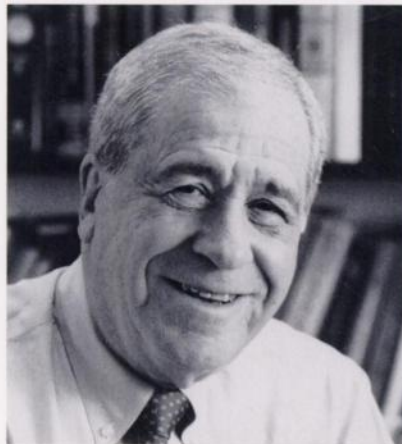
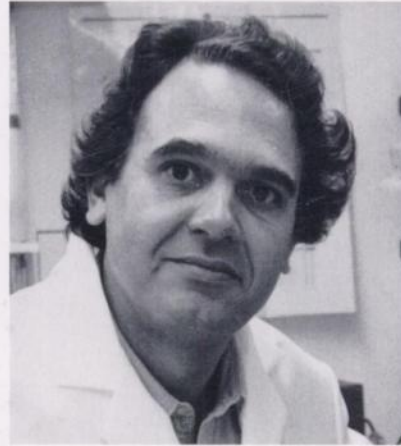




# Cancer Research

OFFICIAL JOURNAL OF THE AMERICAN ASSOCIATION FOR CANCER RESEARCH



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WE FIND PATHS WHERE  
OTHERS FAIL TO LOOK

At the Sandoz Cytokine Development Unit (CDU), we are exploring new paths of research and development and studying more options in disease treatment than were ever thought possible. Using the latest technology, the CDU is working to develop these treatments rapidly, with the same high-quality standards we have always upheld.

At the CDU, our commitment to research and development is unsurpassed. Sandoz created the

CDU as an independent unit, fueled by the dedication of specialized personnel. These highly skilled individuals have been brought together for a common goal—to explore new paths of therapy.



# CELL SIGNALLING AND CANCER TREATMENT

Sponsored by:  
**American Association for Cancer Research**  
**European Organisation for Research and Treatment of Cancer**  
**(Pharmacokinetics and Metabolism Group)**  
**British Association for Cancer Research**

December 5-9, 1993

El San Juan Hotel, San Juan, Puerto Rico



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**Garth Powis** / Tucson, AZ  
**Paul Workman** / Macclesfield, England

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**Sara A. Courtneidge** / Heidelberg, Germany    **Katherine A. Kennedy** / Washington, DC  
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**John A. Hickman** / Manchester, England      **Thomas R. Tritton** / Burlington, VT

## SCIENTIFIC PROGRAM

### Introduction

**Garth Powis** / Tucson, AZ  
**Allen I. Oliff** / West Point, PA

### Tyrosine Kinases and Inhibitors

**Lewis T. Williams** / San Francisco, CA  
**Alexander Levitzki** / Jerusalem, Israel  
**Alex Matter** / Basel, Switzerland

### Serine/Threonine Kinases and Inhibitors

**Peter J. Parker** / London, England  
**Hans H. Grunicke** / Innsbruck, Austria

### GTP Binding Proteins

**Alan K. Hall** / London, England  
**Frank McCormick** / Richmond, CA  
**Jay Gibbs** / West Point, PA

### Domain Binding and Inhibition

**Sara A. Courtneidge** / Heidelberg, Germany

### Lipid Signalling

**Lewis C. Cantley** / Boston, MA  
**Alan P. Kozikowski** / Rochester, MN  
**Paul Workman** / Macclesfield, England  
**Garth Powis** / Tucson, AZ

### Modulation of Signalling in Combination Chemotherapy

**Thomas R. Tritton** / Burlington, VT  
**John S. Lazo** / Pittsburgh, PA  
**Stephen B. Howell** / La Jolla, CA

### Signalling and the Cell Cycle

**Laurent Meijer** / Roscoff, France  
**Caroline Dive** / Manchester, England  
**Michael J. Morin** / Groton, CT  
**Doris L. Slate** / Palo Alto, CA  
**Adrian L. Harris** / Oxford, England

### Gene Targeting

**Stanley T. Crooke** / Carlsbad, CA  
**Michael E. Hogan** / Houston, TX

### Summary

**Paul Workman** / Macclesfield, England

*Applicants are encouraged to submit abstracts  
for poster presentation.*

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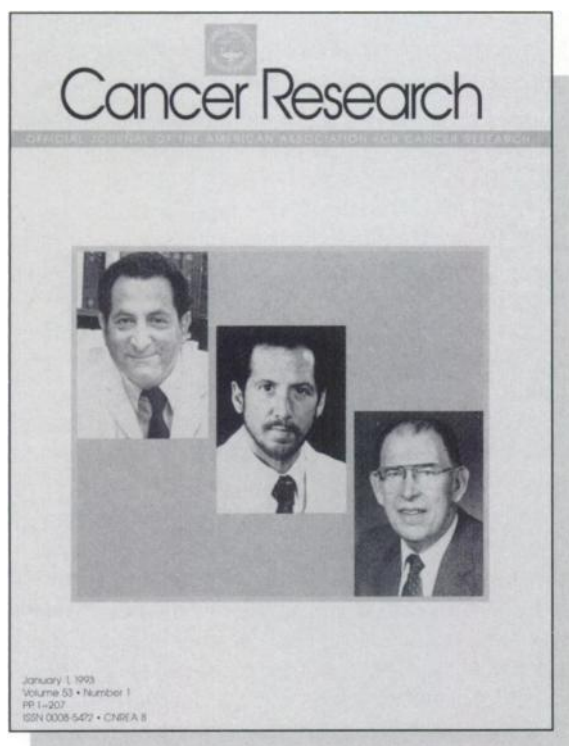
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**Carlo M. Croce, M.D., Editor-in-Chief**

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# Molecular Approaches to Cancer Immunotherapy

November 7-11, 1993  
The Grove Park Inn, Asheville, North Carolina



CONFERENCE CHAIRPERSON

**Ralph A. Reisfeld** / La Jolla, CA

SCIENTIFIC PROGRAM

## Keynote Address

**Giorgio Trinchieri** / Philadelphia, PA

## Monoclonal Antibodies for Tumor Therapy

**Alan N. Houghton** / New York, NY

**Albert F. LoBuglio** / Birmingham, AL

**Ira Pastan** / Bethesda, MD

**David A. Scheinberg** / New York, NY

## Genetically Engineered Antibodies

**Stephen D. Gillies** / Lexington, MA

**Jeffrey Schlom** / Bethesda, MD

**Richard P. Junghans** / Boston, MA

**Sherie L. Morrison** / Los Angeles, CA

**Clive Woodhouse** / Mountain View, CA

## Gene Therapy of Cancer

**James J. Mulé** / Palo Alto, CA

**Drew M. Pardoll** / Baltimore, MD

**David T. Curiel** / Chapel Hill, NC

**Patrick Hwu** / Bethesda, MD

**Elizabeth Jaffee** / Baltimore, MD

## Cytokines in Tumor Therapy

**Steven Gillis** / Seattle, WA

**Roland Mertelsmann** / Freiburg, Germany

**Ronald Levy** / Stanford, CA

**Terry Strom** / Boston, MA

## Tumor Antigens Recognized by T-Cells

**Olivera J. Finn** / Pittsburgh, PA

**Per A. Peterson** / La Jolla, CA

**Martin A. Cheever** / Seattle, WA

**Michael T. Lotze** / Pittsburgh, PA

## Antibodies as Immunogens

**Soldano Ferrone** / Valhalla, NY

**Dorothee Herlyn** / Philadelphia, PA

**Kenneth Foon** / Lexington, KY

**Alan N. Houghton** / New York, NY

## Future of Cancer Immunotherapy

**Isaiah J. Fidler** / Houston, TX

**Paul M. Sondel** / Madison, WI

**Irwin D. Bernstein** / Seattle, WA

**Eugenie S. Kleinerman** / Houston, TX

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# INTERACTIONS OF CANCER SUSCEPTIBILITY GENES AND ENVIRONMENTAL CARCINOGENS

Joint Meeting Organized by the  
American Association for Cancer Research (AACR)  
and the International Agency for Research on Cancer (IARC)

November 9-13, 1993  
Lyon, France



CONFERENCE CHAIRPERSONS  
Frederick P. Li / Boston, USA  
Ruggero Montesano / Lyon, France



## PROGRAM COMMITTEE

Kari K. Alitalo / Helsinki, Finland  
J. Carl Barrett / Research Triangle Park, USA  
Valerie Beral / Oxford, England  
Dirk Bootsma / Rotterdam, The Netherlands  
Curtis C. Harris / Bethesda, USA  
Henry C. Pitot / Madison, USA

Bruce A. J. Ponder / Cambridge, England  
Carmen Sapienza / La Jolla, USA  
Takashi Sugimura / Tokyo, Japan  
Lorenzo Tomatis / Lyon, France  
Lee W. Wattenberg / Minneapolis, USA  
I. Bernard Weinstein / New York, USA

## SCIENTIFIC PROGRAM

### Introductory Lectures

Curtis C. Harris / Bethesda, USA  
Lorenzo Tomatis / Lyon, France  
Lee W. Wattenberg / Minneapolis, USA  
Manfred F. Rajewsky / Essen, Germany

### Genetic Instability

Kari K. Alitalo / Helsinki, Finland  
T. Heidmann / Paris, France  
Thea D. Tlsty / Chapel Hill, USA

### Experimental Models of Genetic Susceptibility

J. Carl Barrett / Research Triangle Park, USA  
Henry C. Pitot / Madison, USA  
Bernard M. Mechler / Heidelberg, Germany

### DNA Damage and Repair

Dirk Bootsma / Rotterdam, The Netherlands  
John M. Essigmann / Cambridge, USA  
Mutsuo Sekiguchi / Fukuoka, Japan

### Mechanisms of Transgenerational Carcinogenesis

Carmen Sapienza / La Jolla, USA  
Ulrike Wintersberger / Vienna, Austria  
David Malkin / Toronto, Canada  
Christopher J. Kemp / Glasgow, Scotland

### Human Cancers

Frederick P. Li / Boston, USA  
Valerie Beral / Oxford, England  
Bruce A. J. Ponder / Cambridge, England  
Neil E. Caporaso / Bethesda, USA  
Gilbert M. Lenoir / Lyon, France

### Markers of Individual Exposure

Ruggero Montesano / Lyon, France  
Peter A. Cerutti / Epalinges, Switzerland

### Opportunities for Prevention

I. Bernard Weinstein / New York, USA

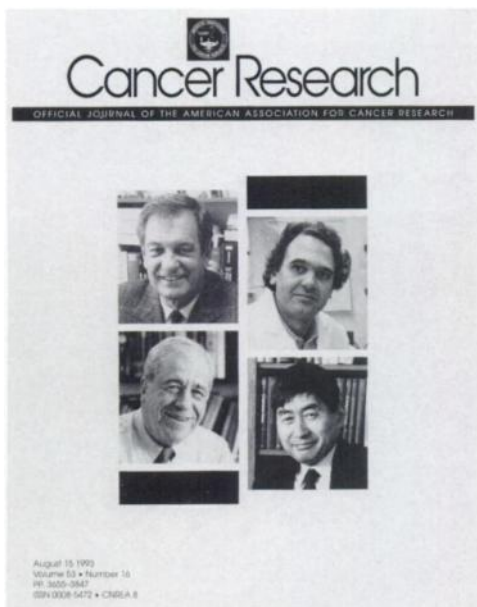
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# COVER LEGEND



We are pleased to present on the cover of this issue of *Cancer Research* the four winners of the three 1993 General Motors Cancer Research Awards, two of whom, Drs. Gianni Bonadonna (*upper left*) and Bernard Fisher (*lower left*), were corecipients of the Charles F. Kettering Prize. Considering the importance of their contributions, it is not surprising that the two were also corecipients of the Bristol-Myers Squibb Awards for 1993. Because of an unexpected problem in scheduling, Dr. Bonadonna was only mentioned briefly as a coawardee of the Bristol-Myers Squibb Prize in the cover legend to the May 15, 1993 issue of the journal, which featured Bernard Fisher. However, Dr. Bonadonna was recognized earlier in our April 1, 1992 issue as an American Cancer Society Medal of Honor awardee for 1991 and the recipient of the Rosenthal Award of the AACR in November 1982.

Working on opposite sides of the Atlantic, Drs. Bonadonna and Fisher both made their major contributions to the alleviation of much of the suffering, disfigurement, and emotional stress of radical mastectomy in human breast cancer. Dr. Bonadonna contributed benchmark developments in combination chemotherapy, now widely applied throughout the world. His first combination, CMF (cyclophosphamide, methotrexate, and 5-fluorouracil), demonstrated significantly longer survival rates of breast cancer over surgery alone. Improved combinations, such as ABVD (Adriamycin, bleomycin, vinblastine, and dacarbazine), were more effective in MOPP (mechlorethamine, Oncovin, procarbazine, and prednisolone)-resistant Hodgkin's disease. He has also shown more recently (*J. Clin. Oncol.*, 7: 1380-1397, 1989; *J. Natl. Cancer Inst.*, 82: 1539-1545, 1990) that primary (preventive) chemotherapy can be effective for conservative surgery in women who would otherwise be candidates for mastectomy.

After graduation from the Milan School of Medicine in 1959 and postdoctoral experience at Sloan-Kettering, Dr. Bonadonna returned to the Milan Tumor Institute, where he now is Director of the Division of Medical Oncology. As mentioned previously, he received the Rosenthal Award from the AACR in 1982.

Dr. Fisher, Distinguished Service Professor of the University of Pittsburgh and chairman of the National Surgical Adjuvant Breast and Bowel Project, shares the 1993 Kettering Prize for a brilliant career, which showed that breast cancer

can be treatable with minimal surgery. He also contributed to the justification and popularity of adjuvant chemotherapy with minimal surgery, which has now become a key part of breast cancer treatment (*Cancer Research* cover legend, May 15, 1993). His accomplishments have greatly minimized the physical and emotional trauma of the patient subjected to radical mastectomy. Dr. Fisher is now involved in a project entailing a massive tamoxifen prevention trial for breast cancer, which is under way in several hundred centers in the United States and Canada.

Carlo M. Croce, M.D., (*upper right*), Director of the Jefferson Cancer Institute and of the Jefferson Cancer Center in Philadelphia, PA, is receiving the Charles S. Mott prize for outstanding achievements in unraveling the molecular mechanisms involved in the malignant transformation of cells of the immune system. In 20 years of research at the Wistar Institute and now as Director of the Jefferson Cancer Institute of the Thomas Jefferson Medical College, he has identified several key chromosomal rearrangements leading to the activation of oncogenes responsible for leukemia and lymphoma. He has deciphered the molecular mechanisms of a number of chromosomal translocations leading to Burkitt's lymphoma, follicular lymphoma, mantle cell lymphoma, and acute lymphocytic leukemia. In addition, Dr. Croce has shown the involvement of the genes for the T-cell receptors in the rearrangements in T-cell neoplasms. Among his impressive list of accomplishments in molecular genetics are the translocation of the *c-myc* oncogene triggering Burkitt's lymphoma and the discovery of the *bcl-1* and *bcl-2* oncogenes involved in certain low-grade leukemias and lymphomas. These probes for two oncogenes are used for the diagnosing and monitoring of these neoplasms.

For his critical contributions to the molecular genetics of human cancer, he was awarded an Outstanding Investigatorship of the NIH in 1985, and this has been renewed in the amount of \$15 million for the next 7 years. He lives in center city Philadelphia with his 13-year-old son and is a collector of art of Italian masters. Among his many outside activities, Dr. Croce is Editor-in-Chief of *Cancer Research*.

Hidesaburo Hanafusa, Ph.D. (*lower right*), of The Rockefeller University, New York, is being awarded the Alfred P. Sloan Prize for the discovery of the singular role of damaged cellular oncogenes in cancer. He discovered and characterized the *crk* oncogene from a tumor-causing chicken virus. The protein encoded by this oncogene has two molecular structures, SH-2 and SH-3, which are responsible for its oncogenic activity and are also products of many human oncogenes. These proteins are involved in signal transduction, responsible for proper cell regulation. Dr. Hanafusa made the revolutionary discovery that the Rous virus, when stripped of its *src* oncogene, could still maintain its malignant property by purloining the infected cells' own *src* oncogene. This extraordinary discovery conclusively demonstrated that oncogenes occur generally as normal components of mammalian cells until switched on to malignancy and are not confined to an infecting virus. As stated by Peter Vogt, the 1991 Mott Prize winner, "This early discovery by Dr. Hanafusa was a quantum leap for cancer research."

A recipient of the Clowes Award from the AACR in 1986, Dr. Hanafusa resides in New York City with his wife, Teruko Inoue, a senior research associate at The Rockefeller University.

We are grateful to Molino & Associates, Inc., for the photograph and much of the information presented in this legend.

Sidney Weinhouse