara, CA, 28 February 2004

Born: 28 September 1953 Taipei, Taiwan [Republic of China]
Came to U.S. 1964
U.S. citizenship: while in Junior High School

B.S., Mathematics, 1976, University of New Brunswick, New Brunswick, Canada
M.S., Mathematics, 1977, University of Toronto, Ontario, Canada
M.S., Electrical Engineering, 1981, University of California, Los Angeles
Engineers Degree, 1982, University of California, Los Angeles
Executive Management, 1997, University of California, Los Angeles

Miss Heidi Shyu was raised by her paternal grandparents in Taiwan. She had a comfortable and happy childhood - pampered by her loving grandmother. She and her sister always had plenty of new clothes to wear, had favorite dishes, and a private playground built by her grandmother in the backyard. It had a concrete slide, see-saw, swing, tricycles, and a little tea garden.

Heidi showed independent streak when she was 5. One day, she decided to go down to the bakery and buy some freshly baked bread all by herself. Her grandmother panicked when she could not find her and sent the servants frantically looking for her. Half an hour later, Heidi strode back home with a bag of fresh bread. She could not understand why they were all so upset. After all, she bought fresh buns for everyone!



Heidi's parents divorced when she was eight and both remarried. Her mother married her stepfather who at that time was in the U.S. Air Force. He adopted Heidi when he was stationed in Japan. She moved to Japan at age 10. She started to learn English. She was put into first grade. She felt humiliated to be in the same class with six-year-olds. This motivated her to learn English fast. At the same time, she was placed in the 3rd grade math class. Since Heidi was in grade five in Taiwan, the third-grade math class was a breeze. The kids thought that she was brilliant when in fact, she was older than them. Being little, she was shorter than most of the eight year olds in her class and nobody believed her when she said she was ten so the illusion of being brilliant continued.

Heidi's step-father was frequently transferred. She ended up going to three different

junior high schools in the U.S. and three different high schools in three different countries (U.S., Republic of China, Canada). Since she moved so much and was the perpetual new student, she became very studious, books became her closest friend. One summer while in junior high school, she read 65 books. Her eighth grade teacher was absolutely shocked that Heidi read so much (about 10 times more than the other students). In grade 7, her math teacher frequently gave students speed tests. Heidi always finished first.

Life During High School Days

Heidi excelled in most subjects. In 10th grade, she loved mathematics & chemistry. In 11th grade, her family moved back to Taiwan and she attended Taipei American School. Since school was not very challenging, she ended up partying more than studying. In the 12th grade, she moved to Fredericton, New Brunswick, Canada. She remembered picking up books a week before class and decided to read up on mathematics. She read the first 7 chapters and was rather disappointed when teacher started in Chapter i. So, she rarely paid much attention to the teacher in class except when the teacher got stumped by a question. She would then look up, and help the teacher solve the problem. After a while, she developed a bad habit of not paying attention to the teacher and read whatever she felt like during class.

Life During College Days

Heidi enjoyed college more than high school. She tried to take as many mathematical courses as possible to stay stimulated and challenged. In her junior year, she took a Complex Analysis class with a room full of male engineers. After the first mid-term in which she scored 100% and the next highest grade was less than 50%, her professor decided that Heidi did not have to attend any more of his classes and just to show up for the examination. On the final examination, the teacher gave Heidi a different test than the rest of the students. He added additional questions to challenge her. She graduated with a B.S. in Mathematics with First

Class Honors and then went on to graduate school in Toronto, Canada.

Quest for Lifelong Goals

Heidi loved hiking and being out in nature. She exercised often by lifting weights and running. Her laser-like focus in getting in shape resulted in a tough exercise routine: she lifted weights for up to 2 hours. That enabled her to carry a 55 lb backpack up steep trails in the Sierra mountains. The peace and solitude of the mountains brought tremendous joy to her. She felt total freedom. She took basic then advanced mountaineering courses and learned to rock climb then ice climb. She read many mountaineering books. Unfortunately, on the volcanos in Ecuador, she found out that her body did not tolerate cold temperature. That dashed her hopes of serious high altitude mountaineering as a career. After that, she turned her focus to career at work. The same laser-like focus enabled her to climb the corporate ladder by taking risks and never giving up.

2004 AAEOY Award

Heidi's supervisor and mentor, Dr. Peter Pao, the Vice President of Joint Strike Fighter Programs at the time, described her personal character this way.

Heidi Shyu is Energetic. She is nuclear [lowered and can not stop herself She has two full time jobs now. Heidi is a Vice President & the Technology Director for Raytheon Space and Airborne Systems. She is also the Vice Chair of the Air Force Scientific Advisory Board, where she reports directly to the Secretary of Air Force.

Heidi Shyu is passionate. Once Heidi decides to do something, she is totally committed. Her passion is also contagious to her team mates she works with. Together, they get things done. Heidi won the prestigious Raytheon Hero award in 2001, and her team won the Raytheon Corporate Excellence in Technology Award in 2000.

Heidi Shyu is a fanatical mountain climber. She spent just about all her spare time

and vacation climbing mountains. In 1986, it was Annapurna, Nepal. 17,700 ft. In 1987, it was the volcanoes in Ecuador at 20,000 ft. Then the roof of Africa, Kilimanjaro in Tanzania. A couple years ago, it was the Himalayas, Mt. Jomolhari in Bhutan. These are not walk in the park. She suffered altitude sickness, hypothermia, Asian flu, intestinal problems, eye infection, you name it... And she loved it. She calls it Passion for pain.

Finally, Heidi Shyu is fun. Working with Heidi is fun. Her special way of laughing can turn any bad news into a joke, and help us to re-focus and re-start. Heidi is one of the most popular executives in Raytheon.

In accepting the CIE 2004 AAEOY Award, Heidi said:

".... Most of all, I would like to thank two people who were the most influential to me. They are my grandparents. My grandfather passed away in 1995 but my grandmother is still alive at 94. She has slowed down and complains that it takes her 5 days to knit a sweater rather than 3. They were wonderful role models to me in my most formative years. They always believed in me and gave me enormous drive to seek challenge and succeed. They taught me to strive to achieve what seems to be impossible, and never, ever give up, no matter how difficult things appear. They taught me to have compassion and treat people with kindness and respect. This award is for her. I hope that each and every one of you will turn your dreams into lightning and allow it to energize you to climb your own mountain, no matter what it is. And when you reach the top, don't forget to turn around and reach down and lend a helping hand to others.] A very moving human emotion!"

Professional Achievements

1/2004 - now: Vice President (VP) & Technology Director, Space & Airborne Systems, Raytheon Co. Los Angeles, CA. She is responsible for reviewing all the technologies within Space & Airborne Business Segment at Raytheon and provide technical guidance and oversight in their

development. She provides guidance in technology roadmaps and investment strategy.

10/2002 -12/2003: VP, Unmanned & Reconnaissance Systems, Raytheon Co. Los Angeles, CA.

11/2001 -10/2002: Senior Director, Unmanned Combat Vehicles. Raytheon Co. Los Angeles, CA.

7/2001 -11/2001: Senior Director, Joint Strike Fighter. Raytheon Co. Los Angeles, CA.

7/1997 - 7/2001: Director, Joint Strike Fighter Antenna Technologies. Raytheon Co. Los Angeles, CA.

1/1995 - 7/1997: Laboratory Manager, Electromagnetic Systems. Hughes Aircraft Company. Los Angeles, CA.

1992 - 1994: Program Manager, Low Cost Radar, Hughes Aircraft Company. Los Angeles, CA.

1990 - 1991: Senior Staff, Litton Applied Technology Division. San Jose, CA.

1989 - 1990: Principal Engineer, Joint STARS Self Defense Study, Grumman Company, Melbourne, FL.

1985 - 1989: Senior Staff Engineer, Hughes Aircraft Company. Los Angeles, CA.

1983 - 1985: Staff Engineer, Hughes Aircraft Company. Los Angeles, CA.

1978 - 1983: Member of Technical Staff, Hughes Aircraft Company. Los Angeles, CA.

9/2003 - 9/2006: Vice-Chairman of the Air Force Scientific Advisory Board

9/2000 - 9/2003: Member of the Air Force Scientific Advisory Board

Service to Professional Societies & Community:

- Executive advisor to Raytheon Asian Pacific Association (RAPA) 2001 - 2004. Invited speaker to Raytheon sites: El Segundo, CA., Goleta, CA., San Diego, CA., Tucson, AZ., Sudbury, MA., Bedford, MA., McKinney, TX.

- Invited speaker at Leadership for Asian Pacific (LEAP) seminar, Oct. 2003.
- Keynote speaker at Women's Committee at Aerospace Corporation, Aug. 2002.
- Invited guest speaker National Association of Asian American Professionals (NAAAP), Aug 2001.
- Honors Raytheon Hero Award, 2001, for leading the development of the Tile Active Array Radar System in record time.
- Raytheon Corporate Excellence in Technology Award, 2000, for development of the innovative Tile Active Array radar, which significantly reduced radar systems weight volume and cost while greatly improving reliability and performance.
- Hughes Aircraft Company Corporate Superior Performance Award, 1988, for leadership in development of F-15/APG-63 ECCM algorithms to provide target detection capability in the presence of a Velocity Bin Masking Jammer and a Velocity Gate Stealer jammer in different radar modes.
- Hughes Aircraft Company Radar Systems Group Superior Performance Award, 1987, for leadership in developing highly effective tools to analyze F-15/APG-63, F/A-18 APG-65, F-15/APG-70 ECCM algorithms.
- Hughes Aircraft Company Radar Systems Group Superior Performance Award, 1986, for leadership and quality of advanced ECM/ECCM analysis and design.