CANCER RESEARCH

SIDNEY WEINHOUSE, Editor
MARGARET FOTI, Managing Editor

Editorial Assistants

TINA ANTONINI
BARBARA CANTARELLA
JILL FILLER

Associate Editors

Renato Baserga
Nathaniel I. Berlin
John J. Bieseke
Joseph H. Burchenal
Harris Busch
Kelly H. Clifton
Maimon M. Cohen
Albert J. Dalton
Eugene D. Day
Vittorio Defendi
Kenneth B. DeOme
Joseph A. DiPaolo
Emmanuel Farber
Gilbert H. Friedell
Harry V. Gelboin
Abraham Goldin
Karl E. Hellström
Russell Hilf
Erich Hirschiherg
Robert B. Hurlbert
Werner H. Kirsten
Saul Kit
Marvin Kuschner
Lloyd W. Law
Gerald A. LePage
Hermann Lisco
Robert Love
Nathan Mantel
Joseph L. Melnick
Dan H. Moore
Charles A. Nichol
Fred S. Philips
Henry C. Pitot
David P. Rall
Herbert J. Rapp
R. Wayne Rundles

CREED W. ABELL
SAMUEL ABRAHAM
JOSEPH C. ARCOS
JOHN C. BAILAR, III
M. EARL BALIS
W. RAY BRYAN
PAUL CALABRESI
WALLACE H. CLARK
BAYARD D. CLARKSON
ROGER DAOUST
CLYDE J. DAVE
SHELDON M. EPSTEIN
ALEXANDER FEFER
EMIL FREI, III
PHIL GOLD
ROBERT A. GOOD
HIDESABURO HANAFUSA
THEODORE S. HAUSCHKA
CHARLES C. IRVING
IRVING S. JOHNSON
NATHAN KALISS
ALBERT S. KAPLAN
MONTAGUE LANE

ELIZABETH H. LEDUC
MORTIMER L. MENDELSOHN
ENRICO MIICH
JOHN B. MOLONEY
DONALD L. MORTON
PHILIP O'B. MONTGOMERY, JR.
HERBERT F. OETTGEN
HARVEY M. PATT
G. BARRY PIERCE
ALAN S. RABSON
JAY S. ROTH

KATHERINE K. SANFORD
EMMA SHELTON
M. MICHAEL SIGEL
EDWARD A. SMUCKLER
SAM SOROF
HERMAN D. SUIT
WAACLAW SZYBALSKI
VICTOR A. TRIOLI
BENJAMIN L. VAN DUUREN
EUGENE J. VAN SCOTT
ERNST WYDER
WASLEY D. YUSHOK

CANCER RESEARCH is sponsored by the American Association for Cancer Research, Inc.; the American Cancer Society, Inc.; The Jane Coffin Childs Memorial Fund for Medical Research; the National Cancer Institute, United States Public Health Service; the Elsa U. Pardee Foundation; and the Damon Runyon Memorial Fund for Cancer Research, Inc.

NOTICE TO MEMBERS OF THE AMERICAN ASSOCIATION FOR CANCER RESEARCH

Officers for 1971-1972

President: EMIL FREI, III, The University of Texas M. D. Anderson Hospital and Tumor Institute, Houston, Texas 77025
Vice President: EMMANUEL FARBER, Fels Research Institute, Temple University School of Medicine, Philadelphia, Pennsylvania 19140

Secretary-Treasurer: HUGH J. CREECH, Institute for Cancer Research, Fox Chase, Philadelphia, Pennsylvania 19111

The annual dues of active members of the American Association for Cancer Research include a subscription to the Journal CANCER RESEARCH. The regular annual subscription price to CANCER RESEARCH for members of the Association is $12.50 per annual volume. Payment of dues and changes of address of members of the Association should be sent promptly to Dr. Creech.

Papers submitted for publication and all other communications for the attention of the editor should be sent to Dr. Sidney Weinhouse, Editor, CANCER RESEARCH, Fels Research Institute, Temple University School of Medicine, Philadelphia, Pennsylvania 19140. Telephone: Area Code 215-BA 3-2150.

NOTICE TO GENERAL SUBSCRIBERS

CANCER RESEARCH is published monthly, one volume per year, for Cancer Research, Inc., by The Williams & Wilkins Company, 428 E. Preston St., Baltimore, Maryland 21202. Subscriptions include the Proceedings of the American Association for Cancer Research issued in March of each year. Except for members of the American Association for Cancer Research, all subscriptions are payable in advance to the publisher of the Journal, The Williams & Wilkins Co., to which all business communications, remittances (in United States currency or its equivalent), and subscription orders should be sent. Non-members of the American Association for Cancer Research, Inc., may subscribe to the Journal CANCER RESEARCH at the rate of $50.00 per annual volume, including postage, beginning with the 1971 issues. When available, single copies will be sold for $7.00. Notify the publisher of changes of address 60 days in advance, giving both the old and new addresses. Copies undeliverable because of address changes will be destroyed.

BACK ISSUES OF THE JOURNAL

Copies of back stock of the Journal CANCER RESEARCH for the two years preceding the current year may be ordered from The Williams & Wilkins Co., address above. All earlier issues may be obtained from Walter J. Johnson, Inc., 111 Fifth Ave., New York, New York 10003. Copies of Part 2 (The Cancer Chemotherapy Screening Data Supplements) may be obtained from the Cancer Chemotherapy National Service Center, Bethesda, Maryland 20014.

Second-class postage paid at Baltimore, Maryland.
Copyright 1971 by Cancer Research, Inc.
AMERICAN ASSOCIATION FOR CANCER RESEARCH, INC.

OFFICERS • April 1971—April 1972

President
EMIL FREI, III

Vice President
EMMANUEL FARBER

Secretary-Treasurer
HUGH J. CREECH

BOARD OF DIRECTORS

Term Expiring April 1972
EMIL FREI, III
CHARLES A. NICHOL

Term Expiring April 1973
EMMANUEL FARBER
PETER C. NOWELL

Term Expiring April 1974
MICHAEL J. BRENNAN
ERICH HIRSCHBERG

Ex Officio
HUGH J. CREECH

HENRY C. PITOT
C. CHESTER STOCK

FRANK J. RAUSCHER, JR.
JOHN J. TRENTIN

MICHAEL B. SHIMKIN
JANE C. WRIGHT

Note to members of the Association—Changes of address should be sent promptly to Dr. Hugh J. Creech, Institute for Cancer Research, Fox Chase, Philadelphia, Pennsylvania 19111. This will enable the Secretary to maintain an up-to-date file and will insure receipt of the journal by active members of the Association.

Copyright 1971 by Cancer Research, Inc.