INSTRUCTIONS FOR AUTHORS

Cancer Research, an official journal of the American Association for Cancer Research, Inc. (AACR), is devoted to the publication of significant, original studies in all areas of basic, clinical, translational and epidemiological cancer research. Topics include: biochemistry; biophysics; chemical, physical, and viral carcinogenesis and mutagenesis; clinical investigations including clinical trials; endocrinology; epidemiology and prevention; experimental pathology; experimental therapeutics; immunology and immunotherapy including biological therapy; molecular biology and genetics; physiology; radiobiology and radiation oncology; tumor biology; and virology.

Papers are stringently reviewed, and only those that report results of novel, timely, and significant research and meet high standards of scientific merit will be accepted.

CATEGORIES OF PUBLICATION

The following types of material will be considered for publication:

(1) **Regular research articles** that report original experimental, clinical, translational or epidemiological studies relating to cancer, which are well documented, novel, and significant. These articles are published within an average of 60 days from their acceptance.

(2) **Advances in Brief**, which are short, definitive reports of highly significant and timely findings in the field. These submissions receive very rapid review and, if acceptable, are published within an average of 10 weeks from receipt. Those deemed to be of the highest scientific merit and priority appear in print within 6–7 weeks of their receipt. Advances should be approximately 3 printed pages in length (about 12 double-spaced typescript pages), containing an Abstract of about 100 words, a one-paragraph Introduction, an abbreviated Materials and Methods section, Results and Discussion sections (which may be combined), a maximum of 20 references, and no more than 4 items for the display of data (any combination of figures and tables).

(3) **Perspectives in Cancer Research**, which are invited articles presenting fresh insights on either a very active or undeveloped area of research and viewpoints on where research in that area may or should be heading.

(4) **Concise reviews** on subjects of timely interest and importance to cancer researchers. Authors of unsolicited reviews should submit an outline of the proposed article for approval by the Editorial Board. If submission of the complete article is encouraged, the review will be given particularly stringent editorial evaluation before acceptance.

(5) **Public Issues**, which are brief reports on topics of interest to cancer researchers and the general public; these might include articles on funding for cancer research, training in the field, public education, science education, etc.

(6) **Letters to the Editor**, offering considered opinions on manuscripts published in the Journal. Correspondence concerning articles that have been published in Cancer Research will not be considered.

(7) **Brief meeting reports** on symposia and conferences on cancer research. These should comprise no more than 3 printed pages (approximately 12 double-spaced typescript pages) and include a statement of the purpose(s) of the meeting, an integrated summary of the findings presented, and recommendations for future research. The names and affiliations of key speakers may be included if space is available.

(8) **Proceedings of symposia**, published as external supplements to the Journal (Supplements to Cancer Research), the full expenses of which are assumed by the sponsoring agency. These proceedings are accepted for publication at the discretion of the Editor-in-Chief. Stringent acceptance criteria will be imposed.

(9) **Brief announcements** of scientific meetings and of courses in cancer-related biomedical science of interest to our readers. These should be submitted at least 3 months prior to the expected month of issue.

(10) **Brief listings of recent deaths** of distinguished contributors to the field of cancer research.

EDITORIAL POLICIES

Submission of a manuscript to Cancer Research implies that the author(s) of the paper understand and fully accept the policies of the Journal as detailed in these "Instructions for Authors." When a manuscript is submitted for consideration, the authors should confirm in writing that neither the submitted paper nor any similar paper, other than a shorter communication, has been or will be submitted in any other primary scientific journal. Once an article is accepted for publication in Cancer Research, the information therein is embargoed from reporting by the print media until the journal's issue date and embargoed from reporting by all other media until 6 p.m. (EST) the evening before the issue date.

It is also understood that all authors listed on a manuscript have agreed to its submission and content. For revised manuscripts, if an author is deleted or a new author is added, it is the responsibility of the corresponding author to provide the Publications Department with written documentation at the time of resubmission that the authors involved are aware of and agree to the changes in authorship. Cancer Research accepts no responsibility for such changes.

The Journal maintains an international editorial board of Associate Editors with broad expertise in all areas of cancer research. These Associate Editors, along with a large group of external reviewers, provide fair and thorough evaluations of papers submitted to Cancer Research. When reviewing manuscripts, the Associate Editors and reviewers are expected to adhere to a strict code of ethical conduct in the review of scientific literature. This code mandates that the confidentiality of the material under review be maintained. Further details on appropriate conduct for Editors and reviewers can be found in Ethics and Policy in Scientific Publications (First Edition, 1992, published by the Council of Biology Editors, Inc., Chicago, IL 60603).

Journal policy requires that authors, reviewers, and Associate Editors reveal to the Editor-in-Chief any relationships that they believe could be construed as causing a conflict of interest with regard to the manuscript submitted for review. Submission of a manuscript implies acceptance by all authors of the strict policy of the Journal that under no circumstances will the identities or information leading to the identities of the Associate Editors and reviewers be revealed.

Every effort is made to render editorial decisions promptly, consistent with thoroughness of review. Inquiries regarding the status of manuscripts should be submitted in writing. Collect telephone calls from authors cannot be accepted.

SUBMISSION AND PUBLICATION FEES

A non-refundable submission fee of $75 is assessed for each manuscript and must be paid regardless of the decision rendered on the paper. Payment must be made at the time of submission either by check (drawn on a U.S. bank), purchase order (for $75 in U.S. currency) payable to the AACR, Inc., or by credit card (Visa, Mastercard, Eurocard, or American Express). To pay by credit card, include the card number and expiration date in the covering letter accompanying your manuscript. Credit card payment is preferred for submissions from outside the U.S. If a purchase order must precede payment by an institution, it is the author's responsibility to ensure that the purchase order is followed by payment of the fee.

A page charge of $75 per printed page will be levied on all manuscripts accepted for publication. It is understood at the time of submission that the author(s) agree to pay this charge in the event of publication. Under exceptional circumstances, when no other source of grant or other support exists, the author(s) may apply to the Editor-in-Chief at the time of submission for a waiver of the page charges. All such applications must be countersigned by an appropriate institutional or governmental stating that no funds are available for the payment of page charges.

PROCEDURES FOR SUBMISSION

Contributions should be addressed to: Dr. Carlo M. Croce, Editor-in-Chief, Cancer Research, AACR, 150 S. Independence Mall West, Public Ledger Bldg., Suite 816, Philadelphia, PA 19106-3483; Phone: (215) 440-9300; FAX: (215) 440-9354. The paper should be submitted by an author, preferably the senior author, who should indicate in a covering letter:

1. that the paper is being submitted for consideration for publication in Cancer Research;
2. the exact address to which all related correspondence should be sent and the telephone and FAX numbers at which the author can be reached;
3. credit card number, expiration date, and an authorized signature, if paying submission fee by credit card;
4. that neither the submitted paper nor any similar paper, other than an abstract or preliminary communication, has been or will be submitted to or published in any other primary scientific journal;
5. that all of the authors are aware of and agree to the content of the paper and their being listed as an author on the paper;
6. that authorization has been given to use any information conveyed by either personal communication or release of unpublished experimental data;
7. the salient and novel findings of the paper in a concise paragraph.
(8) the subject category that applies to the manuscript (please choose one only):

- Biochemistry and Biophysics
- Carcinogenesis
- Clinical Investigations
- Endocrinology
- Epidemiology
- Experimental Therapeutics
- Immunology
- Molecular Biology and Genetics
- Tumor Biology
- Virology

[The final category assignment of an article in an issue’s Table of Contents is at the discretion of the Editors.]

(9) five key words describing the paper, to assist in the selection of the Associate Editor and reviewers.

Authors may suggest appropriate Associate Editors (the names of whom are listed in the front of each issue of Cancer Research) and reviewers to whom the manuscript could be assigned. Full addresses of suggested reviewers should be provided. Please note that final assignments are at the Editor-in-Chief’s discretion.

**Original submissions** must include:

1. The author’s covering letter in duplicate containing the above information.
2. Four copies of the manuscript and four sets of original illustrations. Indicate which set of original illustrations should be used by the printer in the event of publication.
3. Papers in press or submitted for publication which are highly relevant to the manuscript under review.

**Revised manuscript submissions** must include:

1. A covering letter in duplicate, clearly indicating what alterations have been made in response to the criticisms raised. Satisfactory reasons should be given for noncompliance with any of the reviewers’ recommendations for revision.
2. Four copies of the revised version of the manuscript, plus a red-marked copy of the manuscript indicating the changes made, and four sets of original illustrations.
3. A disk of the revised version of the manuscript to expedite typesetting the article in the event of publication. The disk must be accompanied by a completed Disk Submission Form, which can be found in the back of each issue of Cancer Research. (See “Typesetting from Disks” section later in these Instructions for further details.)

**Note:** For both original and revised submissions, we cannot guarantee that manuscripts and illustrations will be returned to the author.

Authors are advised that the revised version of their manuscript is likely to undergo another review if the original submission required extensive changes. Authors of regular articles are asked to submit their revised versions within 3–4 weeks from the notification of the decision on a manuscript, while authors of Advances in Brief are asked to resubmit within 2 weeks. The Editors acknowledge that a longer period of time might be needed to make the revisions in some cases. However, if a revised manuscript is not received within six months from the date of its original receipt, the resubmission may be considered a new manuscript and it will be subject to all of the conditions of an original submission.

Manuscripts that have been declined for publication will be reconsidered at the Editor-in-Chief’s discretion. An author of a rejected manuscript who wishes to resubmit must send a paper that has been revised in response to the criticisms, along with a covering letter in which the revisions are described. The manuscript identification number of the previous submission should be referenced in the covering letter. If the Editor-in-Chief determines that the paper can be reconsidered, it will be assigned a new manuscript identification number, the author will be charged a new manuscript submission fee, and the paper will undergo review as a new submission.

The Editors cannot determine a priori whether a paper will be acceptable after revision. Therefore, a letter from the author that merely describes intended revisions will not be acted upon.

**FORMAT AND STYLE**

Papers should conform strictly to Journal style. A recent issue of Cancer Research will provide authors with assistance in the proper arrangement of papers. Manuscripts are to be written in clear, grammatical English. Papers that are not in Cancer Research style or that are not in good idiomatic English will be returned to the author without review. Laboratory jargon as well as terminology and abbreviations not consistent with internationally accepted guidelines should be avoided.


Data must be presented concisely. Large masses of data of peripheral significance to the main thesis of the investigation will not be published in Cancer Research but may be deposited with the National Auxiliary Publications Service, c/o Microfiche Publications, P.O. Box 3513, Grand Central Station, New York, NY 10163-3513; (516) 481-2300. The manuscript should contain a footnote that indicates how this ancillary material can be obtained. Such data should be submitted for review along with the manuscript.

The manuscript should be typed on 21.6 × 28 cm (8½ × 11-inch) paper with double spacing throughout, allowing for ample margins. Manuscripts with typing on both sides of the page will be returned to the authors. Consecutive numbering of all pages is required, with the title page as page 1. The typescript should be arranged in the following order: (a) title, (b) author(s) and complete name(s) and location(s) of institution(s) or laboratory(es), (c) running title, (d) key words, (e) footnotes, (f) text and references, (g) tables, (h) legends illustrations, and (i) other material. Numbered and lettered sections in the text should be avoided. The approximate location for each table and illustration should be indicated by marginal notes. Simple chemical formulas or mathematical equations should be presented in a form that allows their reproduction in single horizontal lines of type; more complicated mathematical formulas or chemical structures difficult to set in type should be provided for reproduction in the form of line drawings or glossy photographs.

**Title.** Titles should be brief but informative, and limited if possible to about 100 characters. It is important for literature retrieval to include in the title the key words necessary to identify the nature of the subject matter, including, if applicable, the species on which the work is done. Use of expressions such as “Studies on . . .” or “Observations of . . .” should be avoided, since they are not informative. Chemical formulas or abbreviations should not be used. Also, do not use Roman or Arabic numerals to designate that the paper is one in a series (see section below on Footnotes).

**Authors and Their Affiliations.** Authors are urged to include their full names, complete with first and middle names or initials. Confusion often arises in the literature when authors are identified by surname and initials only. Authors with academic degrees should not be included. The full names of institutions and subsidiary laboratories should be given, together with a useful address (including postal code). If several authors and institutions are listed on a paper, it should be clearly indicated with which department and institution each author is affiliated.

**Running Title.** A brief running title should be provided, not to exceed 50 characters. Running titles in the form of declarative or interrogative sentences are not acceptable.

**Key Words.** On the title page, provide five key words identifying the nature of the subject matter.

**Footnotes.** Lengthy footnotes are discouraged since the same information can in most instances be presented more effectively in the text.

Footnotes to the title page and text are to be designated consecutively with superscript Arabic numerals. A footnote to the title should contain information on financial support, including the source(s) and number(s) of the grant(s). If the paper is one of a series, a footnote to this effect may be included. Authors should also include a footnote designating to whom reprint requests should be addressed. An all-inclusive abbreviation footnote should contain a definition for every nonstandard abbreviation used in the paper.

Footnotes to tables, see section on Tables below.

**Abstract.** The abstract, to appear at the beginning of the paper, should be concise, yet indicative of the content of the paper. As abstracts are often copied directly by the secondary services, they should recapitulate in abbreviated form the purpose of the study and the experimental technique, results, and interpretations of the data. Data such as the number of test subjects and controls, strains of animals or viruses, drug dosages and routes of administration, tumor yields and latent periods, length of observation period, and magnitude of activity should be included. Vague, general statements such as “The significance of the results is discussed,” or “Some physical properties were studied,”...
are uninformative and not acceptable. All important terms relevant to the content of the paper should be incorporated into the abstract to assist indexers in the derivation of key words. Abbreviations should be kept to an absolute minimum; however, if they are needed, they must be properly identified so as to make the abstract independent of the text. Authors may wish to keep in mind that MEDLINE, the computerized monthly bibliography, should be cited. The National Library of Medicine, includes only those abstracts that contain fewer than 200 words; with very few exceptions, longer abstracts are not accessible through that service.

**Introduction.** It is not necessary to include all of the background literature in this section. Brief reference to the most pertinent papers generally suffices to acquaint the reader with the findings of others in the field and with the problem or question which the author’s particular investigation addresses.

**Materials and Methods.** Explanation of the experimental methods should be brief but adequate for repetition by qualified investigators. Procedures that have been published previously should not be described in detail but merely cited in appropriate references. Only new and significant modifications of previously published procedures need complete exposition. The sources of special chemicals or preparations used should be given along with their locations (city and state, if foreign).

This Journal endorses the principles embodied in the Declaration of Helsinki and expects that all investigations involving humans will have been performed in accordance with these principles. In particular, papers reporting human experimentation must include a statement that the human investigations were performed after approval by a local Human Investigations Committee and in accordance with an assurance filed with and approved by the Department of Health and Human Services, where appropriate. Also, papers reporting biomedical research involving human subjects must include a statement that informed consent was obtained from each subject or subject’s guardian. To obtain a copy of the Helsinki Declaration, please contact the World Medical Association, 28, A. des Alpes, F-01210, Ferney-Voltaire, France.

Further, the Journal is a staunch supporter of the most humane treatment of animals in the conduct of scientific studies. For animal experimentation reported in this Journal, it is expected that investigators will have observed the Interdisciplinary Principles and Guidelines for the Use of Animals in Research, Marketing and Education issued by the New York Academy of Sciences’ Ad Hoc Committee on Animal Research, a copy of which is available for $2.00 by writing to the Marketing Department, New York Academy of Sciences, 2 E. 63rd Street, New York, NY 10021-7289. Only results of those experiments, including photographic presentation of data, in which proper attention has been given to experimental ethical considerations toward animals will be published.

**Results.** This section should include a concise textual description of the data presented in tables and illustrations. Excessive elaboration of data already given in tables and illustrations should be avoided. The Results and Discussion sections should be combined if, by so doing, space is saved or the logical sequence of the material is improved.

**Discussion.** In this section, the data should be interpreted concisely without repeating material already presented in the Results section. Specification is permitted if it is well founded.

**References.** Number references in the order of their first mention in the text; cite only the number assigned to the reference. References should be typed in double-spaced form to facilitate copy editing. The bibliography should be limited to only those citations essential to the author’s presentation. When comprehensive review articles are available, they are preferred to many separate references.

Before submission of the paper authors should verify the accuracy of all references and should check that all references have been cited in the text. Cancer Research style requires that all authors, complete titles of articles, and inclusive page numbers be supplied in the reference list. Examples of the two most common types of Journal references are:


Journal articles and serial compendia. The complete title, journal, volume number, inclusive pages, and year of publication should be given. Serial compendia, such as Advances in Cancer Research and the Annual Review of Biochemistry, which appear annually in numbered sequence, should cite the issue. The inclusion of names of publishers and editors, Serial Sources for the BIOSIS Previews Data Base (Volume 1995) should be consulted for abbreviations of journals and serials.

Books and chapter citations. Citation of a specific chapter or article in a book should carry the author(s) of the chapter, its title, editor(s) of the book, book title, edition, volume, inclusive pages of the chapter, location and name of the publisher, and year of publication. For references to complete books, give all of the above information that is pertinent.

Please note that papers cannot be listed among the references with the journal name and tentative year of publication.

Unpublished material. Papers in preparation or submitted for publication, unpublished data, and personal communications should be cited in a footnote, not in the Reference section. The names of all authors should be given, along with manuscript titles if possible.

**Addenda.** Data acquired after acceptance of the paper, by the authors themselves or by others, cannot be added to the text. An addendum may be added in proof; however, it is subject to approval by the Editor-in-Chief and could result in delay of publication. Addenda should be kept extremely brief.

**Tables.** Tabular material should not duplicate data already presented in the charts. Unnecessary columns of data that can easily be derived from the rest of the results in the table should not be included. Large groups of individual values should be avoided; instead, these should be averaged and an appropriate designation of the dispersion such as standard deviation or standard error included.

**Authors** are obliged to indicate the significance of their observations by appropriate statistical analysis.

Every table must have a descriptive title and an explanatory paragraph that clearly gives the experimental details for understanding by the reader without reference to the text. Each column must carry an appropriate heading and, if numerical measurements are given, these units should be added to the column heading. Tables should be numbered with Arabic numerals and table footnotes should be indicated with superscript italic letters ("**a**, **b**, etc.).

All units of measurement and concentration should be clearly designated. Exponential terminology is discouraged (the term mm is preferable to 10^-3 m). If exponentials are absolutely unavoidable in column headings, the quantity expressed should be preceded, not followed, by the power of 10 by which its value has been multiplied, i.e., 10^-3 x concentration (M). This will prevent confusion as to whether the quantity should be multiplied or divided to obtain the correct value.

**Illustrations.** Both line drawings (graphs) and halftone illustrations (photographs, photomicrographs, electrophoretic patterns, etc.) should be designated figures.

Figures should be used when salient points need illustration for better comprehension by the reader. Halftones are particularly expensive to reproduce and only those absolutely essential to the clarity of the presentation should be included. Straight-line functions such as relationships between concentration and absorbance, or Lineweaver-Burk plots when these are linear, should be described in a few lines in the text.

Each figure should be labeled in pencil with the first author’s name and the figure number on an adhesive label on the reverse side. For halftones, the top of the figure should also be noted.

Legends are required for all figures. They should briefly describe the data shown; details in the text should not be repeated. Staining should be included for halftones, where applicable. Each legend should adequately identify all symbols, abbreviations, mathematical expressions, abscissas, ordinates, units, and reference points used on the figure.

**Line drawings,** including flow diagrams and complex biochemical structures, should be prepared professionally (not simply typewritten). Illustrations should be provided on high-quality, smooth, opaque white paper or ordinary white bond paper. Tracing or textured papers are not acceptable. Illustrations should not be mounted on heavy cardboard. Clear, glossy prints are acceptable in lieu of original drawings, provided that all parts of the illustration are in focus. Xerox Films or Polaroid photographs are not acceptable. If original drawings are submitted, they should not be larger than 21.6 x 28 cm (8 1/4 x 11 inches).

Computer-generated graphs are acceptable provided that their quality adheres to the same standards as those produced by other means, e.g., all labeling must be clear and scaling must be in the proper proportion to reproduce legibly when reduced.

Except for especially complicated drawings showing large amounts of data, all line drawn illustrations are published at one-column width (8.9 cm or 3 3/4 inches) or less. It is recommended that they be submitted in one-column size. If larger ones are submitted, it is the responsibility of the author to see that the abscissas, ordinates, lines, and especially the symbols are sufficiently large to permit reduction. When the graphs are reduced to the size of a single column, the number of points must be at least 6 points and no larger than 12 points, and all symbols on the illustration must be discernible or the drawing will be returned to the author for correction. Do not use gray shading or screening in any graphs, particularly bar graphs. Gray does not reproduce well, especially...
if reduction is required. Use patterns consisting of solid black and white first.
If further distinctions need to be made among elements on an illustration, use horizontal, vertical, diagonal, or cross-hatched lines. The thickness of ruled lines on graphs is also vital for clear presentation of the data. Avoid using fine, broken, or dotted lines.

The symbols should be defined in the legend. Only those common symbols for which the printer has type (×, ○, ●, □, □, △, ▲, ○) should be used. Lines connecting the symbols should not extend beyond the data points.

Graphs should be ruled off close to the area occupied by the curve, and abscissas and ordinates should be clearly marked with appropriate units. Explanations of the coordinates should not extend beyond the respective lines. Do not box-in graphs with top and right-hand frame lines unless these are essential for reference. Titles printed outside the confines of the drawing waste space; all of this information should be included in the legend. Also, to conserve space those curves that may appropriately appear together should be included in a single graph.

The use of exponents for labeling coordinates in graphs is considered ambiguous and should, if possible, be avoided. If exponents must be used, the quantity expressed should be preceded by the power of 10 by which its value has been multiplied, i.e., \(10^3\) \(\times\) concentration (M). The form “Concentration \((\text{M} \times 10^{-3}\)” is not acceptable. If powers of 10 are used, the legend should designate how the quantity is to be calculated (whether multiplied or divided) to give the correct value.

**Half-tone illustrations** should be submitted unmounted and trimmed to exclude all but essential material. The set of half-tone illustrations intended for the printer’s use must be made from original negatives, i.e., they must be first generation glossy prints. Photographs made from other prints are not acceptable for reproduction. Karyotypes should be presented in the form of cardboard plates onto which chromosome sections from an original photomicrogram are pasted.

All half-tones will be published at either 1(3/4" - 11/2"), or 2(1/4")-column width and placed as close as possible to their first citation in the text. Half-tones must be prepared within these dimensions if they are to be reproduced without reduction; otherwise, they will be reduced to conform to these widths.

**Figure numbers** should not be included on the face of the illustration. However, half-tones that must appear together for comparison should be grouped under one figure number with each section lettered “a,” “b,” “c,” etc., in the lower right-hand corner on the face of the illustration. Composite figures may be mounted on a plate, with the sections butted together and tooling (thin white lines) placed between the parts of the figure. For optimal reproduction, the contrast among photographs on a plate should be consistent. The overall dimensions of photographs on a plate should not exceed 18.4 × 22.4 cm (7/4 × 9 inches). The minimum dimensions to which the plate can be reduced must be indicated on the back.

**Symbols, arrows, or letters used in photomicrographs should contrast with the background. India ink lettering is preferred.** If pressure-sensitive labeling such as Chartpak, Letraset, or Prestyle is used, tissue overlays should be placed on the half-tone to prevent the lettering from chipping away. In general, tissue overlays are recommended to protect the surface of half-tones. The important areas of the photographs that must be reproduced with greatest fidelity should be indicated on overlays.

**Internal scale markers should always be included on the photographs themselves as opposed to listing magnification in the legend since it may be necessary to reduce the figures.** Magnifications given in the legend will reflect size before reduction.

**Color Photographs.** Authors are encouraged to submit color illustrations. The expense of reproducing color photographs must be offset partially by the author. In 1996, the cost of color reproduction charged to authors will be $975 per color figure. If the illustration is a composite figure, the parts should be mounted together in as space-saving an arrangement as possible. All color illustrations must be submitted on flexible backing, including mounted composite figures. Please note that the author is responsible for submitting prints that are of sufficient quality to permit accurate reproduction, and for approving the final color proof. **Cancer Research** assumes no responsibility for the quality of the photograph as it appears in the Journal.

**Electronic Submission of Illustrations.** Authors may submit illustrations on disk. Contact the AACR Publications Department for a form to enclose with illustrations submitted on disk. Color electronic images should be provided in Encapsulated PostScript (EPS) format. Black and white illustrations should be provided in Tagged Image File Format (TIFF) and sized to approximate column width. In all cases, original artwork should also be submitted with the disk.

### ABBREVIATIONS

Abbreviations are in general a hindrance to readers in fields other than that of the author(s), to abstractors, and to scientists in foreign countries. Authors should limit their use to an absolute minimum. Single words should not be abbreviated, e.g., daunomycin, folate, vincristine. Abbreviations are not to be used in titles, but running titles may carry abbreviations for purposes of brevity. Abstracts may contain abbreviations for terms mentioned 3 or more times in that section but their identification is mandatory.

Authors should follow the recommendations of the IUPAC-IUB Commission on Biochemical Nomenclature (see section below on **Terminology**). All nonstandard abbreviations should be identified in an inclusive abbreviation footnote to the first such abbreviation after the Abstract.

Abbreviations that form recognizable words, such as EAT and MOPS, are discouraged.

**Standard Abbreviations.** Authors may use, without definition, the abbreviations in the following lists.

- NAD^+\text{nicotinamide adenine dinucleotide and its reduced form}
- NADPH^+\text{nicotinamide adenine dinucleotide phosphate and its reduced form}
- (DPN^+\text{and TPN}^+\text{and their reduced forms are not acceptable.})
- CoA, acyl-CoA coenzyme A and its acyl-derivatives (e.g., acetyl)
- AMP, GMP, IMP, UMP, CMP, TMP guanine, inosine, uracil, cytosine, and thymine
- ADP, etc. the 5′-phosphates of ribosyladenine, etc.
- ATP, etc. the 5′(pyro)-diphosphates of adenosine, etc.
- dAMP, dGMP, dIMP the 5′-phosphates of 2′-deoxyribosyl-adenine, etc.
- RNA, DNA ribonucleic acid, deoxyribonucleic acid
- RNase, DNase ribonuclease, deoxyribonuclease
- cDNA complementary DNA
- mRNA messenger RNA
- rRNA nuclear RNA
- rRNA ribosomal RNA
- iRNA transfer RNA (rRNA is not recommended for RNA preparations that accept amino acids.)
- P\_i orthophosphate, pyrophosphate
- Tris tris(hydroxymethyl)aminomethane
- EDTA ethylenediaminetetraacetic acid
- POPOP 1,4-bis(2-(5-phenylloxazolyl))benzene
- PPO 2,5-diphenyloxazole
- DEAE, TEAE diethylaminoethyl, triethylaminoethyl
- UV, IR ultraviolet, infrared
- RBC, WBC red blood cell(s), white blood cell(s)

#### Units of Concentration

- molar (moles/liter) \(\text{M}\) (not used for moles)
- millimolar (millimoles/liter) \(\text{mm}\) (preferred to \(10^{-3}\) \(\text{M}\))
- micromolar \(\text{\mu M}\) (preferred to \(10^{-6}\) \(\text{M}\))
- nanomolar \(\text{nm}\) (not \(\text{\mu M}\))
- picomolar \(\text{pm}\) (not \(\text{\mu M}\))

The expression \(\text{mg}\) \% should be avoided; weight concentrations should be given as \(\text{g}\) per \(\text{ml}\), \(\text{g}\) per \(\text{100 ml}\), \(\text{g}\) per liter, etc.

#### Units of Length, Area, Volume, Mass, Time

The abbreviations below are correct for both singular and plural forms of each term.

- meter \(\text{m}\)
- centimeter \(\text{cm}\)
- square centimeter \(\text{cm}^2\)
- millimeter \(\text{mm}\)
- micrometer (not micron) \(\text{\mu m}\) (not \(\mu\))
- nanometer (not millimicron) \(\text{nm}\) (not \(\mu\))
- picometer (not micromicron) \(\text{pm}\) (not \(\mu\))
- Angstrom (0.1 nm) \(\text{Å}\) not abbreviated
- milliliter \(\text{ml}\)
- microliter \(\mu\)l (not \(\lambda\))
- gram \(\text{g}\)
- milligram \(\text{mg}\)
- microgram \(\text{\mu g}\) (not \(\gamma\))

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Physical and Chemical Units

- Retardation factor: $R_i$
- Acceleration of gravity: $g$
- Sedimentation coefficient: $s$
- Sedimentation coefficient in water at 20$^\circ$C: $s_20,w$
- Degree Celsius (Centigrade): °C
- Degree Fahrenheit: °F
- Kelvin: K
- Diffusion coefficient: $D$
- Equilibrium constant: $K$
- Inhibition constant: $K_i$
- Michaelis constant: $K_m$
- Maximum velocity: $V_{max}$

Others

- Mole: mol
- Curie: Ci
- Equivalent: eq
- Counts per minute: cpm
- Disintegrations per minute: dpm
- Revolutions per minute: rpm
- Volt: V
- Svedberg unit: S
- Absorbance: A (not O.D.)
- Probability: $P$
- Roentgen: R
- Standard deviation: SD
- Standard error of the mean: SE
- Logarithm (Briggsian): log
- Logarithm (natural): ln
- Entropy: S
- Molecular weight: $M_i$
- Base pair: bp
- Kilobase: kb

In chemical compounds

- Ortho: o
- Meta: m
- Para: p
- Secondary: sec
- Tertiary: tert

Routes of administration

- Intramuscular: i.m.
- Intraperitoneal: i.p.
- Intravenous: i.v.
- Oral: p.o.
- Subcutaneous: s.c.

TERMINOLOGY

Approved terms and abbreviations for chemical substances have been collected in the Compendium of Biochemical Nomenclature and Related Documents, International Union of Biochemistry, Second Edition, 1992. This volume is available from: Portland Press Inc., Ashgate Publishing Co., Old Post Road, Brookfield, VT 05036; Phone: (802) 276-3162; FAX: (802) 276-3837. Included are all recommendations issued by the IUPAC-IUB Commission on Biochemical Nomenclature in the following areas: general abbreviations and symbols; abbreviations and symbols for chemical names of special interest in biological chemistry; stereochemistry; natural products and related compounds; isotopically labeled and modified compounds; biochemical equilibrium data; $\alpha$-amino acids; symbols for amino acid derivatives and peptides; synthetic modifications of natural peptides; synthetic polypeptides or polymerized amino acids; amine acid sequences; conformation of polypeptide chains; peptide hormones; human immunoglobulins, multiple forms of enzymes; nucleic acids, polynucleotides, and their constituents; lipids; steroids, quinones with isoprenoid side chains; carotenoids; tocopherols and related compounds; carbohydrates; cyclitols; phosphorus-containing compounds of importance in biochemistry; folic acids and related compounds; vitamins B$_6$ and related compounds; corrinoids.

Isotopically Labeled Compounds. A radioactive nuclide is indicated by its mass number as a superscript to the left of the symbol: $^{32}$P; when written out, it should correspond to the spoken word (phosphorus-32).

In an isotopically labeled compound, the isotopic prefix should be placed in square brackets and immediately precede the name (word) to which it refers, as in $[1^4]C$thymidine, $[\alpha-14]C$leucine, $\beta-3[H]$-3-hydroxykynurenine. When more than one position in a substance is labeled by means of the same isotope and the positions are not indicated, the number of labeled atoms is added as a subscript to the right of the element, as in $[1^4]CH$_glycolic acid. The symbol $U$ indicates uniform labeling of G and general labeling, e.g., $[U-1^4]C$glucose (where the $1^4$C is uniformly distributed among all six positions) and $[G.1^4]C$glucose (where the $1^4$C is distributed among all six positions, but not necessarily uniformly).

The isotopic prefix precedes that part of the name to which it refers, as in sodium $[1^4]C$formate, iodine $[1^4]C$-lactic acid, 1-amino$[1^4]C$-methyl-cyclopentanol, $\alpha$-napthyl$[1^4]$C-stearic acid, 2-acetamido-7-{$^{311}$I}iodofluorene, fructose $1^4$-C1-[3$^3$P]bisphosphate, 17$^3$-1$^4$Hestradiol. Terms such as $\beta$-labeled albumin should not be contracted to $\beta$"-labeled albumin" (since native albumin does not contain iodine), and $\gamma$-labeled amino acids should similarly not be written as $\gamma$"C"amino acids" (since there is no carbon in the amino group).

When isotopes of more than one element are introduced, their symbols should be arranged in alphabetical order, e.g., $[3,1^4]C$, 2,3-D: $15$N[serine]. Deuterium and tritium may be designated as $^2H$ and $^3H$ or as D and T, respectively.

When not sufficiently distinguished by the foregoing means, the positions of isotopic labeling are indicated by Arabic numerals, Greek letters, or prefixes in italics, as appropriate; these are to be placed within square brackets to appear before the symbol of the element concerned and are attached to it by a hyphen. Examples of this style are $[1-14]C$alanine, $\beta-[2-14]C$leucine or $\alpha-[\alpha-14]C$leucine, $[\alpha-carboxy-1^4]C$leucine, $[2,3-1^4]C$maleic anhydride, $[3,4,1^4]C$ mesityl$[1^4]$Cmethionine, $\gamma-3^3$C$[1^4]$methionine. The symbol indicating configuration always precedes the bracketed isotope, and a hyphen is used to separate it from the brackets, e.g., $\beta-[1^4]C$glucose, $\beta-[1^4]C$leucine.

The same rules apply when the labeled compound is designated by a standard abbreviation or symbol other than the atomic symbol, e.g., $[\alpha-32P]ATP$, $[\beta-3P]CMP$, or $[\gamma-32P]dUTP$. The square brackets are not to be used, however, with atomic symbols, or when the isotopic symbol is attached to a word that is not a specific chemical name, abbreviation, or symbol. Proper usage here is: $^{14}CO_2$, $^{3}H$_O, $^{3}H$_2SO$_4$, $^{31}P$, $^{14}$C-labeled, $^{14}$H-ligands, $^{14}$C-steroids.

Enzymes. Authors should use the Recommended Name given in Enzyme Nomenclature 1992: Recommendations of the Nomenclature Committee of the International Union of Biochemistry on the Nomenclature and Classification of Enzymes (Academic Press, Inc., Orlando, FL, 1992). In some cases the Systematic Name or the reaction catalyzed should also be included. It is strongly recommended that the Enzyme Commission number be stated at first mention.

For information on isozyme nomenclature, consult Biochemical Nomenclature and Related Documents, mentioned previously.

Histones. The six histone fractions are to be labeled H1, H1*, H2A, H2B, H3, and H4, rather than F1, F1*, F2a2, F2b, F3, and F2a1, respectively.

Interferon Assays. When reporting the calibration of interferon assays, authors should state the name, identifying number, and assigned potency of the international standard used to calibrate their assay, along with the observed geometric mean titer of the standard, the standard deviation of that value, the number of titrations performed to obtain that value, and the technical details of the assay.


Outbred Animal Stocks. Nomenclature for outbred laboratory animals should conform to that recommended by the Committee on Nomenclature, Institute of Laboratory Animal Resources: "A Nomenclature System for Outbred Animals," Lab. Animal Care, 20: 903-906, 1966. Generic names of drugs are preferred; the proprietary name may be used only after the first mention of the generic name and should be avoided in titles unless both names can be listed easily. If a foreign proprietary name is used, the name of the comparable U. S. product should be given. When there
is no generic name for a drug, authors should give the chemical name or formula or a description of the active ingredients. Authors should refer to the formally adopted generic names listed in USAN and the USP Dictionary of Drug Names (1996).

Tumors. Tumors used in experimental investigations should be clearly described and identified in acceptable terminology. If these tumors are well known and have been identified in previous publications, extended descriptions and photomicrographs are unnecessary. Authors of clinical papers are encouraged to use the TNM staging system approved by the International Union Against Cancer and the American Joint Committee on Cancer, whenever applicable.

General. The composition of all solutions and buffers should be specified in sufficient detail so that the concentration of each component can be determined. The word “saline” should be replaced by “NaCl solution,” along with the exact concentration. Inaccurate terms such as “physiological saline” or “phosphate-buffered saline” are not permitted; exact contents and concentrations should be given.

Decimals are preferred to fractions; the form 0.01, not .01, is required in text, tables, and illustrations. Ionic charge should be designated by a superscript immediately following the chemical symbol, e.g., Mg\(^2+\), S\(^-\).

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The American Association for Cancer Research (ACR), a scientific society of over 10,000 laboratory and clinical cancer researchers, was founded in 1907 to facilitate communication and dissemination of knowledge among scientists and others dedicated to the cancer problem; to foster research in cancer and related biomedical sciences; to encourage the presentation and discussion of new and important observations in the field; to foster public education, science education, and training; and to advance the understanding of cancer etiology, prevention, diagnosis, and treatment throughout the world.

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11. participation in Summer Workshops that foster networking opportunities and science education for young investigators; and
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- Receipt of Application in ACR Office
- Notification of Candidate

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American Association for Cancer Research
Public Ledger Building, Suite 816
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Philadelphia, PA 19106-3483
Phone: 215/440-9300
FAX: 215-440-9313

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Margaret Foti, Ph.D.
Executive Director
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LAST FIRST M.I. DATE OF BIRTH:

PRESENT POSITION/TITLE:

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Experimental Therapeutics

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

PUBLICATIONS (Reprints of two peer-reviewed 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. If submitting patents, supply patent number and year awarded.)

CANDIDATE NOMINATED BY*:

(Please print)

CANDIDATE SECONDED BY*:

(Please print)

CANDIDATE IS APPLYING FOR (Check one): □ ACTIVE □ CORRESPONDING MEMBERSHIP

STATEMENT OF SUPPORT

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

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 seconder* Date

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

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

(This form may be reproduced.)
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 are following a course of study or who are working in a research program relevant to cancer. Scientists in training who already have a substantial record of publications may wish to apply for active or corresponding membership which confers full benefits of membership.

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 facilitate communication and dissemination of knowledge among scientists and others dedicated to the cancer problem; to foster research in cancer and related biomedical sciences; to encourage presentation and discussion of new and important observations in the field; to foster public education, science education, and training; and to advance the understanding of cancer etiology, prevention, diagnosis, and treatment throughout the world. Associate members of the AACR enjoy the following benefits:

1. the privilege of sponsoring a paper for presentation at the AACR annual meeting provided that (a) the associate member is the presenter of the paper and (b) an active, corresponding, emeritus, or honorary member in good standing of the AACR also signs the abstract of the paper in support of the work (In this instance, the member who cosigns the abstract does not lose his or her own sponsorship privilege.);
2. an advance copy of the scientific 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 Association’s high-quality journals Cancer Research, Clinical Cancer Research, Cell Growth & Differentiation, and Cancer Epidemiology, Biomarkers & Prevention at reduced member rates;
6. priority notification of events in the AACR’s series of special conferences on timely subjects in the field;
7. reduced registration rates at special conferences;
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, corresponding, emeritus, or honorary 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 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 deferral within one month of the receipt of the application. A check for one year’s dues payment must accompany the application. Dues are currently $35 for associate members residing in the Americas and $45 for residents of other countries. 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 $35 or $45 dues payment to:

American Association for Cancer Research
Public Ledger Building, Suite 816
150 S. Independence Mall West
Philadelphia, PA 19106-3483
215/440-9300

RESPONSIBILITIES OF MEMBERSHIP

Associate members must pay annual dues in an amount to determined by the AACR Board of Directors. Dues for 1995 and 1996 have been set at $35 per year for residents of the Americas and $45 for residents of other countries. If an application submitted by August 31, the accompanying dues payment will credit to the current year. Candidates submitting applicative 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 associ- 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 November 1995 for a forthcoming annual meeting must have paid dues for 1995. A newly elected associate members of the AACR who have already purchased subscriptions to Cancer Research, Clinical Cancer Research, Cell Growth & Differentiation, and 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 registrant, 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 by January of the year to which they should be applied. An individual may an associate member for a maximum of five years. Each year in which an individual pays dues will count as one full year associate membership. Thus, an associate member who pays dues for 1995 may retain associate membership until December 1999. The Board of Directors may terminate the membership of associate member whose dues are in arrears for two years.

Margaret Foti, Ph.D.
Executive Director
APPLICATION FOR ASSOCIATE MEMBERSHIP

NAME OF CANDIDATE: ___________________________________________ DATE OF BIRTH: __________

LAST FIRST M.I. ________

INSTITUTIONAL AFFILIATION: ___________________________________________

INSTITUTIONAL ADDRESS: ___________________________________________

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

TELEPHONE NUMBER: __________________ FAX NUMBER: __________________

PRESENT ACADEMIC STATUS/TITLE (Please check only one): E-MAIL NUMBER (CARRIER): __________________

____ 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 in U.S. funds, made payable to AACR, Inc., and drawn on a U.S. bank for one year’s dues. Dues are currently $35 for associate members residing in the Americas and $45 for residents of other countries.

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 March or April of that year.) See Guidelines for Application on the reverse side of this form for further instructions.

*Nominee must be active, corresponding, emeritus, or honorary member of the AACR.

(This form may be reproduced.)
ADVANCE REGISTRATION FORM

AMERICAN ASSOCIATION FOR CANCER RESEARCH
87TH ANNUAL MEETING - WASHINGTON, DC - April 20-24, 1996

Return to
American Association for Cancer Research • Public Ledger Building, Suite 816
150 S. Independence Mall West • Philadelphia, PA 19106-3483 • FAX: 215-440-7228

DEADLINES:  • March 1, 1996 for reduced rates and to ensure receipt of meeting materials by mail in late March or early April
  • March 25, 1996 for all registration by mail (Registration forms received after this date will not be accepted.
  Registration will be conducted at the Washington Convention Center from April 20-24.)
  • April 17, 1996 to cancel registration and receive refund less cancellation fee ($35)

(Please print)

NAME: ________________________________ TITLE: ________________________________
Last First/Middle Initial Institution
Address: _____________________________________________________________
Institution
City, State or Province Zip/Postal Code Country (if not U.S.)

TELEPHONE NO.: ________________________ FAX NO.: _______________________

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

WHAT IS YOUR PRIMARY FIELD OF RESEARCH (Please check only one):
☐ Biochemistry and Biophysics ☐ Carcinogenesis ☐ Cellular Biology & Genetics ☐ Clinical Investigations
☐ Endocrinology ☐ Epidemiology ☐ Experimental Therapeutics ☐ Immunology ☐ Molecular Biology & Genetics
☐ Prevention ☐ Radiobiology/Radiation Oncology ☐ Virology ☐ Other (please specify): ________________________________

ARE YOU THE PRESENTER OF AN ABSTRACT SUBMITTED FOR THE 1996 AARC MEETING? ☐ Yes ☐ No
On which days will you attend the 1996 AARC ANNUAL MEETING?
☐ Saturday, April 20 ☐ Sunday, April 21 ☐ Monday, April 22 ☐ Tuesday, April 23 ☐ Wednesday, April 24

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.

<table>
<thead>
<tr>
<th>On or Before March 1</th>
<th>After March 1</th>
<th>METHOD OF PAYMENT</th>
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</thead>
<tbody>
<tr>
<td>☐ Active/Corresponding Member Rate</td>
<td>$135</td>
<td>$170</td>
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<tr>
<td>☐ Nonmember Rate (includes copy of AARC Proceedings)</td>
<td>$270</td>
<td>$340</td>
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<tr>
<td>☐ Emeritus Member Rate</td>
<td>$50</td>
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<tr>
<td>☐ Associate Member Rate*</td>
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<td>☐ Predoctoral Student Rate*</td>
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<tr>
<td>☐ Optional Overseas Surcharge*</td>
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<tr>
<td>☐ Proceedings on CD-ROM</td>
<td>$35 Members</td>
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<tr>
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<td>☐ Methods Workshop Registration</td>
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<td>$50 Members</td>
</tr>
<tr>
<td>☐</td>
<td>$75 Nonmembers</td>
<td>$75 Nonmembers</td>
</tr>
</tbody>
</table>

TOTAL ENCLOSED OR CHARGED $______ $______

☐ Check payable to AARC, Inc. in U.S. currency, drawn on a
U.S. bank

☐ MasterCard ☐ VISA ☐ American Express ☐ Eurocard

Person/Institution Issuing Check

Check No.

Card Number

Expiration Date

Signature

*An application for Associate Membership may accompany this form, but these should be submitted well before the March 1 deadline, as review of the Associate Membership application
may delay registration.

*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.

*AARC members with paid-up subscriptions to an AARC journal and registrants who pay the nonmember fee receive the Proceedings automatically. If these members or nonmembers
check this box and pay the 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 airmail—printed matter before the annual
meeting. This service is not available after March 1.

AARC members in good standing will receive copies of the Program and Proceedings prior to the meeting. Nonmember and student registrants who meet the March 1 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 AARC Office by April 17, 1996. Requests received after this date will not be honored. Receipts and badges
(if they have been mailed) must be returned to the AARC Office with the refund request. A cancellation fee of $35 will be deducted from all refunds to cover administrative costs.
AMERICAN ASSOCIATION FOR CANCER RESEARCH

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 and its purposes are "to facilitate communication and dissemination of knowledge among scientists and others dedicated to the cancer problem; to foster research in cancer and related biomedical sciences; to encourage presentation and discussion of new and important observations in the field; to foster public education, science education, and training; and to advance the understanding of cancer etiology, prevention, diagnosis, and treatment throughout the world." Members of the AACR enjoy the following benefits:

1. the opportunity to subscribe to the journals Cancer Research, Cell Growth & Differentiation, Cancer Epidemiology, Biomarkers & Prevention, and Clinical Cancer Research at the reduced member rate.
   - Cancer Research publishes over 7,000 pages per year of timely, significant research. With over 40,000 citations to its articles per year, it rates as the most highly cited journal in the cancer field.
   - Cell Growth & Differentiation, a journal of the molecular biology of cancer, has established a tradition of rapid publication with an average review time of 2-3 weeks and an average of 10 weeks between acceptance and publication.
   - Cancer Epidemiology, Biomarkers & Prevention has already established itself as a leading journal with a wholly unique scope, providing a common forum for three scientific areas that are rapidly expanding our knowledge of cancer causation and prevention in humans.
   - Clinical Cancer Research, the AACR's newest journal, began publication in 1995. Focusing on innovative translational studies, it publishes original laboratory and clinical research on the molecular characterization, prevention, diagnosis, and therapy of human cancer.

2. the privilege of sponsoring a paper for possible presentation at the AACR Annual Meeting;

3. an advance copy of the Program and, if one has been purchased, Proceedings pertaining to each Annual Meeting;

4. reduced registration rates at Annual Meetings;

5. priority notice of and reduced registration rates for small, focused meetings in the AACR's Special Conferences in Cancer Research;

6. opportunities for participation in the AACR's meetings with other scientific societies around the world;

7. subscriptions to future AACR journals at reduced member rates;

8. the receipt of AACR newsletters and meeting announcements;

9. early notification of and reduced rates for participation in the Employment Register;

10. an up-to-date Membership Directory;

11. participation in Summer Workshops that foster networking opportunities and science education for young investigators;

12. the benefits of the AACR's public education activities concerning funding for cancer research and press coverage of the latest research findings; and

13. many more ongoing benefits.
CALL FOR RESERVATIONS EARLY!
DEADLINE - MARCH 21, 1996

General Information
Please read this page before calling the Washington Convention and Visitors Association (WCVA) Housing Service.

Deposits
A $125.00 per room deposit is required, payable by credit card or check.

- Credit card - Your credit card will be charged immediately. Most major credit cards are accepted. Your room confirmation will be sent upon acceptance of your credit card charge.

- Check - An invoice for the $125.00 per room deposit will be mailed to you. Payment must be received within 15 days of the invoice date or your reservation will be cancelled. Do not send payment without an invoice stub. Your room confirmation will be sent upon receipt of check.

Changes
- Prior to March 21, 1996, all changes should be made with the WCVA Housing Service. After March 21, changes should be made with the hotel.

Cancellations/Refunds
- Cancellations made prior to March 21, 1996 should be made with the WCVA Housing Service and will be refunded in full. The WCVA Housing Service will issue the refund.

- Cancellations made after March 21, and prior to 72 hours of arrival should be made with the hotel. A $10.00 service fee will be deducted from your deposit. The hotel will issue the refund.

Instructions
Call the WCVA Housing Service, Monday through Friday, from 9:00 a.m. to 5:00 p.m. Eastern Time. The hotels will not accept reservations directly.

- Conferees in the United States and Canada -- call 1-800-535-3336.
- Conferees in the Washington, D.C., area and International Conferees -- call 202-842-2930.
- International Conferees ONLY -- FAX 202-289-8079.

Tell the WCVA Housing Service operator you are calling for the AACR Annual Meeting hotel reservations. Please have the following information ready:

1. Hotel preference (1st, 2nd, and 3rd choices)
2. Arrival and departure dates and times (indicate arrival after 6:00 p.m.)
3. Number of rooms required
4. Accommodations desired
   Single
   Double (1 bed, 2 people)
   Twin (2 beds, 2 people)
   Triple
   Quad (2 double beds, 4 people)
   Suite
5. Number of people in party
6. Credit card name, account number, name as it appears on card, and expiration date
7. Names of all occupants of room(s)
8. Address
9. Daytime telephone number with area code
10. FAX number with area code
11. Special requests (disability, smoking/nonsmoking, king-size bed, etc.)

Inquiries
Washington Convention & Visitors Association
Housing Service
1212 New York Avenue, N.W.
Washington, D.C. 20005-3992
MAP OF WASHINGTON, D.C. SHOWING HOTELS RESERVING ROOMS FOR AACR REGISTRANTS

Numbers in circles correspond to hotels listed on opposite page.

Key
A. White House
B. Union Station
C. U.S. Capitol
D. Smithsonian Institution
E. Jefferson Memorial
F. Washington Monument
G. Lincoln Memorial
H. Department of State
I. Arlington Cemetary
J. Supreme Court
K. Library of Congress
HOTELS IN WASHINGTON, D.C.
RESERVING ROOMS FOR AACR REGISTRANTS

<table>
<thead>
<tr>
<th>MAP NUMBER</th>
<th>HOTEL NAME</th>
<th>SINGLE</th>
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<tbody>
<tr>
<td>1</td>
<td>Grand Hyatt Washington*</td>
<td>$168</td>
<td>$188</td>
</tr>
<tr>
<td>2</td>
<td>Renaissance Washington, D.C. Hotel*</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Main Hotel</td>
<td>$154</td>
<td>$174</td>
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<tr>
<td></td>
<td>Renaissance Club - Tower</td>
<td>$174</td>
<td>$194</td>
</tr>
<tr>
<td>3</td>
<td>The Bellevue Hotel</td>
<td>$109</td>
<td>$124</td>
</tr>
<tr>
<td>4</td>
<td>The Capital Hilton</td>
<td>$179</td>
<td>$199</td>
</tr>
<tr>
<td>5</td>
<td>The Comfort Inn</td>
<td>$ 99</td>
<td>$ 99</td>
</tr>
<tr>
<td>6</td>
<td>Days Inn Downtown</td>
<td>$ 99</td>
<td>$ 99</td>
</tr>
<tr>
<td>7</td>
<td>The Henley Park Hotel</td>
<td>$157</td>
<td>$177</td>
</tr>
<tr>
<td>8</td>
<td>Holiday Inn Central</td>
<td>$105</td>
<td>$105</td>
</tr>
<tr>
<td>9</td>
<td>Holiday Inn Franklin Square</td>
<td>$105</td>
<td>$105</td>
</tr>
<tr>
<td>10</td>
<td>Holiday Inn on the Hill</td>
<td>$129</td>
<td>$139</td>
</tr>
<tr>
<td>11</td>
<td>Hotel Washington</td>
<td>$150</td>
<td>$150</td>
</tr>
<tr>
<td>12</td>
<td>Marriott at Metro Center</td>
<td>$159</td>
<td>$159</td>
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<tr>
<td>13</td>
<td>Phoenix Park</td>
<td>$150</td>
<td>$170</td>
</tr>
<tr>
<td>14</td>
<td>Stouffer Renaissance Mayflower Hotel</td>
<td>$169</td>
<td>$199</td>
</tr>
<tr>
<td>15</td>
<td>The Washington Court</td>
<td>$160</td>
<td>$160</td>
</tr>
<tr>
<td>16</td>
<td>The Washington Vista</td>
<td>$155</td>
<td>$165</td>
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</tbody>
</table>

*Co-Headquarters

ALL RATES ARE SUBJECT TO A 13% DISTRICT OF COLUMBIA TAX AND A $1.50 OCCUPANCY TAX PER ROOM PER NIGHT.

HOTEL DESCRIPTIONS
(Descriptions Provided by Individual Hotels)

1. GRAND HYATT HOTEL (co-headquarters)
The Grand Hyatt Hotel is a 12-story, 907-room hotel including a Regency Club. The hotel is 15 minutes from the Washington National Airport. It is across from the Washington Convention Center, one block from the Metro Subway, and walking distance to the White House, Ford's Theatre, Lincoln Museum, National Portrait Gallery, FBI Headquarters, and Chinatown. The hotel includes complete health facilities with an indoor pool, sauna, and steam room.
1000 H Street, NW • (202) 582-1234
Rates: Single $168 Double $188

2. RENAISSANCE WASHINGTON HOTEL (co-headquarters)
Standing proudly at the corner of 9th Street and New York Avenue, the Renaissance Washington DC Hotel Downtown is directly across from the Washington Convention Center and close to every major Washington attraction. Midway between the White House and the Capitol and two blocks from the Metro subway, the hotel is within walking distance of the Smithsonian museums, the National Art Gallery, and Ford's Theatre. The hotel is located just 5 minutes from Union Station, 10 minutes from Washington National Airport, and 40 minutes from both Dulles and Baltimore/Washington International.
999 9th Street, NW • (202) 898-9000
Rates: Main Hotel Single $154 Double $174 Renaissance Club Single $174 Double $194

3. THE BELLEVUE HOTEL
The Bellevue Hotel is charming, comfortable, and convenient. The hotel has recently been renovated from top to bottom. Everything is convenient to the hotel. Walk three blocks to the U.S. Capitol. The Smithsonian museums and the Mall are only five blocks away...and all of the Nation's Capital is easily accessible via Washington's beautiful new Metrorail subway, just a block and a half from the door in Amtrak's newly restored Union Station. Rub elbows with the elite of Capitol Hill in the Bellevue Hotel's Tiber Creek Pub, a long established dining and gathering place.
(om rates include breakfast.)
15 E Street, NW • (202) 638-0900
Rates: Single $109 Double $124

4. CAPITAL HILTON
The Capital Hilton is near the White House. Its restaurants offer light, casual meals and international cuisine from the Capital Hilton's award winning chef. The hotel has a health club, business center, and a lobby bar. Children who occupy the same room as parents stay free.
1001 16th Street, NW • (202) 393-1000
Rates: Single $179 Double $199

5. COMFORT INN DOWNTOWN
Just 4 blocks to the Convention Center, 1 1/2 blocks to the Metro station, 6 blocks to Union Station, major sites and attractions. Direct dial telephone, AM/FM radio, color tv's with Showtime, ESPN, Pay Movies, Nintendo, and individually controlled heat and air conditioning units. Cafe serves breakfast, lunch, and dinner. FEMA approved.
500 H Street, NW • (202) 289-5959
Rates: Single/Double $99
6. DAYS INN DOWNTOWN
The Days Inn is a comfortable, 220-room hotel located at 1201 K Street NW, in the heart of the business district. Conveniently located to the Washington, D.C. Convention Center, and just 3 short blocks from the Metro Center. Walking distance to most historical attractions, shopping and restaurants. The hotel offers newly renovated sleeping rooms, a restaurant, and lounge on the second floor, roof top pool (seasonal), and health facilities.

1201 K Street, NW • ☏ (202) 842-1020
Rates: Single/Double $99

7. THE HENLEY PARK HOTEL
Located one and a half blocks from the Convention Center, the hotel is on the National Register for historic places. Rooms have Queen Anne style furnishings with modern conveniences such as two-line speaker phones with voice mail, fax and computer modem, fitness center, concierge, valet, 24-hour room service, complimentary newspaper, and complimentary limousine weekday mornings. Non-smoking rooms. Award winning Coeur de Lion Restaurant and Marley's Lounge features live entertainment. Traditional afternoon tea in the Wilkes Room daily.

926 Massachusetts Avenue, NW • ☏ (202) 638-5200
Rates: Single $157 Double $177

8. HOLIDAY INN CENTRAL
The Holiday Inn Central incorporates a beautiful new design and theme of contemporary elegance. We are centrally located in the heart of Washington, D.C.'s sightseeing and business district with major attractions, four-star restaurants, and shopping only minutes away. The newly refurbished guest rooms and parlor suites have been decorated in soothing colors. Each room is appointed with remote-control cable TV, in-room movies, hair dryers, coffee makers, irons and much more! The hotel offers secure underground parking, a quaint full-service restaurant, cocktail lounge, room service, fitness room, game room and a seasonal rooftop swimming pool with a spectacular view! Other luxuries include an electronic key system, voice messaging, fax machine, safety deposit boxes, same-day laundry and valet, plus a complete gift and sundry shop.

Rhode Island Ave. at 15th St. NW • ☏ (202) 483-2000
Rates: Single/Double $105

9. HOLIDAY INN FRANKLIN SQUARE
Located five blocks from the Convention Center and the White House, the hotel is three blocks from the McPherson Metro Stop and within a mile of the museums, monuments, and memorials. The Holiday Inn Franklin Square offers convenience, service, and comfort with its newly renovated rooms, cable TV with free premium channels and On Command movies, and valet parking. Enjoy breakfast or dinner at the Filbuster's restaurant. Non-smoking rooms are available.

1155 14th Street, NW • ☏ (202) 737-1200
Rates: Single/Double $105

10. HOLIDAY INN ON THE HILL
The Holiday Inn on the Hill is a charming deluxe property located two blocks from our Nation's Capitol. Senators All American Sports Cafe serves breakfast, lunch, and dinner, and provides a great atmosphere for any sports fanatic. Minutes away from D.C. National Airport by taxi or metro, the hotel has below-ground on-premises parking with 24-hour security. At the end of the day when business is through, visit the neighborhood monuments, shop at historic Union Station, or unwind in the fully equipped exercise room and sauna.

415 New Jersey Avenue, NW • ☏ (202) 638-1616
Rates: Single $129 Double $139

11. HOTEL WASHINGTON
The Hotel Washington is in Washington's premier location adjacent to the White House, walking distance to all the major sightseeing, restaurants, shopping, and theaters. Three restaurants including an open air Roof Top bar and restaurant. Hotel Washington is the oldest continuously operated hotel in Washington and is a National Historic Landmark.

515 15th Street, NW • ☏ (202) 638-5900
Rates: Single/Double $150

12. MARRIOTT AT METRO CENTER
The Marriott at Metro Center is situated in downtown Washington, D.C. at 12th and "H" Streets, NW, adjacent to Metro Center, the main station of Washington's subway system. Set in the heart of the Nation's Capital, the hotel is only a few blocks from the White House. The city's Convention Center is one block away and National Airport is only fifteen minutes via metro or taxi; Dulles Airport is 30 minutes away. Each guest room is complete with same day laundry, valet, and concierge services. The hotel restaurant features an exhibition cooking area with a club-like casual ambiance. Additionally, the health club boasts an indoor pool, Jacuzzi, sauna, and exercise equipment. Business travelers will also enjoy the new televised reservation system and data ports in every room.

775 12th Street, NW • ☏ (202) 737-2200
Rates: Single/Double $159

13. PHOENIX PARK HOTEL
America's center of Irish Hospitality, Washington's Phoenix Park Hotel combines Celtic charm with an ideal Capitol Hill location. Just one block from Union Station and two blocks from the US Capitol, the Phoenix Park is the ideal location for the business traveller. The hotel has two restaurants, the critically acclaimed Powerscourt draws Washington's power brokers with an innovative menu and impeccable surroundings. The Dubliner Pub has a convivial Celtic staff, hearty food and drink, and live entertainment nightly.

520 North Capitol Street, NW • ☏ (202) 638-6900
Rates: Single $150 Double $170

14. STOUFFER RENAISSANCE MAYFLOWER HOTEL
This AAA Four-Diamond and Mobil 4-Star Historic Hotel of America has been spectacularly restored. A fully equipped health and fitness center offers state-of-the-art exercise and weight options. Complimentary coffee and newspaper with morning wake-up call. Other facilities include: covered parking, laundry and valet services, complimentary overnight shoe shine, travel and tour arrangements, business center, gift shop, and newsstand. Nonsmoking rooms and facilities for the disabled available.

1127 Connecticut Avenue, NW • ☏ (202) 347-3000
Rates: Single $169 Double $199

15. THE WASHINGTON COURT
The Washington Court Hotel is located 3 blocks from the U.S. Capitol, on New Jersey Avenues between E and F Streets. The hotel is only 5 minutes from the heart of downtown and 15 minutes from the National Airport. Union Station is 2 blocks away and offers an array of specialty shops, eateries, restaurants, and special services. Metrorail and Amtrak make almost any area of the country accessible. Each guest room features a writing desk, remote control t.v., alarm clock with radio, viewers choice of movies, fully stocked honor bar, and iron with ironing board. Many of the rooms offer a full Capitol view. All the rooms have marble bathrooms which include a complete array of accessories, a lighted make-up mirror, hairdryer, and an additional telephone and television. Newspapers are delivered daily on a complimentary basis.

525 New Jersey Avenue, NW • ☏ (202) 628-2100
Rates: Single/Double $160

16. THE WASHINGTON VISTA HOTEL
The Washington Vista has undergone an extensive renovation of guest rooms and public areas. Guest rooms feature state of the art fire-life safety systems, king or two double beds, writing desk and sitting areas, remote controlled color television with pay for view and on demand movies as well as video check-out, three phones per room with voice mail and computer port, fully stocked refrigerators-mini bars, and marble bath with hair dryers and vanity mirrors. The hotel offers a new Business Service Center. Complimentary access to the Fitness Center with the latest aerobic equipment and cardio-vascular machines and Finnish saunas in both the men's and women's rooms is included. The Verandah restaurant features Continental cuisine. The Federal Bar offers light fare and drinks for lunch and dinner. The Tower lounge overlooks the dramatic 12 story atrium lobby and is open in the evenings. Room service is open 24 hours. Valet parking is available.

1400 M Street, NW • ☏ (202) 429-1700
Rates: Single $155 Double $165
Guidelines for Submitting Disks to American Association for Cancer Research Publications

The word processing packages that we prefer are as follows:

MacWrite
Microsoft Word (DOS, Windows, and Macintosh)

WordPerfect (DOS, Windows, and Macintosh)
XyWrite (DOS and Windows)

Also acceptable:

Ability
AmiPro
\(A_s\)TeX
Appleworks
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PFS First Choice
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Wang WPS
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Window Works
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WiziWord
Wordstar
Wordstar 2000
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Software packages that we are unable to translate:

FrameMaker
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Ready, Set, Go
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Proteases and Protease Inhibitors

March 1-5, 1996
Marriott's Bay Point Resort
Panama City Beach, FL

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Keynote Address
Ben M. Dunn / Gainesville, FL

Structure/Function Relationships for Proteases and Inhibitors
Judith S. Bond / Hershey, PA
Charles S. Craik / San Francisco, CA
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William G. Stetler-Stevenson / Bethesda, MD

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Function in Multicellular Systems
Susan J. Fisher / San Francisco, CA
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Cancer Invasion and Metastasis
Wen-Tien Chen / Washington, DC
Rama Khokha / London, Ontario, Canada
Ann F. Chambers / London, Ontario, Canada
Liliana Ossowski / New York, NY
Carlos Lopez-Otín / Oviedo, Spain

Clinical Applications
Ann R. Kennedy / Philadelphia, PA
Tamara Lah / Ljubljana, Slovenia
Andrew P. Docherty / Slough, England
John A. Foekens / Rotterdam, The Netherlands

Information and Application Forms:
American Association for Cancer Research
Public Ledger Building, Suite 816
150 South Independence Mall West
Philadelphia, PA 19106-3483
215-440-9300 215-440-9313 (FAX)
87th AACR Annual Meeting
Preliminary Program
(Names of session chairpersons are underlined.)

SATURDAY, APRIL 20, 1996

11:00 a.m.-8:00 p.m. Registration

12:00 noon-6:30 p.m. Educational Sessions
ED1 Human Pharmacogenetics, William E. Evans, Denis M. Grant, Robert B. Diasio
ED2 Drug Development: Bench to Clinic, Robert L. Capizzi
ED3 The Cell Cycle, Michael B. Kastan, William G. Kaelin, Jr., Chi V. Dang
ED4 Technical Aspects of Genomic Subtraction, Glen A. Evans
ED5 Combinatorial Libraries
ED6 Transcriptional Factors, Regulation, and Reaction to Injury

2:00 p.m.-6:00 p.m. Methods Workshops (Separate registration required)
WK1 Quantitative Biology and Pharmacodynamics, Robert C. Jackson, Robert L. Redlich, Mark J. Ratain, William R. Greco
WK2 Animal Models: Transgenic and Knockout Mice in Cancer Investigations, Terry Van Dyke

6:30 p.m.-8:00 p.m. Women in Cancer Research Guest Lecture Opening Reception

8:00 p.m.-10:00 p.m. Opening Mixer

2:15 p.m.-5:15 p.m. Symposia
S1 Tumor Suppressor Genes, Bert Vogelstein, Yosef Shiloh, Todd Waldman, Alexander Kamb, Allan Bradley, Richard D. Klausner
S2 Ovarian Cancer: From the Laboratory to the Clinic, Robert F. Ozols, Thomas C. Hamilton, Steven A. Narod, E.G. Elisabeth de Vries, David T. Curiel
S4 Monoclonal Antibodies: Clinical Effectiveness, Ellen S. Vitetta, Mark Slawowski, Pamela A. Trail, Dana C. Matthews
S5 Cancer in the Socioeconomically Disadvantaged. Organized by the AACR Minority Issues Committee.

5:30 p.m.-6:30 p.m. New Clinical Research Award Lecture
(sponsored by Bristol-Myers Squibb Oncology)

6:30 p.m.-9:00 p.m. Minority Issues Careers Symposium

7:00 p.m.-10:30 p.m. Annual Reception

SUNDAY, APRIL 21, 1996

7:00 a.m.-4:00 p.m. Registration

7:00 a.m.-8:00 a.m. Sunrise Sessions
SUN1 Diane F. Birt: Mechanisms of Dietary Prevention of Cancer
SUN2 William S. Dalton: Challenges in Bone Marrow Transplantation
SUN3 Ronald B. Herberman: Natural Killer Cells
SUN4 Rakesh K. Jain: Tumor Pathophysiology: Role in Delivery of Molecules, Particles, and Cells
SUN5 Lovell A. Jones: Estrogens and Breast Cancer
SUN6 Stanley J. Korsmeyer: Bcl and Cell Death
SUN7 Funmi I. Olopade: Chromosomal Deletions and Cancer: Recent Advances in Mapping Techniques

8:00 a.m.-12:00 noon Poster Discussion Sessions

8:00 a.m.-12:00 noon Poster Sessions

8:15 a.m.-11:45 a.m. Minisymposia

8:15 a.m.-11:30 a.m. Plenary Session
Twenty-fifth Anniversary of the National Cancer Act: Progress and Promise, Joseph R. Bertino, Harold E. Varmus, Arnold J. Levine, Susan Band Horwitz, Paul Talalay, James F. Holland, Lloyd J. Old

11:45 a.m.-12:45 p.m. 35th Clowes Award Lecture

12:30 p.m.-5:00 p.m. Commercial Exhibit Show

1:00 p.m.-2:00 p.m. Controversy Session 1
Is Beta-Carotene Useful in Cancer Prevention?, Woon Ki Hong, Frank L. Meykens, Jr., E. Robert Greenberg

Controversy Session 2
Have Preclinical Models In Studies of Drug Resistance Provided Accurate Predictions for Clinicians?, Bruce A. Chabner, Susan E. Bates, Herbert M. Pinedo

1:00 p.m.-5:00 p.m. Poster Discussion Sessions

1:00 p.m.-5:00 p.m. Poster Sessions

1:45 p.m.-5:15 p.m. Minisymposia

MONDAY, APRIL 22, 1996

7:00 a.m.-4:00 p.m. Registration

7:00 a.m.-8:00 a.m. Sunrise Sessions
SUN8 Peggy J. Farnham: Nuclear Oncogenes: Effects on Cell Cycle Regulation and Neoplastic Transformation
SUN9 John Gribben: Quantitative PCR as a Tool to Detect Minimal Residual Disease in Lymphoma and Leukemia
SUN10 Stephen S. Hecht: Chemoprevention of Cancers Associated with Tobacco Use
SUN11 V. Craig Jordan: Antiestrogens
SUN12 Philip Livingston: Specific Immunotherapy of Melanoma
SUN13 John A. McLachlan: Environmental Carcinogens: Their Impact in Cancer
SUN14 Daniel Medina: Mammary Carcinogenesis

7:00 a.m.-8:00 a.m. WCR Networking Session

8:00 a.m.-11:00 a.m. Symposia
S6 Steroid Hormones: Breast and Prostate Cancer, Myles A. Brown, Donald P. McDonnell, Benita S. Katzenellenbogen, Roger L. Miesfeld, Norman M. Greenberg
S7 Matrix Metalloproteinases and Their Inhibitors, Lynn M. Matrisian, Ruth J. Muschel, Motoharu Seiki, Yves DeClerck, Peter Brown
S8 Recent Developments in Gene Therapy, Drew M. Pardoll
S9 Viral Mechanisms of Carcinogenesis, Harald zur Hausen, David M. Livingston, Yuan Chang, Kathleen R. Cho, William Robinson

8:00 a.m.-12:00 noon Poster Discussion Sessions

8:00 a.m.-12:00 noon Poster Sessions

8:15 a.m.-11:45 a.m. Minisymposia

10:00 a.m.-4:00 p.m. Commercial Exhibit Show

11:45 a.m.-12:45 p.m. Presidential Address: Joseph R. Bertino
TUESDAY, APRIL 23, 1996

7:00 a.m.-4:00 p.m.  Registration

7:00 a.m.-8:00 a.m.  Sunrise Sessions
SUN15 Robert L. Comis: Lung Cancer: A Primer
SUN16 Jerry D. Glickson: NMR As a Prognosticator
SUN18 Susan Jakobs: Protein Kinase C in Cell Transformation
SUN18 Jay A. Levy: Immunologic Features of AIDS Pathogenesis
SUN19 Yves G. Pommier: DNA Topoisomerases and Their Inhibitors
SUN20 Barrett J. Rollins: Chemokines and Leukocyte-specific Chemotactic and Activating Factors
SUN21 Stephen E. Sallan: Childhood Leukemias: The Latest in Treatment

7:00 a.m.-8:00 a.m.  NIH Grants Session

8:00 a.m.-11:00 a.m.  Symposium
S14 Endogenous DNA Damage: Detection and Biological Significance, John M. Esserman, Leona D. Samson, B. Singer, Lawrence J. Marnett, Lawrence A. Loeb
S15 Targeting Growth Factor Receptors for Therapy, John Mendelsohn, Thomas A. Waldmann, David W. Golde, Ira Pastan, Alexander Levitzki
S16 Aberrant Transcription Factors and Malignancy, Lorraine J. Gudas, A. Thomas Look, Anne Dejean, Christopher T. Denny, Terry H. Rabbits
S17 Thymidylate Synthase and Its Inhibitors, Frank Maley, Edward Chu, Gary K. Smith, William R. Montfort, Bruce J. Dolnick

1:00 p.m.-2:00 p.m.  Poster Discussion Sessions
1:00 p.m.-2:00 p.m.  Poster Sessions
1:05 p.m.-4:45 p.m.  Minisymposia
11:00 a.m.-5:00 p.m.  Commercial Exhibit Show
11:45 a.m.-12:45 p.m.  20th Rosenthal Award Lecture
1:00 p.m.-2:00 p.m.  Late-breaking Research Session
1:00 p.m.-5:00 p.m.  Poster Discussion Sessions
1:00 p.m.-5:00 p.m.  Poster Sessions

WEDNESDAY, APRIL 24, 1996

7:00 a.m.-2:00 p.m.  Registration

7:00 a.m.-8:00 a.m.  Sunrise Sessions
SUN22 Ernest C. Borden: Interferons in Cancer
SUN23 Richard A. Heyman: Transcription Factors As Therapeutic Targets
SUN24 Theodore S. Lawrence: Radiation Sensitization
SUN25 Eric K. Rowinsky: Drugs Which Interact with Microtubules: An Update
SUN26 Jeffrey Schlam: Tumor Vaccines
SUN27 Peter D. Senter: Prodrugs for Cancer Chemotherapy
SUN28 Martha R. Stampler: Culturing Normal and Neoplastically Transformed Human Epithelial Cells

8:00 a.m.-11:00 a.m.  Symposium
S22 Cell Adhesion Molecules and the Cytoskeleton, Jun-Lin Guan and Rudolph L. Juliano, Thomas P. Stossel, Paul Polakis, Eva Ann Turley
S23 Drug Metabolizing Enzymes in Cancer Prevention and Therapy, Cecil B. Pickett, F. Peter Guengerich, Frank J. Gonzalez, Chung S. Yang
S24 The Cell Cycle and Damage Response Pathways: Potential Targets for Therapy, Stephen H. Friend, Frank McCormick, David Beach, James M. Roberts, Paul A. Marks, Nick J. Dyson

8:00 a.m.-12:00 noon  Poster Discussion Sessions
8:00 a.m.-12:00 noon  Poster Sessions
8:15 a.m.-11:45 a.m.  Minisymposia
11:45 a.m.-12:45 p.m.  15th Cain Award Lecture:
1:00 p.m.-2:00 p.m.  Controversy Session 4
Is p53/Rb Important for Therapeutic Outcome?, William F. Benedict, Carlos Cordon-Cardo, David Sidransky

Controversy Session 5
Should Genetic Testing Be Done on Patients to Assess Cancer Risk?
Judy E. Garber

1:00 p.m.-5:00 p.m.  Poster Discussion Sessions
1:00 p.m.-5:00 p.m.  Poster Sessions
1:45 p.m.-5:15 p.m.  Minisymposia
2:15 p.m.-5:15 p.m.  Symposium
S25 Tumor Angiogenesis, Judah Folkman and Mark A. Goldberg, Webster K. Cavenee, Richard I. Weiner, Philip E. Thorpe
S26 Genetic Predisposition to Cancer, Mark H. Skolnick, Sean Tavtigan, Richard D. Kolodner, William B. Isaacs, Francis S. Collins

1996 RESEARCH FELLOWSHIPS
For Young Scientists at the Postdoctoral or Clinical Fellow Level

- **1996 Research Fellowship in Clinical/Translational Research:** This Fellowship, sponsored by Amgen, Inc., will provide a one-year grant of $30,000 to a young scientist in the U.S. or Canada engaged in meritorious clinical or translational cancer research.

- **1996 Research Fellowship in Basic Research:** This Fellowship will provide a one-year grant of $30,000 to a young scientist in the U.S. or Canada engaged in meritorious basic cancer research.

- These Research Fellowships will be awarded at the AACR Annual Meeting in Washington, DC, in April 1996.

- An additional Research Fellowship in Clinical Research will be available in 1997, sponsored by Bristol-Myers Squibb Oncology.

**Eligibility**
Candidates must have completed the M.D., Ph.D., or other doctoral degree. Candidates must currently be a postdoctoral or clinical research fellow and must have been a fellow for at least two years but not more than five years prior to the year of the award. Academic faculty holding the rank of assistant professor or higher, graduate or medical students, government employees, and employees of private industry are not eligible. A candidate need not be a member of the AACR at the time of application, but he or she must be nominated by an AACR Member. Associate Members may not be nominators.

**Selection Process**
Applications will receive careful scientific evaluation by a prestigious Committee consisting of AACR Members who are experts in basic, clinical, and translational cancer research. Applications must be submitted in complete form by **February 15, 1996**.

**For Further Information/Application Forms**
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