## CANCER RESEARCH

**Editor**

Harold P. Rusch, Editor

**Associate Editors**

Emmanuel Farber, James F. Holland, Joseph Letter, Elizabeth C. Miller, Ilse L. Riegel, Managing Editor

Frederick S. Philips, Maurice M. Rapport, Sidney Weinhouse, Herbert, Charles H. Miller, David Foley, Technical Editor

This journal is sponsored by The American Association for Cancer Research, Inc.; The Anna Fuller Fund, The Jane Coffin Childs Memorial Fund for Medical Research; The Elisa U. Pardee Foundation; The American Cancer Society; the National Cancer Institute, Public Health Service; and the Damon Runyon Memorial Fund for Cancer Research, Inc.

### Editorial Advisory Board

| John J. Bieseke | Abraham Goldin | David Pressman |
| R. K. Boutwell | R. E. Handschumacher | Vincent E. Price |
| George E. Boxer | W. E. Heston | Katherine Sanford |
| Harris Busch | Herbert M. Hirsch | Frank M. Schabel, Jr. |
| Albert J. Dalton | T. C. Hsu | Robert L. Straube |
| Eugene D. Day | Saul Kit | H. Earle Swim |
| G. E. Foley | Nathan Mantel | Albert Tannenbaum |
| Jacob Fulth | Charles A. Nichol | Arthur C. Upton |
| Alfred Gellhorn | Alex B. Novikoff | John H. Weisburger |

### NOTICE TO MEMBERS OF THE AMERICAN ASSOCIATION FOR CANCER RESEARCH

**Officers for 1964-65**

- **President:** Paul C. Zamcnik, Massachusetts General Hospital, Boston, Mass.
- **Vice-President:** Joseph H. Burchenal, Sloan-Kettering Institute for Cancer Research, New York, N. Y.
- **Secretary-Treasurer:** Hugh J. Creech, Institute for Cancer Research, Fox Chase, Philadelphia, Pa., 19111

The annual dues of active members of the American Association for Cancer Research include a subscription to the journal CANCER RESEARCH. Payment of dues and changes of address of members of the Association should be sent promptly to Dr. Creech for recording in the files of the Association and also to insure receipt of the Journal.

### CANCER RESEARCH

*is published monthly (except March) for Cancer Research, Inc., by The Williams & Wilkins Co., 428 E. Preston St., Baltimore, Md., 21202. Subscriptions are payable in advance. Subscriptions include Proceedings of American Association for Cancer Research, published in March each year. Subscription rates in U.S.A. and possessions: 1 year, $15.00; 2 years, $30.00; 3 years, $45.00. Canada: 1 year, $15.50; 2 years, $31.00; 3 years, $46.50. All other countries and Pan American Postal Union: 1 year, $16.00; 2 years, $32.00; 3 years, $48.00. Single copies: $2.50. Subscriptions will be entered on a volume basis only.

Business communications, remittances (in United States currency or its equivalent), and subscriptions should be addressed to The Williams & Wilkins Co., 428 E. Preston St., Baltimore, Md., 21202. All other communications should be addressed to Dr. Michael B. Shimkin, Cancer Research Editorial Office, Fels Research Institute, Temple University Medical School, Philadelphia, Pa., 19140.

Claims for missing numbers should be made within the month following the regular month of publication. The publishers expect to supply missing numbers free only when losses have been sustained in transit and when the reserve stock will permit.

No responsibility is accepted by the Editors, by Cancer Research, Inc., or by the publishers of CANCER RESEARCH for opinions expressed by contributors.

**Notice to Subscribers:** changes of address should be reported to the publisher and local postmaster immediately. All changes of address should provide both the old and the new address. Allow six weeks for the change.

Second-class postage paid at Baltimore, Maryland.

Copyright 1964 by Cancer Research, Inc.