

**Killian Faculty Achievement Award
Citation for Professor Robert A. Weinberg (1999)**

The James R. Killian Award was established in 1971 "to recognize extraordinary professional accomplishments by full time members of the MIT faculty". It is the greatest honor the faculty can bestow on one of its members. The awardee is chosen by a faculty committee from candidates nominated by faculty members for outstanding contributions to their fields, to MIT and to society. On behalf of the selection committee, which consisted of Professors Robert C. Armstrong, Suzanne Berger, Jean P. de Monchaux and myself I am very pleased to announce that the winner of the Killian Faculty Achievement Award for 1999 is Professor Robert A. Weinberg, a member of the Department of Biology and of the Whitehead Institute. He has already received many honors for his outstanding research, among them the National Science Medal in 1997.

His association with MIT goes back to 1960, and was only interrupted for one year in 1965-66 and for three years from 1969-1972. After obtaining his bachelors degree here in 1964, he entered our graduate school, but interrupted his study after one year because he considered it his duty to contribute to the education of disadvantaged minority students by serving for one year as instructor in biology at the Stillman College in Alabama. He returned to MIT and obtained his Ph.D. degree in 1969. After postdoctoral study at the Weizmann and Salk Institutes, he returned to MIT in 1972 and joined the faculty of our Biology Department in 1973. In 1982 he became one of the founding members of the Whitehead Institute.

Professor Weinberg's field is cell biology and the focus of his research has been the conversion of normal cells into tumor cells. His studies have revealed the genetic and molecular mechanisms responsible for this event. One of his outstanding contributions was the demonstration that DNA, the genetic material, extracted from the cells of a tumor generated by exposure to coal tar when introduced into normal cells could endow these cells with the ability to form the characteristic coal tar induced tumor, proving decisively that tumors originated from an alteration in the genetic material. He subsequently showed that the change from a normal gene to a tumor producing oncogene could be due to a change in a single base pair in the DNA of the gene. Accordingly, carcinogenesis, can result from a mutation in a protooncogene, whose role is to activate the growth of the cell according to the needs of the organism, to an oncogene stimulating uncontrolled growth. His studies of the neoplastic disease retinoblastoma subsequently led to the recognition of tumor suppressor genes. The products of these genes serve to inhibit cellular growth, and the loss or inactivation of these genes by mutation is another cause for the uncontrolled growth of tumor cells.

These important discoveries have not only led to promising approaches to the prevention and ultimately, the possible cure of neoplastic diseases, but have also greatly enhanced our understanding of the complex and subtle mechanisms responsible for growth and maintenance of the organs of multicellular organisms.

Another major contribution of Professor Weinberg is the education of postdoctoral, graduate and undergraduate students, and of the general public. Many former members of his laboratory now occupy major academic positions and have in turn made important discoveries. He has used his remarkable ability to communicate scientific ideas as teacher in the introductory biology course which is one of our institute requirements. Finally, his recently published book.

“One Renegade Cells” presents an easily comprehensible, interesting, accurate and engaging account of the struggle to understand cancer.

In summary, Professor Weinberg’s extraordinary professional accomplishments make him a worthy recipient of the James R. Killian, Jr. Achievement Award.