

## **Remembering Professor C. C. Lin (1916-2013)**

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The life of Chia-Chiao Lin is deeply entwined with the history of modern China and the diaspora of Chinese intellectuals to North America and Western Europe: their trials, their hopes, and their ultimate triumphs. In this talk, I will review the founding of Tsinghua University and Lin's experiences here as a prize student. In a 2002 Florida interview Lin reveals how the Sino-Japanese War and Pei-Yuan Zhou influenced his decision to switch from physics to aeronautics as a career path. We also learn how the works of Theodore von Karman, Werner Heisenberg, and John von Neumann guided Lin's contributions to the theory of hydrodynamic stability and hydrodynamic turbulence. These experiences formed his attitudes toward the relative roles of analytical theory versus numerical simulation. Lin's later appointment to the faculty at MIT had a huge impact on the very definition in America of what is applied mathematics. Chen-Ning Yang's invitation for Lin to spend a sabbatical year at the Institute for Advanced Study turned Lin's attention to astrophysics and the problem of spiral structure in disk galaxies. Again controversy enveloped Lin's approach to this problem and those of his contemporaries in theoretical astrophysics. He remained confident that astronomical observations rather than technical arguments would be the final arbiter of the correctness of the theory, and I will briefly review -- as others at this conference will discuss in greater detail -- why history has largely proven him justified in this attitude. His accomplishments in this field led to his appointment as an Institute Professor at MIT as well as many other academic honors. In his 60s, he correctly foresaw that economics would dominate much of subsequent human activities, including perhaps mathematics applied to the practice of economics. At the age of 86, when he returned to the land of his birth, he changed his research direction again, to the study of protein folding, a focus path on which he set the founding of the Zhou Pei-Yuan Center for Applied Mathematics. To his last days in the hospital, he remained dedicated to the ideals of his youth: how he might better help his beloved Tsinghua. He will be missed but never forgotten.