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:

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, except for correction of printer's errors.

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:
SEPTEMBER 23-26, 1992  
Molecular and Biochemical Methods in Cancer Epidemiology and Prevention  
Chairperson: David Schottenfeld, Ann Arbor, MI  
The Registry Resort, Naples, FL

OCTOBER 18-22, 1992  
Normal and Neoplastic Growth and Development  
Chairperson: Arnold J. Levine, Princeton, NJ  
Chatham Bars Inn, Chatham (Cape Cod), MA

NOVEMBER 4-8, 1992  
Genetics of Cancer  
Supported by a Generous Grant from the General Motors Cancer Research Foundation  
Co-Chairpersons: Webster K. Cavenee, San Diego, CA; Raymond L. White, Salt Lake City, UT  
Marriott Hilton Head Resort, Hilton Head, SC

DECEMBER 7-12, 1992  
Chemicals, Mutations, and Cancer  
Co-Sponsored by the National Cancer Institute of Canada  
Chairperson: Lawrence A. Loeb, Seattle, WA  
Banff Springs Hotel, Banff, Alberta, Canada

FEBRUARY 1-6, 1993  
Oncogenes and Tumor Suppressor Genes in Cancer Etiology and Mammalian Development  
Chairperson: Carlo M. Croce, Philadelphia, PA  
Big Sky Resort, Big Sky, MT

MARCH 15-20, 1993  
Mechanism of Action of Retinoids, Vitamin D, and Steroid Hormones  
Co-Chairpersons: Michael B. Sporn, Bethesda, MD; Ronald M. Evans, San Diego, CA; David Mangelsdorf, San Diego, CA  
Banff Centre, Banff, Alberta, Canada

April 13-17, 1993  
Model Systems in Cancer Research (Tentative Title)  
Supported by a Generous Grant from the General Motors Cancer Research Foundation  
Co-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

NOVEMBER 7-11, 1993  
Tumor Immunology: Basic and Clinical Aspects  
Chairperson: Ralph A. Reisfeld, San Diego, CA  
Grove Park Inn, Asheville, NC

JANUARY 31-FEBRUARY 5, 1994  
Molecular Genetics of Progression and Metastasis  
Chairperson: Lance A. Liotta, Bethesda, MD  
Big Sky Resort, Big Sky, MT

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)
AACR SPECIAL CONFERENCE IN CANCER RESEARCH

Molecular and Biochemical Methods in Cancer Epidemiology and Prevention - The Path Between the Laboratory and the Population

September 23-26, 1992
The Registry Resort, Naples, Florida

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David Schottenfeld / Ann Arbor, MI

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Epidemiological Studies

Evaluation of the Applications of Biochemical and Molecular Markers in Epidemiological Studies
Barbara S. Hulka / Chapel Hill, NC
Neil E. Caporaso / Bethesda, MD
Nathaniel Rothman / Bethesda, MD
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Mark Schillman / Bethesda, MD

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Genetics of Cancer

November 4-8, 1992
Marriott Hilton Head Resort, Hilton Head, South Carolina

Supported by a Generous Grant from
the General Motors Cancer Research Foundation

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Raymond L. White / Salt Lake City, UT

SCIENTIFIC PROGRAM

Keynote Address
Robert A. Weinberg / Cambridge, MA

Inherited Cancer Genes
Bruce A.J. Ponder / Cambridge, England
Raymond L. White / Salt Lake City, UT
Frank McCormick / Emeryville, CA
Arnold J. Levine / Princeton, NJ
Webster K. Cavenee / La Jolla, CA

Genetic Mechanisms
Carmen Sapienza / La Jolla, CA
Carlo M. Croce / Philadelphia, PA
Neal G. Copeland / Frederick, MD

Molecular Genetics of Mitosis
George F. Vande Woude / Frederick, MD
Carol Greider / Cold Spring Harbor, NY
Andrew Murray / San Francisco, CA
David Beach / Cold Spring Harbor, NY
Erich A. Nigg / Lausanne, Switzerland

Genetic Instability
Geoffrey Wahl / San Diego, CA
C. Thomas Caskey / Houston, TX
Walton Fangman / Seattle, WA

Genetics and Cell Commitment
Stuart A. Aaronson / Bethesda, MD
Mariano Barbacid / Princeton, NJ
M. Geoffrey Rosenfeld / La Jolla, CA
David Anderson / Pasadena, CA
Leo Sachs / Rehovot, Israel

Animal Models
Mario Capecchi / Salt Lake City, UT
Douglas Hanahan / San Francisco, CA
Erwin Wagner / Vienna, Austria

Programmed Cell Death
Stanley J. Korsmeyer / St. Louis, MO
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Chatham Bars Inn, Chatham (Cape Cod), Massachusetts

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SCIENTIFIC PROGRAM

Keynote Address

Robert A. Weinberg  Cambridge, MA

Hematopoiesis I

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Charles J. Sherr  Memphis, TN
Alan Bernstein  Toronto, Canada
Elliott D. Kieff  Boston, MA

Hematopoiesis II

Ihor Lemischka  Princeton, NJ
Bruce Mayer  New York, NY
Irwin S. Chen  Los Angeles, CA
Flossie Wong-Staal  La Jolla, CA

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Jerry M. Adams  Melbourne, Australia
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Anton Berns  Amsterdam, The Netherlands

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Carol L. Prives  New York, NY

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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:

<table>
<thead>
<tr>
<th>Receipt of Application in AACR Office</th>
<th>Notification of Candidate</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 1</td>
<td>May</td>
</tr>
<tr>
<td>July 1</td>
<td>September</td>
</tr>
<tr>
<td>October 1</td>
<td>December</td>
</tr>
</tbody>
</table>

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):

[ ] 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 (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.

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.)
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 $20, 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 $20 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 1992 have been set at $20 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 1991 for the forthcoming annual meeting must have paid dues for 1991. 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 1991 may retain associate membership until December 31, 1995. The Board of Directors may terminate the membership of an associate member whose dues are in arrears for two years.

Margaret Foti,
Executive Director
APPLICATION FOR ASSOCIATE MEMBERSHIP

NAME OF CANDIDATE: ____________________________ DATE OF BIRTH: ____________________________

LAST NAME FIRST NAME 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 $20 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:

☐ 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.)
Prognostic Value of Human Papillomavirus in the Survival of Cervical Cancer Patients: An Overview of the Evidence  
Eduardo L. Franco  

Host Factors in Lung Cancer Risk: A Review of Interdisciplinary Studies  
Christopher I. Amos, Neil E. Caporaso, and Ainsley Weston  

The Emerging Epidemic of Non-Hodgkin’s Lymphoma: Current Knowledge Regarding Etiological Factors  
Paul H. Levine and Robert Hoover  

The Role of Biological Markers in Epidemiological Research: Future Directions  
Kumiko Iwamoto, C. Iris Obrams, and David Schottenfeld
Joseph W. Cullen Memorial Award Lecture

Introduction
C. Tracy Orleans

Paving the Road from Basic Research to Policy: Cigarette Smoking as a Prototype Issue for Cancer Control Science
Ellen R. Gritz

Research Articles

A Case-Control Study of Breast Cancer in Tianjin, China
Qing-Sheng Wang, Ronald K. Ross, Mimi C. Yu, Jia Ping Ning, Brian L. Henderson, and Hyen T. Kimm

Risk Factors for Oral and Pharyngeal Cancer in Shanghai, with Emphasis on Diet

Antibodies to Helicobacter pylori and Pepsinogen Levels in Children from Costa Rica: Comparison of Two Areas with Different Risks for Stomach Cancer

N-Nitrosopipoline Excretion by Rural Nebraskans Drinking Water of Varied Nitrate Content
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Micronuclei in Esophageal Cells of Chinese Youths in a High-Incidence Area for Esophageal Cancer in China
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