Professor Chen-Ning YANG

Citation

In honoring Professor Chen-Ning Yang we pay tribute to a man whose study covers a wide area and who has been called one of the greatest physicists of the 20th century. Yet, Professor Yang's influence reaches beyond the world of physics. As a physicist and as a human being, his influence on Chinese communities inside and outside China is immense and unprecedented.

Professor Yang's focus has always been on particle physics and statistical physics. In 1954, Professor Yang and R Mills invented the non-Abelian gauge field theory that extended the gauge invariance principle in electromagnetism to isospace, thus paving the way for the development of modern particle physics. It is now believed that three of the four fundamental interactions in nature, namely, the electromagnetic, strong and weak interactions, can all be depicted by Yang-Mills gauge theory. In 1957 Professor Yang and his colleague Professor T D Lee astounded the scientific world with their proposal of non-conservation of parity, a remarkable achievement that earned them the Nobel Prize. They were the first scientists of Chinese origin to win such a prize. Professor Yang's other major contributions in the field of physics are, to name just a few, the Yang-Baxter equation in one-dimensional many-body quantum systems and the concept of off-diagonal long range order in statistical physics. Professor Yang's non-Abelian gauge field theory and the Yang-Baxter equation have also exerted a far-reaching influence on mathematics.

Professor Yang is known as a conservative revolutionary, a genius, a magician, a theoretical alchemist, a great physicist with a sensitive heart, a physics romanticist, and a humanist. But one of the most important aspects to Professor Yang as a physicist is that he is first and foremost the preeminent stylist of the 20th century, according to Freeman Dyson. Professor Yang highly values the function of style in scientific research. He wrote in 1983: "In every field of creativity, it is one's taste, together with ability, temperament, and opportunity, that determines one's style and through it one's contribution." He believes that taste and style are as important in scientific pursuits as they are in literature, art and music.

A close examination of Professor Yang's career reveals a unique style not only in research but also in many other activities. He is, for example, capable of exact analysis and presentation of ideas in the most succinct language of a mathematician. Many physicists have referred to Professor Yang's ability to seek out issues of significance and solve them long before others can. Professor Yang has also been acclaimed a theoretical alchemist whose "golden touch" has turned into gold mines many inconspicuous physics topics. And it has been noted that many significant contributions that have led to Nobel Prizes bear the distinctive marks of Professor Yang's early work.

Professor Chen-Ning Yang was born in 1922 in Anhui Province, China. He graduated with honors from the National Southwest Associated University, and received a scholarship to study in the United States, gaining his doctorate from the University of Chicago. From 1949 to 1966, Professor Yang worked at the Institute for Advanced Study as a Research Professor. In 1966 he was invited to fill the Albert Einstein Professorship at the State University of New York at Stony Brook. He held the post for 33 years until his retirement in 1999.

Professor Yang is presently a fellow of the American Academy of Sciences and the Chinese Academy of Sciences and also a member of the American Physical Society. He has received a great number of awards for his outstanding achievements, such as the American National Science Award of 1986. Professor Yang is also a great educationist. Since 1971, he has made a point of visiting the Chinese Mainland, Hong Kong and Taiwan to give lectures and train young scientists. He was appointed Distinguished Professor-at-Large at the Chinese University of Hong Kong in 1986 and has held the post since then. Always generous in sharing his exciting insights and thoughts, he also has the gift of showing genuine interest in the work of others.

For Professor Yang, it seems that his greatest contribution to mankind is in the influence he has exerted on the Chinese community rather than in the realm of physics. He once said of himself: "The most important contribution in my life is to have helped the Chinese people overcome our inferiority complex."

Professor Yang is a great figure not only in the field of science but also in many other areas of human endeavor. Mr Pro-Chancellor, I have the honor to present to you, on behalf of the University, Professor Chen-Ning Yang, 1957 Nobel Laureate in Physics, for the degree of Doctor of Science *honoris causa*.

Based on information provided by
Professors Paul Ching-Wu Chu and Tai Kai Ng.