



verse will indefinitely continue expansion it began after Big Bang. Leader in campaign to have the National Aeronautics and Space Administration set up space telescope scientific institute in Chicago.

Runners-Up

DAVID BALTIMORE, 43, professor of biology, Massachusetts Institute of Technology, leading researcher on viruses and cancer

WINSTON J. BRILL, 41, professor of bacteriology at University of Wisconsin-Madison, now developing corn that fixes nitrogen from air

FRANKLIN LIM, 53, Medical College of Virginia in Richmond, researching treatment of diabetes with "living pill" of insulin-producing cells

TOM MANIATIS, 37, biochemist, genetic engineering, Harvard University

SOLOMON SNYDER, 42, chairman of department of neurosciences, Johns Hopkins Medical Institutions, Baltimore

Mark Ptashne: The Quest for Biology's Holy Grail

Universities have always produced much of this country's basic scientific research—and then passed on their key discoveries, in exchange for royalties, to private industry, which reaps the real profits. But that is likely to change soon, because colleges will be unable to pass up any legitimate source of income in the hard years ahead.

Helping colleges into the commercial market will be a most unlikely and reluctant figure, a leftist who once, long before it was fashionable, traveled to Cuba with Tom Hayden in defiance of a State Department ban—an iconoclast who spends part of each summer studying violin in Italy.

Mark Ptashne, 40, also happens to be a Harvard University professor and one of the world's most promising and successful molecular biologists. When Harvard made headlines last fall by publicly debating whether to get into the gene-splicing business, Ptashne was a key figure behind the scenes. Though the faculty eventually rejected the proposal put forward by Derek C. Bok, Harvard's president, other universities—lacking Harvard's \$1.45 billion endowment—remain interested. So did Ptashne. He was distressed by the "hysteria" surrounding the faculty debate, but he says, "It seems wrong that the money doesn't come back to the university that made it possible."

The proposed company for which Ptashne was to have been chief consultant would have exploited important discoveries made in his laboratories in Cambridge, Massachusetts. There, Ptashne has been plugging away at a single biological problem: isolating and ex-



Rick Friedman/Block Star

plaining the "repressor" mechanism that switches genes on and off—a process that Walter Gilbert, a Nobel laureate, once described as biology's "Holy Grail." Working just across the hall from Gilbert, Ptashne made one of the first big breakthroughs—broadly characterizing the repressor—in 1967. Given tenure and a 20-person laboratory in 1971, Ptashne has worked steadily since then to describe in molecular detail how the repressor functions, a task now completed.

His findings are contributing to the understanding of gene control in humans and may supply important clues about the basic cellular mechanisms that cause cancer. Ptashne has also discovered potentially salable gene-splicing techniques for the manufacture of interferon and other products. James Watson, co-discoverer of DNA, calls his work "one of the major accomplishments of molecular biology" in the decade.

Ptashne is also a gifted violinist. Because of stage fright he no longer performs for fellow scientists at conferences, but he plays every morning in his colonial mansion, a block from the labs.

He is a politically complex individual. At the

height of the United States' bombing of Vietnam in 1970, he traveled to Hanoi with Noam Chomsky to lecture on molecular biology. A year later he outmaneuvered Harvard's John Dunlop, later a labor negotiator and Cabinet member, to push through a faculty resolution condemning the war. But Ptashne became disillusioned with leftist politics in 1976 when he saw old allies deliberately distorting the facts in an attempt to halt work on recombinant DNA that Ptashne considered was not only safe but necessary.

Ptashne is considering the possibility of exploiting his discoveries in the hot biotechnology market. But his approach is cautious: "It's cruel," he says, "to tell people that cancer or viruses are going to be cured by this or that drug. We don't know what the hell is going to end up happening."

Ptashne is also unsure what direction his own research will take. "There isn't anything in biology that has galvanized me the way the repressor did. There's a moment of relief when something works out—it takes the monkey off your back. But then you're back in the soup again."

—John Sedgwick