

William R. Fredrickson **FREE**

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model. Their work, predicting the value of the lower critical dimension, continues to stimulate intense and controversial research (see PHYSICS TODAY, July, page 17).

In 1981, Ma formulated the "coincidence counting" method for the calculation of entropy from the phase space trajectory. He felt strongly that such a dynamical formulation of entropy was crucial for understanding random and other systems exhibiting metastability.

Ma had a deep interest in furthering scientific development and education in his native land. He believed very strongly that fundamental science should be taught in the native language in any country. He taught at Tsing Hua University, Taiwan, in 1977 and in 1981, and wrote an advanced text on statistical mechanics in Chinese. This book, published shortly before his death, is the culmination of his lifelong interest in statistical mechanics. Based in dynamics, it eschews the traditional approach built on the Gibbs ensemble. An English translation is in progress.

In addition to being a dedicated teacher and physics scholar, Ma had a broad range of cultural and social interests. He was a frequent contributor to Chinese newspapers of commentary on contemporary political issues. He was a gifted painter and in recent years had extended his interest in music by learning to play the classical Chinese *ch'in* (zither).

Despite his declining health, Ma insisted on continuing to teach a graduate course in statistical mechanics until a few days before his death. The required energy and determination came naturally from his quiet dignity, enthusiasm and passionate concern to communicate his unique insights to his students.

His colleagues and friends at UCSD have founded a scholarship and physics prize fund in his memory, and invite those who wish to join in this tribute to send their (tax-exempt) contributions

to: Shang-keng Ma Memorial Fund, c/o Department of Physics, B-019, University of California, San Diego, La Jolla, California 92093.

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William R. Fredrickson

William R. Fredrickson died on 9 January 1983 at the age of 79. A member of the physics department of Syracuse University from 1928 to 1971, he served as its chairman longer than any other person, from 1939 to 1965.

Fredrickson graduated from the University of Chicago in 1924 and received his PhD in molecular spectroscopy there in 1928. When he came to Syracuse he was one of six faculty members in the physics department. By the time he retired as chairman, the faculty had grown to 22 and occupied a new building that he had planned. Even though his main activities were teaching and administration, he found enough time to supervise infrared research, to encourage young faculty in their own research and to serve on national committees planning the future of infrared research. Despite his many commitments, he was always available to any of his students who wanted to see him, even though his lectures in astronomy had enrollments over 300. He was named the William R. Kenan Professor of Physics in appreciation of his devotion to undergraduate studies.

In 1978, in recognition of his 50 years of service to the University, the William R. Fredrickson Scholarship Fund was set up by former students and the department faculty to provide a living tribute to the inspiration he had provided during his leadership.

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