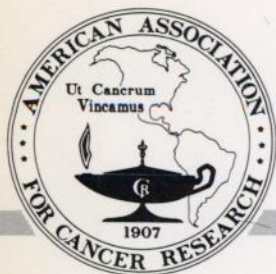


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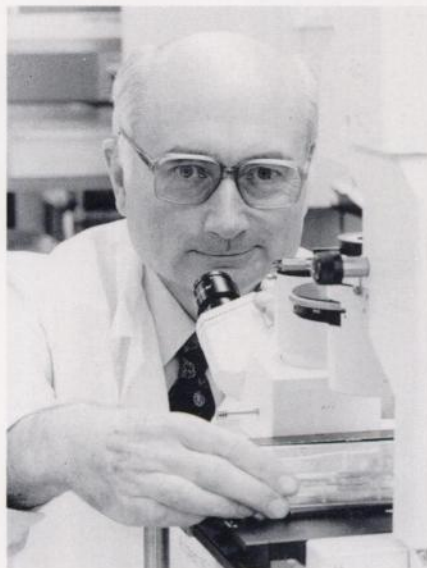
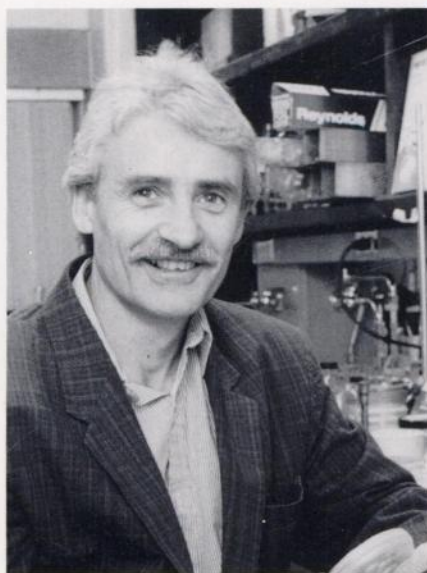


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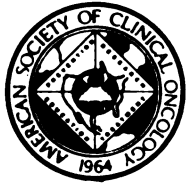


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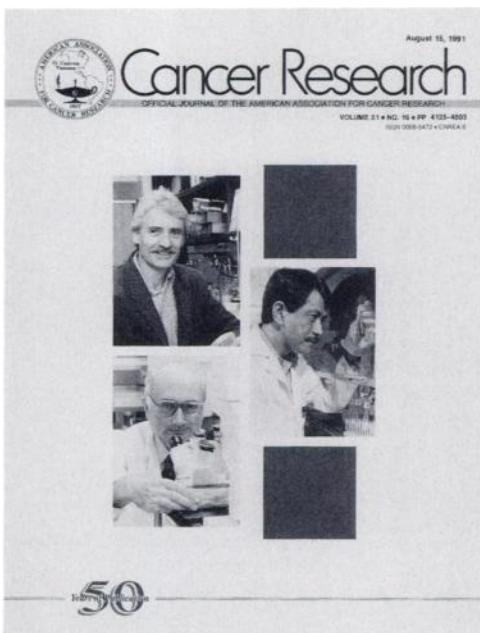
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COVER LEGEND



The General Motors Cancer Research Foundation recently announced the winners of its three prestigious prizes for outstanding contributions to cancer research. Each award comprises a gold medal, a 100,000 dollar cash award, and 30,000 dollars toward a conference reflecting the research interest of each awardee. Established in 1979 and now in their 13th year, these annual awards perpetuate the names of three illustrious pioneers of General Motors.

The Kettering Prize, named for Charles F. Kettering, inventor, former GM director and cofounder of the Sloan-Kettering Institute for Cancer Research, went to Victor Ling, Ph.D. (*pictured right*), for his pioneering contributions to knowledge on the mechanisms of drug resistance. He has identified a plasma membrane glycoprotein (P-glycoprotein) that prevents the action of otherwise effective anticancer drugs by “pumping” them out of cells. By treating with chemosensitizing “decoy” drugs which clog the pump, it is hoped that about 50% of tumors that are drug resistant can be made drug susceptible. One such drug which has created excitement is cyclosporin A, the well-known immunosuppressive properties of which are commonly used in organ transplantation. Other drugs such as verapamil and quinidine which act in this novel manner are also being tested clinically throughout the world. Reference to his work may be found in J. A. Endicott and V. Ling, *Ann. Rev. Biochem.*, 58: 137–171, 1989. Dr. Ling is Professor, Department of Medical Biophysics, and Head of Molecular and Structural Biology at the Ontario Cancer

Institute, Princess Margaret Hospital, University of Toronto. He earned his Ph.D. at the University of British Columbia with Gordon Dixon and did postdoctoral research with Fred Sanger at Cambridge University. His wife Lela is a molecular biologist at the University of Toronto, and they have an infant daughter, Grace Marie.

The Mott Prize, honoring the name of Charles S. Mott, philanthropist, a long-time GM director and financial expert, is awarded for recent contributions to understanding causes of and the underlying nature of cancer. The winner is Peter K. Vogt, Ph.D. (*bottom left*), Professor and Chairman, Department of Microbiology, University of California School of Medicine, Los Angeles. In three decades of study, Dr. Vogt has identified several key oncogenes, including *jun*, that produces a master switch protein that regulates an astonishing number of human genes. According to Carlo Croce of Jefferson Medical College, he is “truly a seminal figure in virology. From his laboratory has come a steady stream of discoveries that have opened new fields in cancer, virology, and cell biology.” Dr. Vogt was born in Czechoslovakia, received his Ph.D. from the University of Tubingen, and did postdoctoral research at the Max Planck Institute, Tubingen, and the University of California, Los Angeles.

Leland H. Hartwell, Ph.D. (*top left*), American Cancer Society Professor in the Department of Genetics, University of Washington, Seattle, is the winner of the Alfred P. Sloan Prize for outstanding basic science contributions to cancer research. It honors a cofounder of the Sloan-Kettering Institute and a management pioneer of GM.

Dr. Hartwell’s contribution was to initiate and develop a genetic analysis of the eukaryotic cell cycle using the yeast, *Saccharomyces cerevisiae*. Using temperature-sensitive mutants, he and his associates found many genes that function at only one point in the cell cycle. They showed that these mutants define a small number of dependent pathways of function in the cell cycle. They thus dissected the cell cycle into a series of dependent events. They recently discovered a control circuit that arrests mitosis in response to defects in cell replication and suggest that many such “checkpoints” exist in the mitotic cycle. They believe that these are responsible for the high fidelity of mitosis and that defects in these controls may play a role in the rapid evolution of tumor cells by genomic instability. References to his work may be found in L. Hartwell and T. Weinert, *Science* (Washington, DC), 246: 629–634, 1989, and T. A. Weinert and L. H. Hartwell, *Science* (Washington, DC), 241: 317–322, 1988.

Dr. Hartwell took his B.S. degree at Caltech and completed postdoctoral work at the Salk Institute under tutelage of Renato Dulbecco. He lives with his second wife in Seattle and has three grown children from his first marriage.

We thank the authors and the GM Foundation for photos and information.

Sidney Weinhouse