

Mark Steven Ptashne Biography

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Biography

American molecular biologist Mark Steven Ptashne is head of the **gene regulation** research program at the Sloan-Kettering Institute in New York City.

After undergraduate study at Reed College, Ptashne received a Ph.D. in Molecular Biology from Harvard University in 1968. After receiving his doctorate, Ptashne stayed at Harvard to continue his research in molecular biology and **biochemistry**. Ptashne was awarded a Guggenheim Fellowship in 1973-1974 and later served as the head of Harvard's Department of Biochemistry and Molecular Biology from 1980 until leaving Harvard in 1983 to start the Genetics Institute. In 1986, Ptashne wrote a highly acclaimed book titled *A Genetic Switch* that explained mechanisms of genetic regulation. Subsequently, Ptashne accepted the Herchel Smith Professor of Molecular Biology at Harvard in 1993. In 1997, Ptashne moved his research to the Sloan-Kettering Institute.

Ptashne's research has centered on the fundamental mechanisms of **gene** regulation, especially the mechanisms of **transcription** regulation. Independent of the similar work done by his Harvard colleague, **Walter Gilbert**, Ptashne gained an international reputation for his identification and explanation of the operation of repressor genes.

Ptashne's work extends into concepts of regulated localization and the interactions of cells with extracellular molecular signals. Although much of the information underlying Ptashne's explanations of gene regulation comes from work done with **bacteria** and **bacteriophage**, Ptashne's research also extends to mechanisms of control in higher *Drosophila* and animal cells.

Recent work by Ptashne and his colleagues include investigations into the relation between **telomere** looping and gene activation; activation of **gene expression** by small molecule transcription factors; and various methods of transcriptional activation in mammalian cells. Ptashne continues work in measuring and describing the **evolution** of systems of genetic regulation.

Among his many honors and awards, Ptashne received the 1977 Lasker Award for Basic Research. In addition to his scientific research, Ptashne also studied music at the New England Conservatory of Music in Boston and plays the violin.