

# Instructions for Authors

## Scope

*Cancer Epidemiology, Biomarkers & Prevention* publishes original research on cancer causation and prevention in humans. The following topics are of special interest: descriptive, analytical, biochemical and molecular epidemiology; the use of biomarkers to study the neoplastic and preneoplastic processes in humans; chemoprevention and other types of prevention trials; and the role of behavioral factors in cancer etiology and prevention.

Particular attention will be given to the identification of factors associated with various aspects of the carcinogenic process, including genetic susceptibility, host factors, infectious agents, chemical and physical carcinogens, environmental contaminants, dietary components and behavioral factors such as tobacco use and sun exposure.

Besides welcoming manuscripts that address individual subjects in any of the three disciplines, the Editors encourage the submission of manuscripts with an interdisciplinary approach.

## Contents

- Original research articles
- Invited editorials
- Selected review articles
- Short communications
- Letters to the editor
- Meeting reports
- AACR and ASPO news

## Editorial Policy

When a manuscript is received for consideration, the Editors assume that no similar paper has been or will be submitted for publication elsewhere. Further, it is understood that all authors listed on a manuscript have agreed to its submission. Upon acceptance, authors must transfer copyright to the American Association for Cancer Research, Inc., the publisher and copyright owner of the journal, prior to publication. The Editors endorse the principles embodied in the Declaration of Helsinki and expect that all investigations involving humans will have been performed in accordance with these principles. A copy of the Declaration is available from the American Medical Association, 535 North Dearborn Street, Chicago, IL 60610.

## Manuscript Submission

**Mail manuscripts directly to Dr. Pelayo Correa, Editor-in-Chief.** Submit four original sets (not photocopies) of illustrations along with four copies of the manuscript. Illustrations will be returned to the author if the paper is not accepted for publication. If a manuscript is closely related to papers that are in press or have been submitted elsewhere, please provide copies of those papers with your submission. The publisher welcomes disks to expedite production of accepted manuscripts. If your paper is accepted for publication, you will receive instructions and a form for disk submission. Hard copy of the manuscript must accompany your disk. FAX transmission and overnight delivery service will be used to expedite review and publication.

## Format

Manuscripts must be written succinctly in clear, grammatical English. Define abbreviations in an inclusive footnote to the text. Double-space on 8 1/2 × 11-inch paper. Dot-matrix printing is not acceptable. The format is as follows:

1. Title page, including title, authors, and affiliations;
2. A running title of fewer than 50 characters;
3. Text, arranged in this order: Abstract (not more than 250 words), Introduction, Materials and Methods, Results, Discussion, Acknowledgments, References;
4. Footnotes, on a page separate from the text. Designate footnotes consecutively with superscript Arabic numerals;

5. Tables, on pages separate from the text, with descriptive titles and/or legends;

6. Figure legends, on pages separate from the text. Define all symbols and include staining for halftones, where applicable.

## References

Include only those articles that have been published or are in press. Unpublished data or personal communications must be cited as footnotes to the text. Personal communications should be substantiated by a letter of permission.

Number references in the order of their first mention in the text. Cite only the number assigned to the reference. References must be double-spaced.

Sample references:

1. Fontham, E. T. H., Correa, P., Wu-Williams, A., Reynolds, P., Greenberg, R. S., Buffler, P. A., Chen, V. W., Boyd, P., Alterman, T., Austin, D. F., Liff, J., and Greenberg, S. D. Lung cancer in nonsmoking women: A multicenter case-control study. *Cancer Epidemiol., Biomarkers & Prev.*, 1: 35-43, 1991.
2. Preston, D. L., Kopecky, K. J., and Kato, H. Analysis of mortality and disease incidence among atomic bomb survivors. In: W. J. Blot, Y. Hirayama, and D. G. Hoel (eds.), *Statistical Methods in Cancer Epidemiology*. Hiroshima, Japan: Radiation Effects Research Foundation, 1985.

## Illustrations

Provide four original sets of illustrations (whether line-cut drawings or halftones). Label each figure in pencil on the reverse side with the first author's name, figure number, and an arrow indicating top of figure. Letters and numbers on illustrations should not be larger than 12-point type. All illustrations will be published at a width of approximately 3 inches (8 cm) unless the author requests a greater width. Use tissue overlays to indicate important areas of the photographs that must be reproduced with the greatest fidelity.

The complete expense of reproducing color photographs will be charged to the author. Submit color illustrations on flexible backing.

## Proofs

Page proofs must be returned to the office of the American Association for Cancer Research within 48 hours of receipt. Return proofs by overnight mail. **Proofs not received by the deadline will be published without the authors' corrections.** Accepted manuscripts are regarded as final copy and should not be altered substantially in proof. Authors will be charged for all changes in proof not due to printer's errors. Each author's alteration in any line of text costs approximately \$6.10. Lengthy insertions of entire sentences or paragraphs are billed at different rates depending upon the complexity of the alterations.

## For More Information, Contact:

Dr. Pelayo Correa, Editor-in-Chief, CEBP, Department of Pathology, Louisiana State University Medical Center, 1901 Perdido Street, New Orleans, LA 70112-1393. Telephones: (504)529-2848; (504)568-6035; FAX: (504)529-2849.

## Or:

Publications Department, American Association for Cancer Research, Public Ledger Building, 620 Chestnut Street, Suite 816, Philadelphia, PA 19106-3483. Telephone: (215)440-9300; FAX: (215)440-9355.



## AMERICAN ASSOCIATION FOR CANCER RESEARCH SCIENTIFIC CONFERENCES: 1993-1994

---

**APRIL 13-17, 1993**

***Genetic Control of Cell Growth***

Laureates Conference

General Motors

Cancer Research Foundation

Chairpersons: Leland H. Hartwell, Seattle, WA;  
Peter K. Vogt, Los Angeles, CA; George F.  
Vande Woude, Frederick, MD  
San Luis Hotel, Galveston, TX

**MAY 19-22, 1993**

***84th Annual Meeting***

Chairperson: Michael B. Sporn, Bethesda, MD  
Orange County Convention Center, Orlando, FL

**OCTOBER 17-21, 1993**

***Cell Death and Cancer***

Chairperson: Alan R. Eastman, Hanover, NH  
Chatham Bars Inn, Chatham (Cape Cod), MA

**NOVEMBER 7-11, 1993**

***Molecular Approaches to  
Cancer Immunotherapy***

Chairperson: Ralph A. Reisfeld, San Diego, CA  
Grove Park Inn, Asheville, NC

**NOVEMBER 9-13, 1993**

***Interactions of Cancer Susceptibility  
Genes and Environmental Carcinogenesis***

Joint Meeting with International Agency for  
Research on Cancer

Chairpersons: Frederick P. Li, Boston, MA, and  
Ruggero Montesano, Lyon, France  
IARC, Lyon, France

**DECEMBER 5-9, 1993**

***Cell Signalling and Cancer Treatment***

Joint Meeting with British Association for  
Cancer Research and European  
Organisation for Research and Treatment  
of Cancer (PAM Group)

Chairpersons: Garth Powis, Tucson, AZ;  
Paul Workman, Glasgow, Scotland  
El San Juan Hotel, San Juan, PR

**JANUARY 17-22, 1994**

***Risk Assessment in Environmental  
Carcinogenesis***

Chairpersons: Philip C. Hanawalt, Stanford, CA;  
James A. Swenberg, Chapel Hill, NC  
Whistler Resort and Conference Center, Whistler,  
B.C., Canada

**JANUARY 31-FEBRUARY 5, 1994**

***Molecular Genetics of Progression  
and Metastasis***

Chairperson: Lance A. Liotta, Bethesda, MD  
Big Sky Resort, Big Sky, MT

**FEBRUARY 19-24, 1994**

***Genomic Instability and Cancer***

Chairpersons: Thea D. Tlsty and Lawrence A.  
Loeb  
Banff Springs Hotel, Banff, Alberta, Canada

**MARCH 5-11, 1994**

***Growth Factors, Development, and Cancer***

Joint Meeting with Friedrich-Miescher Institut  
Chairpersons: Harold L. Moses and Bernd  
Groner  
Congress Center, Interlaken, Switzerland

**APRIL 10-13, 1994**

***85th Annual Meeting***

Chairperson: Karen S.H. Antman, Boston, MA  
Moscone Center, San Francisco, CA

---

AACR members will receive brochures on the  
above special conferences as soon as they are  
available. Nonmembers should call or write:

American Association for Cancer Research  
Public Ledger Building  
620 Chestnut Street, Suite 816  
Philadelphia, PA 19106-3483  
215-440-9300 • 215-440-9313 (FAX)



# AMERICAN ASSOCIATION FOR CANCER RESEARCH

## GUIDELINES FOR APPLICATION FOR ACTIVE AND CORRESPONDING MEMBERSHIP

### BENEFITS OF MEMBERSHIP

The American Association for Cancer Research (AACR) is a scientific society consisting of laboratory and clinical cancer researchers. It was founded in 1907 "to bring together active investigators of the cancer problem for presentation and discussion of new or significant observations; and to foster research in cancer and other phenomena of growth." Members of the AACR enjoy the following benefits:

1. subscriptions to the journals *Cancer Research*, *Cell Growth & Differentiation*, and *Cancer Epidemiology, Biomarkers & Prevention* at the reduced member rate;
2. the privilege of sponsoring an abstract for presentation at the AACR annual meeting;
3. an advance copy of the Program and *Proceedings* pertaining to each annual meeting;
4. a reduced registration rate at all scientific meetings;
5. early notification of events in the AACR's series of special conferences;
6. subscriptions to any future AACR journals at reduced member rates;
7. reduced rates for the AACR Employment Register;
8. the benefit of AACR's public education activities;
9. the receipt of AACR newsletters, meeting announcements, and an up-to-date membership directory.

### QUALIFICATIONS FOR MEMBERSHIP

Active membership in the AACR is open to investigators who live in the Americas, and who have conducted two years of meritorious research that has resulted in publications relevant to cancer. If a candidate is working in a research area not directly related to the cancer field but has conducted research of exceptional scientific merit, he or she may also qualify for membership.

Corresponding membership is open to qualified persons who are not residents of the Americas. The requirements for corresponding membership are the same as those for active membership. Visiting scientists from outside the Americas who intend to return to their countries of origin soon after submitting their applications should apply for corresponding membership. All other individuals should apply for active membership and transfer to corresponding status at a later date if they should leave the Americas.

### PROCEDURES FOR APPLICATION

There are three deadlines for receipt of a membership application: March 1, July 1, and October 1 of each year. The Membership Committee will review all complete applications for active membership that have been received by these deadlines and will submit recommendations on each candidate to the Board of Directors which formally elects all members. The same procedure is followed by the Special Memberships Committee which receives applications for corresponding membership. Candidates will be notified according to the following schedule:

Receipt of Application in AACR Office	Notification of Candidate
March 1	May
July 1	September
October 1	December

A complete application consists of the following material:

1. 6 copies of the form on the opposite side of this page, with all requested information provided.

2. 5 copies of the candidate's most current curriculum vitae and bibliography.
3. 5 copies of a letter of recommendation from a nominator who is an active, emeritus, or honorary member of the AACR (at least one copy must be a signed, original letter). This letter should describe the candidate's achievements in laboratory research, clinical investigations, or epidemiological research, and it should affirm that this research adheres to accepted ethical standards.—OR—The nominator may supply the responses requested at the bottom of the application form in the section entitled "STATEMENT OF SUPPORT" (at least one copy of the form must be the signed original).
4. 5 copies of a letter of recommendation as described in Item 3 above from a seconder who is an active, emeritus, or honorary member of the AACR (at least one copy must be a signed, original letter).—OR—The seconder may supply the responses requested at the bottom of the application form in the section entitled "STATEMENT OF SUPPORT" (at least one copy of the form must be the signed original).
5. 5 reprints of each of two publications on which the candidate appears as author.

All material should be collated into five complete sets with the original application form as a covering document and sent to the address given below. Questions regarding procedures for membership application may also be directed to the following address:

American Association for Cancer Research  
Public Ledger Building  
620 Chestnut St.  
Suite 816  
Philadelphia, PA 19106-3483  
215/440-9300

### RESPONSIBILITIES OF MEMBERSHIP

Candidates should be aware of the following responsibilities of membership in the AACR. Active members must pay annual dues, a major portion of which is designated for a subscription to at least one of the AACR's publications. Newly elected members of the AACR who have already purchased subscriptions to *Cancer Research*, *Cell Growth & Differentiation*, or *Cancer Epidemiology, Biomarkers & Prevention* at the higher, nonmember rate will receive reimbursement of the unused portion of those subscriptions once their first year's membership dues are paid in full.

All corresponding members elected after May 23, 1985, are required to pay an annual assessment in lieu of dues. This assessment, which is equivalent to that portion of the regular dues that pertains to support of activities other than publications, is imposed to defray the cost of sending AACR publications to members outside the Americas. Corresponding members may, if they wish, subscribe to *Cancer Research*, *Cell Growth & Differentiation*, or *Cancer Epidemiology, Biomarkers & Prevention* at the reduced member rate.

Applicants elected in May will be responsible for payment of that year's dues; applicants elected in September and December will pay dues in the following year. Applicants elected in May and September will be eligible to sponsor an abstract for the next annual meeting. Every effort will be made to afford the same opportunity to applicants elected in December.

Margaret Foti  
Executive Director

# AMERICAN ASSOCIATION FOR CANCER RESEARCH, INC.

Public Ledger Building • 620 Chestnut St. • Suite 816 • Philadelphia, PA 19106-3483



## APPLICATION FOR MEMBERSHIP

CATEGORY OF MEMBERSHIP:  Active  Corresponding

NAME OF CANDIDATE: \_\_\_\_\_ DATE OF BIRTH: \_\_\_\_\_  
LAST FIRST M.I.

PRESENT POSITION/TITLE: \_\_\_\_\_

INSTITUTIONAL AFFILIATION: \_\_\_\_\_

INSTITUTIONAL ADDRESS: \_\_\_\_\_

(City) (State/Province) (Country) (Postal Code)

TELEPHONE NUMBER: \_\_\_\_\_

FAX NUMBER: \_\_\_\_\_

PRIMARY FIELD OF RESEARCH (Please check only one):

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Biochemistry and Biophysics                            | <input type="checkbox"/> Biostatistics           | <input type="checkbox"/> Carcinogenesis                 |
| <input type="checkbox"/> Cellular Biology and Genetics                          | <input type="checkbox"/> Clinical Investigations | <input type="checkbox"/> Endocrinology                  |
| <input type="checkbox"/> Epidemiology   | <input type="checkbox"/> Immunology              | <input type="checkbox"/> Molecular Biology and Genetics |
| <input type="checkbox"/> Preclinical Pharmacology and Experimental Therapeutics |  |   |
| <input type="checkbox"/> Virology   | <input type="checkbox"/> Other: _____            | (Please specify)  |

ACADEMIC DEGREES (Including where and when granted)

EXPERIENCE SINCE HIGHEST DEGREE WAS GRANTED (Please list most recent first)

PUBLICATIONS (Reprints of two articles on which the candidate appears as an author must accompany this application. For these two articles list the authors, title, journal, volume, inclusive pages, and year. Do not submit abstracts.)

CANDIDATE NOMINATED BY: \_\_\_\_\_  
(Please type or print)

CANDIDATE SECONDED BY: \_\_\_\_\_  
(Please type or print)

STATEMENT OF SUPPORT (in place of letters of recommendation)

Instead of submitting letters of recommendation, either the nominator or the seconder or both may complete the following section:

How long has the candidate worked in the field of cancer research? \_\_\_ years

Will the candidate make a long-term contribution to cancer research? \_\_\_ Yes \_\_\_ No

Does the candidate's research adhere to accepted ethical standards? \_\_\_ Yes \_\_\_ No

I therefore recommend this candidate for membership in the American Association for Cancer Research.

How long has the candidate worked in the field of cancer research? \_\_\_ years

Will the candidate make a long-term contribution to cancer research? \_\_\_ Yes \_\_\_ No

Does the candidate's research adhere to accepted ethical standards? \_\_\_ Yes \_\_\_ No

I therefore recommend this candidate for membership in the American Association for Cancer Research.

Signature of nominator\*

Date

Signature of seconder\*

Date

See Guidelines for Application on the reverse side of this form for further instructions.

\* Both nominator and seconder must be active, emeritus, or honorary members of the AACR.

(This form may be reproduced.)



# AMERICAN ASSOCIATION FOR CANCER RESEARCH

## GUIDELINES FOR APPLICATION FOR ASSOCIATE MEMBERSHIP

### QUALIFICATIONS FOR MEMBERSHIP

Associate membership is open to graduate students, medical students, postdoctoral fellows, and physicians in training who live in the Americas and who are following a course of study or who are working in a research program relevant to cancer.

### BENEFITS OF MEMBERSHIP

The American Association for Cancer Research (AACR), a scientific society consisting of laboratory and clinical cancer researchers, was founded in 1907 "to bring together active investigators of the cancer problem for presentation and discussion of new or significant observations; and to foster research in cancer and other phenomena of growth." Associate members of the AACR enjoy the following benefits:

1. the privilege of sponsoring an abstract for presentation at the AACR annual meeting provided that (a) the associate member is the presenter of the abstract and (b) an active member in good standing of the AACR also signs the abstract in support of the work (In this instance, the active member who cosigns the abstract does not lose his or her own sponsorship privilege.);
2. an advance copy of the Program and (if one has been purchased by the associate member) the *Proceedings of the American Association for Cancer Research* which contains abstracts of all papers being presented at each annual meeting;
3. the privilege of registering for the annual meeting at the low student rate (This rate is otherwise available only to predoctoral students.);
4. preferred access to the AACR Employment Register;
5. optional subscriptions to the journals *Cancer Research*, *Cell Growth & Differentiation*, and *Cancer Epidemiology, Biomarkers & Prevention* at the reduced member rate;
6. subscriptions to any future AACR journals at reduced member rates;
7. early notification of events in the AACR's new series of small scientific meetings on timely scientific topics;
8. the receipt of AACR newsletters, meeting announcements, and an up-to-date membership directory; and
9. the facilitation of informal scientific exchange with leading researchers in the cancer field.

### PROCEDURES FOR APPLICATION

Persons wishing to apply for associate membership must use the official application form on the reverse side of these instructions. Each candidate for associate membership must be nominated by an active member in good standing of the AACR. Three completed copies of the form should be submitted; at least one of these copies must carry the original signatures of both the candidate and the active member nominator. The application form may be submitted to the Association Office at any time.

After review of applications for associate membership, the Executive Director will notify candidates of their election or deferral within one month of the receipt of the application form. A check in the amount of \$30, which represents one year's dues payment, must accompany the application. This fee will be refunded to any candidate deemed to be ineligible for associate membership. Checks should be in U.S. currency, made payable to AACR, Inc., and drawn on a U.S. bank. Send the three copies of the application form and the \$30 dues payment to:

American Association for Cancer Research  
Public Ledger Building  
620 Chestnut St.  
Suite 816  
Philadelphia, PA 19106-3483  
215/440-9300

### RESPONSIBILITIES OF MEMBERSHIP

Associate members must pay annual dues in an amount to be determined by the AACR Board of Directors. Dues for 1993 have been set at \$30 per year. If an application is submitted by August 31, the accompanying dues payment will be credited to the current year. Candidates submitting applications between September 1 and December 31 may indicate whether they wish their dues payments credited to the current or forthcoming year. Candidates should be aware, however, that associate members may sponsor an abstract for the annual meeting only if their dues for the current year are paid. For example, an associate member submitting an abstract in December 1993 for the forthcoming annual meeting must have paid dues for 1993. Any newly elected associate members of the AACR who have already purchased subscriptions to *Cancer Research*, *Cell Growth & Differentiation*, or *Cancer Epidemiology, Biomarkers & Prevention* at the higher, nonmember rate will receive a refund for the unused portion of that subscription upon receipt of their payment for a member's subscription.

Each Fall the AACR will send to current associate members an invoice for dues for the forthcoming year. Payment of this invoice must be accompanied by a statement signed by the associate member's current registrar, dean, or department head, verifying the member's current academic status. The Association's By-Laws state that dues are payable for each year in advance on or before January 1 of the year to which they should be applied. An individual may be an associate member for a maximum of five years. Each year in which an individual pays dues will count as one full year of associate membership. Thus, an associate member who pays dues for 1993 may retain associate membership until December 31, 1997. The Board of Directors may terminate the membership of an associate member whose dues are in arrears for two years.

Margaret Foti,  
Executive Director

# AMERICAN ASSOCIATION FOR CANCER RESEARCH, INC.

Public Ledger Building • 620 Chestnut St. • Suite 816 • Philadelphia, PA 19106-3483

## APPLICATION FOR ASSOCIATE MEMBERSHIP

NAME OF CANDIDATE: \_\_\_\_\_ DATE OF BIRTH: \_\_\_\_\_  
LAST FIRST M.I.

INSTITUTIONAL AFFILIATION: \_\_\_\_\_

INSTITUTIONAL ADDRESS: \_\_\_\_\_

(City) (State/Province) (Postal Code) (Country)

TELEPHONE NUMBER: \_\_\_\_\_

FAX NUMBER: \_\_\_\_\_

PRESENT ACADEMIC STATUS/TITLE (Please check only one):

\_\_\_\_ Graduate Student      \_\_\_\_ Medical Student  
\_\_\_\_ Physician in Training      \_\_\_\_ Postdoctoral Fellow

PRIMARY FIELD OF RESEARCH (Please check only one):

\_\_\_\_ Biochemistry and Biophysics      \_\_\_\_ Biostatistics      \_\_\_\_ Carcinogenesis  
\_\_\_\_ Cellular Biology and Genetics      \_\_\_\_ Clinical Investigations      \_\_\_\_ Endocrinology  
\_\_\_\_ Epidemiology      \_\_\_\_ Immunology      \_\_\_\_ Molecular Biology and Genetics  
\_\_\_\_ Preclinical Pharmacology and Experimental Therapeutics  
\_\_\_\_ Virology      \_\_\_\_ Other: \_\_\_\_\_

(Please specify)

ACADEMIC DEGREES (Please indicate degree(s) acquired to date along with the name of the academic institution and date of receipt. Provide information on degree currently being sought and the anticipated date of completion of this degree program.)

RELEVANT RESEARCH EXPERIENCE NOT RELATED TO COURSE WORK (Please list most recent first.)

PUBLICATIONS (List the authors, title, journal, volume, inclusive pages, and year of any article in a peer-reviewed journal on which the candidate appears as an author. Do not list abstracts. Continue on a separate sheet, if necessary.)

CANDIDATE NOMINATED BY: \_\_\_\_\_  
(Please type or print name of AACR active member in good standing.)

### SIGNATURES

I hereby apply for associate membership in the American Association for Cancer Research. I have read the instructions on the reverse side of this form, and I understand the privileges and responsibilities of this class of membership. I certify that the statements on this application are true.

Signature of Candidate: \_\_\_\_\_ Date: \_\_\_\_\_

I recommend this candidate for associate membership in the American Association for Cancer Research. To the best of my knowledge, the candidate is qualified for this class of membership, and the statements on this application are true.

Signature of Nominator\*: \_\_\_\_\_ Date: \_\_\_\_\_

Submit three copies of this form. At least one copy must contain the original signatures of the candidate and the nominator. Enclose a check for \$30 in U.S. funds made payable to AACR, Inc. and drawn on a U.S. bank. Check *one* of the following boxes *only* if this form is being submitted between September 1 and December 31:

The enclosed dues payment should be applied to the  
 current       forthcoming      calendar year.

(NOTE: If dues are applied to the forthcoming year, membership will take effect on January 1, but the candidate will not be eligible to sponsor an abstract for presentation at the annual meeting in May of that year.) See Guidelines for Application on the reverse side of this form for further instructions.

\* Nominator must be active, emeritus, or honorary member of the AACR.

(This form may be reproduced.)

# AMERICAN ASSOCIATION FOR CANCER RESEARCH EIGHTY-FOURTH ANNUAL MEETING

May 19-22, 1993  
Orange County Convention Center  
Orlando, Florida

## ADVANCE REGISTRATION FORM

(Please print or type)

NAME: \_\_\_\_\_  
Last Name First Name Middle Initial ACR Member Number

TITLE: \_\_\_\_\_ ADDRESS: \_\_\_\_\_  
Institution

Street, Building, or Post Office Box

City State or Province Zip/Postal Code Country (if not U.S.)

TELEPHONE: \_\_\_\_\_ FAX: \_\_\_\_\_

Check this box if you have a physical disability and special requirements for transportation, hotel accommodations, or other facilities connected with the meeting. A member of the Association Staff will contact you.

WHAT IS YOUR PRIMARY FIELD OF RESEARCH (Please check only one):

- <sup>1</sup>Biochemistry and Biophysics  <sup>2</sup>Biostatistics  <sup>3</sup>Carcinogenesis  <sup>4</sup>Cellular Biology & Genetics  <sup>5</sup>Clinical Investigations  
 <sup>6</sup>Endocrinology  <sup>7</sup>Epidemiology  <sup>8</sup>Immunology  <sup>9</sup>Molecular Biology  
 <sup>10</sup>Preclinical Pharmacology & Experimental Therapeutics  <sup>11</sup>Virology  <sup>12</sup>Other (please specify): \_\_\_\_\_

ARE YOU THE PRESENTER OF AN ABSTRACT SUBMITTED FOR THE 1993 AACR MEETING?  Yes  No

ON WHICH DAYS WILL YOU ATTEND THE 1993 AACR ANNUAL MEETING?

- Wednesday, May 19  Thursday, May 20  Friday, May 21  Saturday, May 22

WILL YOU ATTEND THE ASCO MEETING IN ORLANDO?  Yes  No

ON WHICH DAYS WILL YOU ATTEND THE 1993 ASCO ANNUAL MEETING?

- Sunday, May 16  Monday, May 17  Tuesday, May 18

### PAYMENT OF REGISTRATION

Fees may be paid by check or with a MasterCard, VISA, American Express, or Eurocard account. All payments must be made in U.S. currency, and all checks must be drawn on a U.S. bank. Payment must accompany this form; purchase orders will not be accepted as payment. Honorary and emeritus members may register gratis.

FEES	On or Before Mar. 29	After Mar. 29	METHOD OF PAYMENT
<input type="checkbox"/> Active Corresponding Member Rate	\$ 90	\$115	<input type="checkbox"/> Check payable to AACR, Inc. in U.S. currency, drawn on a U.S. bank
<input type="checkbox"/> Honorary/Emeritus Member Rate	\$ 0	\$ 0	
<input type="checkbox"/> Nonmember Rate (includes a copy of AACR <i>Proceedings</i> )	\$185	\$210	Person Institution Issuing Check <span style="float: right;">Check No.</span>
<input type="checkbox"/> Associate Member/Student Rate* (does not include a copy of AACR <i>Proceedings</i> )	\$ 45	\$ 55	<input type="checkbox"/> MasterCard <input type="checkbox"/> VISA <input type="checkbox"/> American Express <input type="checkbox"/> Eurocard
<input type="checkbox"/> AACR <i>Proceedings</i> *	\$ 35	\$ 35	
<input type="checkbox"/> Overseas Airmail Surcharge	\$ 22	N/A	
			Account Number and Expiration Date

Total Enclosed or Charged \_\_\_\_\_ Signature \_\_\_\_\_

**THE DEADLINE FOR REDUCED REGISTRATION FEES IS MARCH 29, 1993. Registration by mail will be accepted until April 16. Registration will also be possible at the Orange County Convention Center from May 18-22.**

Students must enclose a statement, signed by the registrar, dean, or department head of their university or college on official letterhead, confirming their status. **Postdoctoral fellows or physicians in training do not qualify for the student registration rate** unless they are associate members of the AACR. An application for associate membership may accompany this form, but these should be submitted well before the March 29 deadline as review of the associate membership application may delay registration.

+AACR members with paid-up subscriptions to an AACR journal and registrants who pay the nonmember fee receive the *Proceedings* automatically. If these members or nonmembers check this box and pay the \$35 fee, they will receive an **additional** copy of the *Proceedings*.

Optional payment for registrants outside of the U.S. and Canada only. Registrants paying this surcharge will receive meeting publications via air mail-printed matter before the annual meeting.

Mail all advance registration forms with applicable fees to Annual Meeting Registration, American Association for Cancer Research, Inc., Public Ledger Building, 620 Chestnut Street, Suite 816, Philadelphia, PA 19106-3483. FAX: 215-440-9313. Badges and receipts will be sent to you in April or early May. AACR members in good standing will receive copies of the Program and *Proceedings* prior to the meeting. Nonmember and student registrants who meet the March 29 deadline will also receive the Program and (if they have purchased it) the *Proceedings* prior to the meeting. Nonmembers and students who do not meet the deadline must pick up publications at the meeting site.

### REFUND POLICY

Refunds on registration fees will be granted on written request received in the AACR Office by May 12, 1993. Requests received after this date will not be honored. Receipts and badges (if they have been mailed) must be returned to the AACR Office with the refund request. A cancellation fee of \$25 will be deducted from all refunds to cover administrative costs.

# 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

## SCIENTIFIC PROGRAM

### Overview

**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** / Villejuif, 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  
**U. Wintersberger** / Vienna, Austria  
**David Malkin** / Toronto, Canada  
**C. 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

---

### *Information and Application Forms*

American Association for Cancer Research  
Public Ledger Building  
620 Chestnut Street, Suite 816  
Philadelphia, PA 19106-3483  
(215) 440-9300 (215) 440-9313 (FAX)

# DIRECTOR - DEPARTMENT OF PREVENTIVE ONCOLOGY AND EPIDEMIOLOGY

The Manitoba Cancer Treatment and Research Foundation has an exceptional career opportunity for a qualified and motivated individual to assume the leadership role in the development of the Preventive Oncology and Epidemiology Department. As Director, you will be responsible for developing and implementing strategic and operating plans for the Department, developing and promoting provincial plans for preventive oncology and cancer control, forming strategic alliances with interested stakeholders in Manitoba, developing programs in the fields of clinical and analytical epidemiology, and for collaborating in national and international research studies.

The successful candidate will have a Doctorate in Medicine and/or Philosophy with extensive experience in Epidemiology and Disease Prevention, demonstrated abilities in budgeting, and a record in acquiring external resources including grants. The incumbent will have excellent analytical, communication and leadership skills, and be capable of leading and responding to change.

The Manitoba Cancer Treatment and Research Foundation, a renowned cancer research facility, has a centralized mandate for comprehensive cancer care in the Province of Manitoba, and is currently beginning a major building expansion project.

The compensation package for this position is competitive, commensurate with qualifications, and includes a benefits package.

Interested and qualified candidates are invited to submit, in confidence, a letter of application and curriculum vitae on or before May 15, 1993 to:



Dr. Brent Schacter, Chief Executive Officer  
Chairman, Epidemiology Search Committee  
Competition No. 007-93-600  
Manitoba Cancer Treatment and Research Foundation  
100 Olivia Street  
Winnipeg, Manitoba R3E 0V9

**A CARROT  
HELPS MORE  
THAN JUST YOUR  
EYESIGHT.**

A carrot is rich in vitamins A and C, has zero fat, is a good source of fiber, and can help you fight cancer. For more information on fruits and vegetables that can do the same, call 1-800-ACS-2345.



**THERE'S NOTHING MIGHTIER  
THAN THE SWORD.**

## CANCER EPIDEMIOLOGIST

The Department of Epidemiology, School of Public Health, and the Lineberger Comprehensive Cancer Center (LCCC), School of Medicine, of the University of North Carolina at Chapel Hill are seeking a tenure-track faculty member at an academic rank to be determined by the training and qualifications of the applicant. Candidates should have a Ph.D. in epidemiology or an M.D./MPH, and evidence of research productivity.

This search results from the recent award of a SPORE grant in breast cancer to the LCCC. The successful candidate should be committed to research in breast cancer and molecular/genetic epidemiology. The Department of Epidemiology and LCCC can provide molecular epidemiology laboratories, and collaborating faculty in cancer and genetic epidemiology. The new faculty member will be expected to initiate research in breast cancer etiology and to work effectively with faculty in epidemiology, laboratory disciplines and clinical fields.

Send curriculum vitae and names of 3 references to:

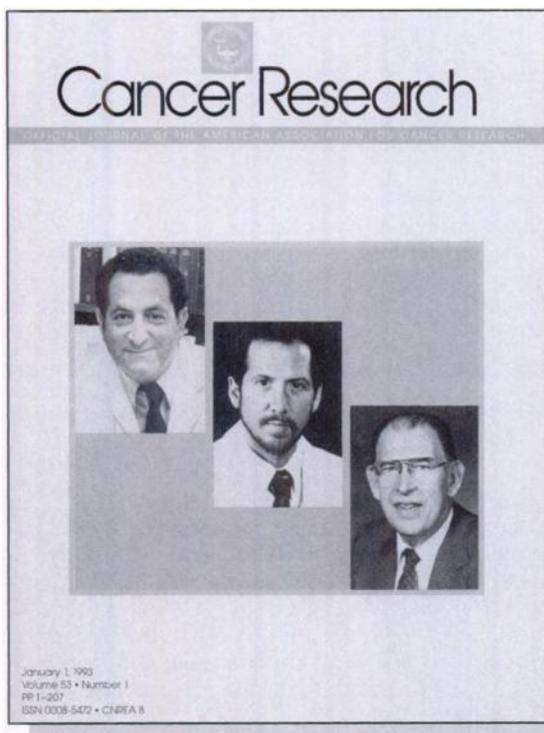
Barbara S. Hulka, M.D., M.P.H., Chair  
Department of Epidemiology  
School of Public Health CB# 7400  
McGavran-Greenberg Hall  
University of North Carolina  
Chapel Hill, NC 27599-7400

The University of North Carolina at Chapel Hill is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to identify themselves.

Keep up  
with the latest developments in

# Cancer Research

**The Official Journal of the  
American Association for Cancer Research**



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

**Subscribe to Cancer Research**—the leading citation source of original studies in cancer research and cancer-related biomedical science. Issued semimonthly, *Cancer Research* publishes 7,000 pages of important research each year, including the following regular features:

- **The most up-to-date articles** in basic research and clinical and epidemiological investigations by authors from the United States and more than 20 countries
- **Perspectives in Cancer Research**, in which leading investigators explore contemporary and at times controversial topics
- **Advances in Brief**, a rapid communication category for short but definitive, highly significant reports
- **Supplemental issues** developed from symposia on relevant subjects
- **Proceedings of the American Association for Cancer Research**, a special annual issue that offers stimulating new research ideas in abstract form

**Order  
Now!**

Yes, I want to keep up with the latest developments in *Cancer Research*. Enter my one-year subscription.

**1993 Subscription Rates:**

Individual \$390     Institutional \$390

Add \$60 for delivery outside the U.S. Subscriptions payable in advance (in US currency or equivalent) to:

WAVERLY PRESS, INC./CANCER RESEARCH  
428 East Preston Street/Baltimore, MD 21202

NAME \_\_\_\_\_

INSTITUTION \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY/STATE/ZIP \_\_\_\_\_

*Allow 8 weeks for receipt of first issue.*

**Cancer  
Research**

The Most  
Highly Cited  
Journal  
In Its Field

# Cancer Epidemiology & Biomarkers & Prevention

*Continued*

Review

**Epidemiology of Colorectal Adenomatous Polyps** 159  
Alfred I. Neugut, Judith S. Jacobson, and Immaculata DeVivo

ASPO Abstracts 177

AACR Bulletin Board 181

ASPO Bulletin Board 182

Instructions for Authors *i*

# Cancer Epidemiology & Prevention

March/April 1993  
Volume Two  
Number Two  
Pages 93-182  
ISSN 1055-9965



## Research Articles

- Alcohol Abstainers: A Low-Risk Group for Cancer—A Cohort Study of Norwegian Teetotalers** 93  
Kristina Kjærheim, Aage Andersen, and Are Helseth
- Dysplastic Nevi in Relation to Superficial Spreading Melanoma** 99  
Linda Titus-Ernstoff, Raymond L. Barnhill, Paul H. Duray, Marc S. Ernstoff, and John M. Kirkwood
- Association between Family History of Cancer and Mutagen Sensitivity in Upper Aerodigestive Tract Cancer Patients** 103  
Melissa L. Bondy, Margaret R. Spitz, Susan Halabi, John J. Fueger, Stimson P. Schantz, Dory Sample, and T. C. Hsu
- Predictors of Toenail Selenium Levels in Men and Women** 107  
Fiet A. van den Brandt, R. Alexandra Goldbohm, Pieter van't Veer, Peter Bode, Rudolph J. J. Hermus, and Ferd Sturmans
- Serum Pepsinogens in Relation to Precancerous Gastric Lesions in a Population at High Risk for Gastric Cancer** 113  
Wei-cheng You, William J. Blot, Lian Zhang, Robert W. Kneller, Ji-you Li, Mao-lin Jin, Yun-sheng Chang, Xiang-rui Zeng, Joseph F. Fraumeni, Jr., Guang-wei Xu, and Michael I. Samloff
- Serum Anti-*Helicobacter pylori* IgG Antibodies and Pepsinogens A and C as Serological Markers of Chronic Atrophic Gastritis** 119  
F. Sitas, R. Smallwood, D. Jewell, P. R. Millard, D. G. Newell, S. G. M. Meuwissen, S. Moses, A. Zwiers, and D. Forman
- Procollagen Type I Carboxy-Terminal Propeptide as a Marker of Osteoblastic Bone Metastases** 125  
G. Francini, S. Gonnelli, R. Petrioli, S. Bruni, S. Marsili, A. Aquino, and A. Camporeale
- HRAS Protooncogene Polymorphism and Breast Cancer** 131  
Peter A. Garrett, Barbara S. Hulka, Yoon L. Kim, and Rosann A. Farber
- A Nonsaponification Method for the Determination of Carotenoids, Retinoids, and Tocopherols in Solid Human Tissues** 139  
Yei-Mei Peng, Yeh-Shan Peng, and Yonggu Lin
- Micronutrient Concentrations in Paired Skin and Plasma of Patients with Actinic Keratoses: Effect of Prolonged Retinol Supplementation** 145  
Yei-Mei Peng, Yeh-Shan Peng, Yonggu Lin, Thomas Moon, and Monika Baier
- Impact of an HMO-based Intervention to Increase Mammography Utilization** 151  
Bruce Trock, Barbara K. Rimer, Eunice King, Andrew Balshem, C. Suzanne Cristinzio, and Paul F. Engstrom

## Short Communication

- Borage Consumption as a Possible Gastric Cancer Protective Factor** 157  
Carlos A. González, J. Miguel Sanz, Guillermo Marcos, Salvador Pita, Enric Brullet, Eugeni Saigi, Asunción Badia, Antonio Agudo, and Elio Riboli

*Continued on Inside Back Cover*