# Patrick O. Brown Biography

## Patrick O. Brown

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# Biography

Patrick Brown is an associate professor of biochemistry at Stanford University School of Medicine. At his lab, Brown, his associates, and his students are exploring the possible applications of protein microarrays in discovering and diagnosing disease and monitoring health.

Brown received his B.A. degree in chemistry from the University of Chicago. His graduate work at the University of Chicago focused on the mechanisms of **DNA** topoisomerases. A topoisomerase is an enzyme that can cut and reform polynucleotide backbones in DNA, allowing it to have a more relaxed configuration. Brown received his Ph.D. (1980) and M.D. (1982) degrees from the University of Chicago. After completing a pediatrics residency at Children's Memorial Hospital in Chicago, he joined a lab at the University of California, San Francisco. There, Brown focused his studies on the mechanics of retroviral integration.

A **retrovirus** is a single-stranded **RNA** animal **virus** that employs a double-stranded DNA intermediate for **replication**. The RNA is copied into the DNA by the enzyme **reverse transcriptase**. Retroviruses cause many diseases in most vertebrates. In humans, various retroviral infections cause leukemia, lymphoma, and acquired immune deficiency syndrome (**AIDS**). At the Brown Lab a comprehensive search is underway for mutations in the viral **genome** that cause blocks at specific points in the replication process.

Brown has co-authored numerous research papers and scientific journal articles on subjects such as studying the genome with **DNA microarrays**, exploring the metabolic and genetic control of **gene expression**, and large-scale identification of secreted and membrane-associated **gene** products using DNA microarrays.