Shing-Tung Yau

Shing-Tung Yau (born April 4, 1949) is a Chinese American mathematician, working in differential geometry. He was born in Shantou, Guangdong Province, China into a family of scholars from Jiaoling.

Yau was the fifth of the eight children of his parents Chen Ying Chiou and Yeuk-Lam Leung Chiou. His father was an economist and philosopher working in southern China when Yau was born. However, by late 1949 the Communists were in control of almost all of China and Yau's family fled to Hong Kong where his father obtained a position teaching at a College. Times were difficult for the family, however, and Yau's mother knitted goods to sell in order to supplement their low income. Life was tough for Yau living in a village outside Hong Kong city in a house which had no electricity or running water and at this stage of his life he often played truant from school preferring his role as leader of a street gang. Yau's father was a major influence on him, encouraging his interest in philosophy and mathematics.

Sadly, when he was fourteen years old, his father died but by this time Yau was enjoying his school education. He helped out with the family's finances by acting as a tutor. After leaving school in 1965, he continued his education at Chung Chi College of the Chinese University of Hong Kong and travelled to UC Berkeley in 1969 on a fellowship from IBM. Two years later he had earned his PH.D. in mathematics, studying under Shiing-Shen Chern. After work at SUNY Stony Brook, the Princeton Institute for Advanced Study, UC San Diego, and Stanford, he went to Havard in 1987, becoming Chair of the Harvard Mathematics Department in 2008.

Yau received the Fields Medal in 1982 for his proof of the Calabi conjecture (1976) in algebraic geometry and complex geometry, the positive mass conjecture in general relativity (1979) , the Frenkel conjecture in complex geometry (1980), the Smith conjecture in topology (1982), and for introducing powerful methods such as gradient estimates in geometric analysis, among many other contributions. Prof. Yau has also received the MacArthur "genius" Fellowship (1984), the Crafford Prize (1994), the U.S. National Medal of Science (1997), and the Wolf Prize in Mathematics (2010) for his work in geometric analysis that has had a profound and dramatic impact on many areas of geometry and physics, together with Dennis Sullivan.

He has received numerous honorary Doctorates, is a member of the U.S. National Academy od Sciences, the American Physical Society, and the American Mathematical Society. He is also a member of the national scientific academies of China, Russia, Taiwan, and Italy.

Prof. Yau's research lies principally in differential geometry and differential equations, but his work has touched all of mathematics and physics. His proof of the Calabi conjecture has been instrumental in the development of String Theory and Geometric Analysis. In addition to his academic work, Yau is a major proponent of academic development in China, and has helped found at least four math institutes there. He has also trained over 60 Ph.D. students.

He is considered the ambassador of mathematics.

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