

**AMERICAN CANCER SOCIETY  
CANCER CONTROL CAREER DEVELOPMENT AWARD  
FOR PRIMARY CARE PHYSICIANS**

**POLICIES**

Effective July 1, 2003 for applications to be received October 15, 2003,  
which, if awarded, would activate July 1, 2004.

This revision supersedes all previous versions.

**AMERICAN CANCER SOCIETY, INC.**

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**MISSION**

The American Cancer Society is the nationwide, community-based, voluntary health organization dedicated to eliminating cancer as a major health problem by preventing cancer, saving lives and diminishing suffering from cancer through research, education, advocacy, and service.

**CANCER CONTROL CAREER DEVELOPMENT AWARDS  
FOR PRIMARY CARE PHYSICIANS: POLICIES**

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## CANCER CONTROL CAREER DEVELOPMENT AWARD FOR PRIMARY CARE PHYSICIANS

### 1. THE EXTRAMURAL GRANTS PROGRAM OF THE AMERICAN CANCER SOCIETY

The American Cancer Society's Extramural Grants Program seeks to support and promote the best cancer-related research across a wide range of disciplines to meet critically important needs in the control of cancer.

Each year, the Society receives approximately 2,000 requests for research and health care professional training support. All proposals are subjected to multilevel peer review that identifies the most meritorious and innovative projects for funding. The Society offers extramural support in various areas.

#### Research Grants for Independent Investigators

- **Research Scholar Grants in Basic, Preclinical, Clinical and Epidemiology Research**—Support investigator-initiated research projects in basic, preclinical, clinical and epidemiologic research. Awards are for up to four years and for up to \$200,000 per year (direct costs), plus 20% allowable indirect costs. Grants may be renewed once for a four-year period. *Eligibility Criteria: Investigators in the first eight years of an independent research career or faculty appointment are eligible to apply.*
- **Research Scholar Grants in Psychosocial, Behavioral and Cancer Control Research**—Support investigator-initiated research projects in psychosocial, behavioral, and cancer control research, including epidemiologic approaches to psychosocial and behavioral research. Awards are for up to five years and for up to \$400,000 per year (direct costs), plus 20% allowable indirect costs. These grants may be renewed once for up to an additional five years. *Eligibility Criteria: Independent investigators at any stage of their research careers are eligible to apply. However, senior investigators are strongly encouraged to include as co-investigator a faculty member at an early stage of his/her career.*
- **Research Scholar Grants in Health Services and Health Policy Research**—Support investigator-initiated research projects in health services and health policy research. Awards are for up to four years and for up to \$200,000 per year (direct costs), plus 20% allowable indirect costs. These grants may be renewed once for a four-year period. *Eligibility Criteria: Independent investigators at any stage in their research career are eligible to apply. However, senior investigators are strongly encouraged to include as co-investigator a faculty member at an early stage of his/her career.*
- **Research Opportunity Grants**—Provide rapid, one-time funding for novel ideas or for targeting urgent problems with immediate human benefit. Awards are made for one year for up to \$60,000 (direct costs) plus 20% allowable indirect costs. There is no fixed application deadline; however, a letter of intent is required. *Eligibility Criteria: Independent investigators at any stage of their research careers are eligible to apply.*
- **Institutional Research Grants**—Awarded to institutions as block grants to provide seed money for independent junior investigators to initiate research projects. Grants are made for one to three years, and average \$120,000 per year.

- **Postdoctoral Fellowships**—Support the training of researchers who have received a doctorate enabling them to qualify for an independent career in cancer research (including basic, preclinical, clinical, cancer control, psychosocial, behavioral, epidemiology, health services and health policy research). Awards are for one to three years with progressive stipends of \$37,000, \$39,000, and \$42,000 per year, plus a \$2,000 per year institutional allowance. Depending on availability of special endowment funds, the Society annually selects one or more of the top-ranked fellows to receive special 3-year Fellowships with an award of \$144,000.

### **Mentored Training and Career Development Grants**

- **Mentored Research Scholar Grants in Applied and Clinical Research**—Support mentored training of junior faculty within the first four years of their faculty appointment to become independent investigators in clinical, cancer control, epidemiologic, psychosocial, behavioral, health services, or health policy research. Awards are for up to five years and for up to \$135,000 per year (direct costs), plus 8% allowable indirect costs. These grants are not renewable.
- **Cancer Control Career Development Awards for Primary Care Physicians**—Support primary care physicians, with a rank of instructor to assistant professor, who are pursuing an academic career with an emphasis on cancer control research teaching and practice. Awards are made for three years with progressive stipends of \$50,000, \$55,000, and \$60,000 per year.
- **Physician Training Awards in Preventive Medicine**—Awarded to institutions to support physician training in accredited preventive medicine residency programs that provide cancer prevention and control research and practice opportunities. Awards are for four years in the total amount of \$300,000, based on an average of \$50,000 per resident training year.

### **Predoctoral Training**

- **Doctoral Training Grants in Clinical Oncology Social Work**—Awarded to doctoral candidates to conduct research related to the psychosocial needs of persons with cancer and their families. Awards are for up to three years with annual funding of \$20,000 (trainee stipend of \$15,000, and \$5,000 for faculty/administrative support).
- **Master's Training Grants in Clinical Oncology Social Work**—Awarded to institutions to support the training of second-year master's-degree students to provide psychosocial services to persons with cancer and their families. The one-year awards are for \$12,000 (trainee stipend of \$10,000, and \$2,000 for faculty/administrative support).
- **Doctoral Degree Scholarships in Cancer Nursing**—Awarded to graduate students pursuing doctoral studies in the fields of cancer nursing research, education, administration, or clinical practice. Awards are for up to four years, with a stipend of \$15,000 per year.
- **Master's Degree Scholarships in Cancer Nursing**—Awarded to graduate students pursuing master's degrees in cancer nursing. Awards are \$10,000 annually for up to two years.

## Professorships

- **Research Professorships**—Awarded to outstanding mid-career investigators who are making groundbreaking contributions to basic cancer research. Up to two 5-year awards are made annually. They can be renewed once. The award of \$80,000 per year can be budgeted at the recipient's discretion.
- **Clinical Research Professorships**—Awarded to outstanding mid-career investigators who are making groundbreaking contributions to clinical or epidemiologic cancer research, including cancer control; clinical trials directed toward new therapeutic approaches; psychosocial, behavioral, health services, and health policy research. Translational laboratory research with clinical applications is also appropriate. Up to two 5-year awards are made annually. They can be renewed once. The award of \$80,000 per year can be budgeted at the recipient's discretion.
- **Professors of Clinical Oncology**—Awarded to outstanding clinicians and educators who will enhance cancer education in medical, dental and other appropriate schools, and foster multidisciplinary cooperation among professionals caring for persons with cancer. Awards are made for three to five years, with a maximum of \$40,000 per year. Applicants must be sponsored and funded by their local American Cancer Society Divisions.
- **Professors of Oncology Nursing**—Awarded to outstanding clinicians, educators, and researchers in oncology nursing who will enhance the cancer curriculum in graduate and undergraduate programs. The awards are made for three to five years with a maximum stipend of \$35,000 per year. Applicants must be sponsored and funded by their local American Cancer Society Division.

## International Programs

- **Audrey Meyer Mars International Fellowships in Clinical Oncology**—Provide one year of advanced training in clinical oncology at participating US cancer centers to qualified physicians and surgeons from other countries, particularly countries where advanced training is not readily available. This program is limited to non-US citizens and provides up to \$45,000 annually.
- **American Cancer Society UICC International Fellowships for Beginning Investigators**—Provide one-year fellowships of up to \$40,000 funded by the American Cancer Society to foster a bi-directional flow of knowledge, experience, expertise, and innovation between countries. Funding preference will be given to applicants who propose to conduct preclinical, clinical, epidemiology, psychosocial, behavioral, health services, health policy research or cancer control research. However, applications will be accepted from investigators proposing basic science projects. Application forms may be obtained from the UICC Fellowship Department at <http://fellows.uicc.org/>.

## Special Initiatives—Request for Applications (RFA)

- **Targeted Grants for Research Directed at Poor and Underserved Populations**—Provide support for research projects that focus on poor or underserved populations and address a variety of clinical, cancer control, behavioral, epidemiologic, health policy, health services, and basic science issues. Applications will be accepted via three mechanisms: Research Scholar Grants, Mentored Research Scholar Grants in Applied and Clinical Research, or a Postdoctoral Fellowship. *Eligibility Criteria: Independent investigators at any stage of their research careers may apply for the Research Scholar Grant; eligibility criteria for Mentored Research Scholar Grants in Applied and Clinical Research and Postdoctoral Fellowships are restricted as indicated in the description for these funding opportunities.*

## 2. DEFINITIONS OF RESEARCH AREAS

Incorporating recommendations of the Advisory Committee on Research and Medical Grants, the American Cancer Society uses the following definitions:

**Basic research:** Directed to understanding the events related to the development or prevention of cancer at the molecular, cellular, and organismic levels, as well as the discovery and development of new anticancer drugs or other anticancer therapies.

**Preclinical (clinically relevant) research:** Aims primarily at providing results applicable to the prevention, diagnosis or treatment of human cancer or to the rehabilitation of the cancer patient but which are not yet ready for use in humans.

**Epidemiology research:** Investigates the circumstances under which cancer occurs in populations, including the epidemiology of human behavior and lifestyle factors, as well as molecular epidemiology and gene-environment interactions.

**Clinical research:** Utilizes human subjects or materials and has direct application to the prevention, diagnosis, or treatment of cancer in the individual or group of individuals under study, or the rehabilitation (including quality of life issues) of the patient.

**Cancer control research:** Investigates how scientifically obtained information can be efficiently and effectively applied to defined groups of people or at the community level to reduce the burden of cancer.

**Psychosocial and behavioral cancer research:** Directed at understanding and improving the motivational factors in cancer prevention and screening, and the social and emotional impact of cancer and its treatment on individuals, their families, and their caregivers.

**Health services research:** Examines the interface of the health care system with patients, with the goal of improving access and reducing barriers to optimal health care.

**Health policy research:** Examines the effects of public policy and laws on public health and access to care, and on reducing barriers to and disparities in health care.

## 3. AUTHORITY FOR MAKING GRANTS

Cancer Control Career Development Awards for Primary Care Physicians are made by the Chief Executive Officer, on behalf of the Board of Directors of the American Cancer Society.

## 4. PEER REVIEW OF APPLICATIONS

The Peer Review Committee on Primary Care Physician Training Award interviews applicants, reviews applications, recommends recipients, and reviews annual reports for the Cancer Control Development Award for Primary Care Physicians. Applicants for the CCCDA must be available to be interviewed by a person designated by the American Cancer Society. The Peer Review Committee also advises the Society on matters of policy governing the program. The members of the Peer Review Committee are experts in primary care physician practice, education and research related to cancer control, plus one or two “stakeholders.” A stakeholder is an individual with or without formal training as a scientist or health professional who has a strong personal interest in advancing the effort to control and prevent cancer through research and training. This interest could stem from an intimate experience with the disease, such as through survivorship, a family cancer experience, or through being a caregiver.

The Peer Review Committee evaluates: (a) the merit of the application, (b) the qualifications, experience and productivity of the applicant and of the mentor, (c) the training environment, (d) the facilities and resources available, and (e) the promise of the training and research as related to the control of cancer or to the benefit to be gained by the person with cancer. At the Peer Review Committee meeting, the applications are discussed and a priority score is voted for each one.

The evaluations of the committees are provided to the Council for Extramural Grants (the Council), a multidisciplinary panel of senior scientists and two stakeholders, most of whom have previously served on a Peer Review Committee. After considering the priority scores of the applications, the amount of available funds and the Society's objectives, the Council determines which grants will be funded. No member of a Peer Review Committee or of the Council may serve concurrently on the Board of Directors or the National Assembly of the American Cancer Society.

## **5. SOURCE OF FUNDS**

Funds of the American Cancer Society are obtained principally from public donations collected by more than two million volunteers. The amount available for grants and awards each year is contingent upon the previous year's collections.

To disseminate information about the Society's Extramural Grants Program to our volunteers and to the public, grantees are expected to occasionally give brief presentations of their research to professional audiences or the general public. All applicants are required to provide a summary of their research project in non-technical language. The summary should not exceed the space allotted in the application, but should explain the relevance of the project to cancer or a particular type of cancer in such a way that the stakeholders on the peer review committees can evaluate the potential contribution of the project to the conquest of cancer.

## **6. TO WHOM GRANTS ARE MADE**

Applicants must be, at the time of the application, U.S. citizens, non-citizen nationals or permanent residents of the U.S. Permanent residents must submit with the application notarized evidence indicating that they have an Alien Registration Receipt Card (I-551) or have been approved for the issuance of such card as evidenced by an official passport stamp of the United States Immigration Service and that the form number of the card is I-551. Non-citizen nationals are persons, who, although not citizens of the United States, owe permanent allegiance to the U.S. They are generally persons born in outlying possessions of the United States (e.g., America Samoa and Swains Island).

Cancer Control Career Development Awards for Primary Care Physicians are made to not-for-profit institutions located within the United States, its territories, and the Commonwealth of Puerto Rico. Unsolicited grant applications will not be accepted from, nor will grants be made for the support of research conducted at for-profit institutions, federal government agencies (including the National Laboratories), or organizations supported entirely by the federal government. Applications may be submitted by qualified academic institutions on behalf of Veteran Affairs Medical Centers provided that a Dean's Committee Memorandum of Affiliation is in effect between the two institutions.

An application for a grant must bear the signature of the official authorized to sign for the institution. Signatures of a department head and/or dean of a college are not sufficient. Personnel compensated in whole or in part with funds from the American Cancer Society are not considered employees of the Society. Institutions shall be responsible for issuing the appropriate IRS tax filings for all individuals receiving compensation from Grantor's funds hereunder, and shall be responsible for withholding and paying all required federal and state payroll taxes with regard to such compensation.

The American Cancer Society does not assume responsibility for the conduct of the investigation or the acts of the investigator, since both are under the direction and control of the grantee institution and subject to the institution's medical and scientific policies. Grantee institutions must safeguard the rights and welfare of individuals who participate as subjects in research activities by reviewing proposed activities through an Institutional Review Board (IRB) as specified by the National Institutes of Health (NIH) Office for Human Research Protections, DHHS (OHRP). Furthermore, grantee institutions must adhere to current U.S. Department of Health and Human Services guidelines regarding financial conflict of interest, recombinant DNA, research misconduct, and vertebrate animals.

## **7. PURPOSE AND DESCRIPTION OF CANCER CONTROL CAREER DEVELOPMENT AWARDS**

This program is intended to encourage and assist in the development of promising individuals who will pursue academic careers in primary care specialties. Through the Cancer Control Career Development Award, the Society seeks to support primary care physicians in supervised programs that will develop the candidate's clinical and teaching expertise and his/her capacity to perform independent research in cancer control. It is anticipated that medical school faculty trained under these awards will promote cancer control activities and methodology to students and physicians in the academic setting, as well as those in private practice, and enhance the cancer control knowledge base through increased research.

The Society awards Cancer Control Career Development Awards for Primary Care Physicians to provide opportunities for academically oriented primary care physicians to become leaders in primary care practice, education, and research activities related to cancer control. In evaluating applications for this program, the Society places primary emphasis on the qualifications of the prospective candidate and his/her potential as a future leader in the entire spectrum of cancer control, as well as on the ability of the candidate's institution to implement and support the proposed program. It is important that the application document how the award will lead to a career in cancer prevention and control.

Cancer Control Career Development Awards for Primary Care Physicians are intended to support the early development of academic careers that place emphasis on cancer control; candidates with established careers and substantial research funding should not apply. Prospective applicants who are unsure of their eligibility should contact the Society for clarification prior to submission of an application.

## **8. REQUIREMENTS FOR CANDIDATES**

The candidate must have a serious commitment to pursue an academic career in a primary care specialty including demonstrated interest and activities in cancer control. The academic position to be filled by the candidate must be identified on the application form. Candidates for first year Cancer Control Career Development Awards may not have academic rank above that of Assistant Professor, must not be tenured, or be the section head (or equivalent) in his/her discipline.

Successful applicants must demonstrate teaching ability and must undertake research or other scholarly activities that are to be completed within the period of the award. In addition, the candidate must remain active in the entire spectrum of primary care practice that should also include cancer control activities.

The following eligibility requirements must be met by the date the grant is scheduled to begin:

- A. The candidate must have an MD, DO, or an equivalent degree and be licensed to practice medicine.
- B. The candidate must have completed the residency requirements of the appropriate primary care specialty. Additionally, the candidate may not be training as a fellow.

- C. Generally, no more than ten years may have elapsed between the completion of the candidate's board-required training and the beginning of the award.
- D. Individuals, who have received or are receiving a career development training award of two or more years in length from any agency, including the American Cancer Society, are not eligible to receive or to continue to receive this award.

## **9. REQUIREMENTS FOR INSTITUTIONS**

The sponsoring institution must provide a commitment for a regular full-time faculty appointment or equivalent for the candidate and must be prepared to support the clinical, teaching, and research activities of the candidate in a comprehensive primary care setting. This support may include facilities; resources; equipment; training programs; seminars; an organized cancer program that will provide continued support to the candidate for participation in cancer prevention, detection, epidemiology, and cancer patient follow up; and/or a relationship with another institution or cancer center.

A three-year institutional program demonstrating progress and maturation in the candidate's career in primary care and cancer control must be presented in the application. This program must include clinical, teaching, and research/scholarship components of increasing responsibility during the period of the award. Each of these aspects will be weighted separately in the evaluation of the overall application according to the following scheme (for complete details, please see the Review Criteria in the Appendix to these Policies):

- clinical activities – 20%,
- teaching activities – 20%,
- research/scholarship activities – 40%.

In addition, the peer reviewers will consider:

- the mentor's participation in the proposed program (10%), and
- the candidate's qualifications for the award, to include the interview process and any response from the candidate following the interview (10%).

The following requirements must be met when submitting an application:

- A. The application must document a supervised, well-defined program of clinical activities planned for the awardee. It is expected that, over the three-year period of the grant, candidates will incrementally add to their clinical skills in cancer prevention and early detection. A description of the clinical skills to be enhanced and the new skills to be acquired by the applicant, and the specific activities planned to accomplish this learning must be included.
- B. The application must document a supervised, well-defined program of teaching activities planned for the awardee. It is expected that, over the three-year period of the grant, candidates will incrementally add to their teaching skills in cancer prevention and early detection. A description of the teaching skills to be enhanced and any new skills to be acquired by the awardee, and the specific activities planned to accomplish this learning must be included.
- C. The application must document a supervised, well-defined project in cancer control planned for the award period. It is appropriate to propose either a hypothesis-based research project or an intervention.

**Appropriate research topics and examples of funded projects include, but are not limited to:**

**Cancer prevention or early detection**

- Knowledge, Attitudes, and Beliefs about Cancer among Vietnamese
- Missed Opportunities for Prevention: Smoking Cessation Counseling and the Competing Demands of Practice

**Health services research**

- Effectiveness of a Free Nicotine Patch Program for Medicaid and Uninsured Patients
- Access Issues in Cancer Control: The Relationship of Federal Primary Care Health Manpower Shortage Designations to Cancer Control
- Patient and Physician Compliance with American Cancer Society Recommendations for Mammographic Screening

**Clinical epidemiology**

- Predictors of Repeat Mammography: A Cohort Study
- Lumbee Indians Smokeless Tobacco Use and Cessation Survey
- Mammographic Predictors of Breast Cancer

**Scholarly topics (such as educational initiatives).** Examples of funded projects include, but are not limited to: medical school curriculum innovations, continuing education initiatives, and patient education interventions.

- Teaching Cervical Cancer Control to Third-Year Medical Students: A Community-Based Curriculum Intervention.
- A Skin Cancer Control Educational Program for Primary Care Physicians and Residents

- D. The institution must identify an established investigator to serve as a sponsor/mentor to supervise and guide the candidate in his/her program. Different mentors may be appropriate for different aspects of the program, e.g., the research project, but one senior sponsor who is certified in a primary care specialty is required. Appropriate curricula vitae must be included on the forms provided in the application.
- E. The institution must provide documentation of existing primary care practice and oncology programs, resources, facilities, and personnel.
- F. The institution is expected to provide tangible financial support of the awardee's activities (e.g., screening clinics, epidemiology support, secretarial or data analysis, salary, and/or other appropriate support).
- G. An original and three copies of a letter of support from the local office (Division or Unit) of the American Cancer Society must be submitted with the application.
- H. The sponsor/mentor must demonstrate how the funds from the Cancer Control Career Development Award will be used to advance the candidate's career in primary care and cancer control. Possible benefits include (but are not limited to):
- A documented decrease in the clinical and/or administrative responsibilities of the candidate due to this award. It is important that the institution clearly explains how funding from this grant would allow the candidate to spend additional time involved in activities described in this application.

- A documented increase in the resources made available to the candidate due to this award. Itemize additional resources, e.g., additional personnel, funding, space, and equipment given to the candidate if he/she receives this award.
- Additional advanced training. Describe any additional advanced training which will be made possible by the funds associated with this award, i.e., training not offered to other faculty not receiving the award, postgraduate courses, etc.

## 10. AMOUNT AND TERM OF THE AWARD

The Cancer Control Career Development Grant (CCCDG) is intended to provide the awardee with support for a three-year individualized program. The award shall be \$50,000 for the first, \$55,000 for the second and \$60,000 for the third year of the award. In acknowledgement of the importance of the mentor's support to the CCCDA program, salary and benefits for the mentor may also be charged to the grant in an amount up to \$10,000 per year (the total amount of the award may not exceed \$195,000). No portion of the grant may be used for indirect costs.

The recipient cannot receive concurrent support from a similar career development training award (see Section 8D). There is no objection to reasonable salary supplementation from research grants (other than research grants of the American Cancer Society) or institutional funds when the individual's abilities and circumstances warrant it in the judgment of his/her institution. Such supplementation must not entail duties that will interfere with or detract from the program and must be reported to the American Cancer Society.

**Extension Without Additional Funds:** The termination date of any grant may be extended for up to one year without additional funds upon written request from the principal investigator. This request must be received before the expiration date of the grant.

## 11. APPLICATION DEADLINE FOR GRANTS

Applications for the CCCDA program must be submitted as paper copies in addition to submitting them electronically via proposalCENTRAL. proposalCENTRAL is a consortium of non-profit granting agencies, developed and hosted by RAMS. Access is available using links provided in the American Cancer Society web site [www.cancer.org](http://www.cancer.org) (see *Instructions*). You may contact proposalCENTRAL at 1-800-875-2562 or email [support@ecgrant.com](mailto:support@ecgrant.com) to address any problems using the electronic version of the application. Questions about completing the application form should be directed to the Program Director, Virginia (Ginger) Krawiec, MPA, at 404-329-5734, e-mail: [ginger.krawiec@cancer.org](mailto:ginger.krawiec@cancer.org).

Applications (both the paper copies and the electronic version) must be received on or before the deadline to allow adequate time for processing and review by the Peer Review Committee and the Council. The deadline will be strictly enforced, and a late application will be returned to the investigator. Paper copies of the applications must be received by the Society's close of business (5:00 PM Eastern time) on the specified deadline date. The electronic applications must be submitted by 8:00 PM Eastern time on the deadline date. If the deadline date falls on a weekend or holiday, applications will be accepted up to 5:00 PM Eastern time the following business day (electronic version, 8:00 PM Eastern time).

Deadline for Receipt of Applications	October 15
Preliminary Notification (post-Peer Review Committee Meeting)	Early March
Final Notice (after Council Meeting)	Early April
Activation Date	July 1

Within three weeks after the submission deadline, the applicant will receive an email acknowledgment, stating an assigned application number, and the name and telephone number of the Program Director of the Peer Review Committee. This notification will be sent to the email address supplied in the Researcher Profile at the time of submission.

As part of the application review, a member of the peer review committee must personally interview each applicant. The applicant will receive a detailed letter regarding arrangements for the interview. During the interview, the interviewer may ask the applicant to submit supplemental materials. Four copies should be forwarded to the Program Director. No other supplemental materials will be accepted after the deadline unless requested by staff for administrative purposes.

Preliminary information regarding the status of an application will be emailed (copies of the critiques will be mailed only) after review by the Peer Review Committee. The letter of notification will indicate the likelihood of funding as described by one of the following phrases: experience suggests that (a) your application will be funded, (b) we cannot predict at this time or, (c) your application will not be funded. This information will be available in early March.

Applicants may call the Extramural Grants Department at anytime through the review cycle. The Program Director will guide your application through the entire process. For questions concerning the application's committee review, our staff can be most helpful to you after you have read the reviewers' critiques.

## **12. INSTITUTIONAL EXPENDITURES**

The grantee's institution is expected to provide the required physical facilities and administrative services normally available in an institution. The Society's grants do **not** provide funds for such items as:

- Secretarial/administrative salaries
- Tuition
- Foreign travel; special consideration given for attendance at scientific meetings held in Canada
- Books and periodicals
- Membership dues
- Office and laboratory furniture
- Administrative office equipment and supplies
- Rental of office or laboratory space
- Recruiting (staff) and relocation expenses
- Non-medical services to patients
- Per diem charges for hospital beds
- Construction, renovation, or maintenance of buildings/laboratories

## **13. PAYMENTS**

Payments on grants will be made at the end of each month to the institution and mailed to the address indicated at the bottom of the contact information of the application. Acknowledgment of payment is not required.

## **14. FINANCIAL RECORDS AND REPORTS**

A report of expenditures must be submitted within 90 days following the expiration date of the grant as indicated in the award letter. Annual financial reports are not required. Forms will be provided by the Society or may be downloaded from the web site. Signatures of the principal investigator and the institution's financial officer are required. **Any unexpended funds must be returned to the Society.** Any change in term, such as a no-cost extension, will alter the date that the report is due.

Reports are to be submitted in a timely manner. In the event this is not possible, a written request to extend the reporting deadline should be made. Otherwise, noncompliance may result in the withholding of payment on all grants in effect at the recipient institution, or grants that may be awarded in the future, until reports are received

Institutions must maintain separate accounts for each grant, with substantiating invoices available for audit by representatives of the American Cancer Society. The Society is not responsible for expenditures made prior to the start date of the grant, for commitments against a grant not paid within 60 days following the expiration date, or any expenditures that exceed the total amount of the award. (See also Section 18 of these POLICIES).

## **15. PROGRESS REPORTS**

A progress report from both the grantee and the sponsor/mentor must be submitted one month prior to the completion of each year of the award. Guidelines for these reports will be forwarded with the award letter. Past reports may be considered when evaluating future applications from a particular program.

## **16. PUBLICATIONS**

Publications resulting from research supported by the American Cancer Society must contain the following acknowledgment: "Supported by Cancer Control Career Development Award for Primary Care Physicians #... from the American Cancer Society." The Society's support should also be acknowledged by the grantee and by the institution in all public communication of work resulting from this grant, including scientific abstracts (where permitted), posters at scientific meetings, press releases or other media communications, and Internet-based communications.

## **17. OWNERSHIP OF EQUIPMENT**

Equipment purchased under American Cancer Society grants is for the use of the principal investigator and collaborators. Title of such equipment shall be vested in the institution at which the principal investigator is conducting the research.

## **18. CANCELLATION**

In the event a grant is canceled, the institution is allowed only the prorated amount of the award. The Society cannot assume responsibility for expenditures in excess of the prorated amount. A Request for Cancellation form is located at the end of these POLICIES. Please submit this form to the Society at least 30 days prior to the requested date of cancellation or immediately upon notification of funding for the project from another agency.

## **19. CHANGE OF INSTITUTION OR SPONSOR/MENTOR**

Any proposed change to a grant-in-effect will be considered on a case-by-case basis.

**Change of Mentor(s):** Since the sponsor/mentor has a major role in guiding and supervising the development of the candidate's academic career, any change of the candidate's sponsor/mentor(s) during the period of the grant must receive written approval from the American Cancer Society. The Society requires that a 2-page biographical form be submitted for each new sponsor/mentor. Contact the Program Director to obtain this form.

**Change of Institution:** Transfer of the grant from one institution to another is generally not permitted. If a change in institution is desired, and especially if a change in mentor and/or project would occur, a new application may be requested. Contact the Program Director for further information.

## **20. INTELLECTUAL PROPERTY RIGHTS**

As a Not-for-profit organization supported by public contributions, the Society believes it has the responsibility to adopt policies and practices that enhance the likelihood that potentially beneficial discoveries and inventions will be exploited to the benefit of humankind. It is the desire of the Society that such inventions be administered in such a manner that they are brought into the public use at the earliest possible time. The Society recognizes

that often this may be best accomplished through patenting and/or licensing of such inventions. Accordingly, the Society has adopted the following patent policy that is binding on all Grantees and Not-for-profit Grantee Institutions (hereinafter "Grantee"). Acceptance of a grant from the Society constitutes acceptance of the terms and conditions of this Policy, which shall be governed by the laws of the State of Georgia. It is a goal of the Society that the terms and conditions of this policy not conflict with the established patent policy of Grantee.

- A. All notices required pursuant to this policy shall be in writing, and in this policy, the following terms shall have the meaning set forth below.
- i. "Invention" shall mean any discovery, material, method, process, product, program, software or use, whether or not patented or patentable or copyrighted or copyrightable.
  - ii. "Funded Invention" shall mean any invention made in the course of research or other work funded in whole or in part by a Society grant.
  - iii. "Public Disclosure" shall mean any publication, presentation, offer for sale or any activity that would affect the patentability of the invention under 35 U.S.C. § 102 or 103.
  - iv. "Net Income" shall mean gross income received by Grantee in respect of a Funded Invention less unreimbursed directly assignable out-of-pocket expenses resulting from patenting and licensing that Funded Invention.
- B. Grantee shall notify the Society of each Funded Invention made by Grantee within thirty (30) days after the earlier of (1) reduction to practice of the Funded Invention, or (2) disclosure of the Funded Invention to Grantee's Technology Transfer Office or the equivalent thereof. Grantee shall promptly determine whether it desires to seek patent or other statutory protection for all Funded Inventions promptly after each Funded Invention is made and shall promptly inform the Society of all decisions to seek or not seek such protection. The Society shall have the right to seek patent or other statutory protection, at the Society's expense, for any Funded Invention in any country where Grantee has decided not to seek protection or has failed to file an application for such protection within six (6) months after disclosure of the Funded Invention to the Society, and, upon the Society's request, Grantee shall assign to the Society all patent and other rights in the Funded Inventions in such countries and shall cooperate with the Society in prosecuting, obtaining, maintaining and enforcing such patent and other rights and applications therefore at the Society's expense.
- C. Grantee shall promptly notify the Society of the filing and issuance or grant of any application for a patent or other statutory rights for a Funded Invention and shall keep the Society reasonably informed of the status and progress of all such applications. Grantee shall pay all costs and expenses incident to all applications for patents or other statutory rights and all patents and other statutory rights that issue thereon owned by Grantee. Grantee shall also notify the Society:
- i. at least sixty (60) days in advance of any intended publication or other public disclosure of any Funded Invention;
  - ii. at least sixty (60) days in advance of Grantee's intention to abandon any application for a patent or other statutory right for a Funded Invention or not to take action required to maintain any such application or any patent or other statutory right in a Funded Invention, in which event, at the request of the Society, Grantee shall assign to the Society ownership of the application or patent and shall cooperate with the Society in prosecuting, obtaining, maintaining and enforcing such patent and other rights and applications therefore at the Society's expense.

- D. Each of the Society and Grantee shall promptly inform the other of any suspected infringement of any patent covering a Funded Invention and of any misappropriation, misuse, theft or breach of confidence relating to other proprietary rights in a Funded Invention. If Grantee commences an action to enforce any such rights in a Funded Invention and thereafter elects to abandon the same, it shall give the Society notice of its intention to do so at least sixty (60) days in advance. If Grantee fails to bring an action to enforce such patent or other rights or otherwise to procure termination of the infringing activities within six (6) months after such notice, the Society shall have the right, but not the obligation, to bring such an action in court or to take other appropriate action to end the infringing activity, at the Society's expense, and Grantee shall cooperate with the Society, at the Society's expense, including, if necessary, permitting Grantee to be named as a party in such litigation.
- E. Grantee shall notify the Society within thirty (30) days of grant of a license, lease, or other revenue generating agreement involving a Funded Invention. In the event that Grantee fails to license a Funded Invention within two (2) years from the disclosure of the Funded Invention to the Society, at the request of the Society, Grantee shall assign to the Society ownership of all rights in the Funded Invention so that the Society may pursue licensing.
- F. Grantee shall not license, lease, or sell any rights in a Funded Invention to, or enter into any revenue generating agreement concerning a Funded Invention with, any party whose activities or objectives conflict with the goals of the Society. In particular, but without limitation, Grantee shall not license a Funded Invention to "Tobacco Company". "Tobacco Company" means any company that manufactures tobacco products and is commonly considered to be part of the tobacco industry, including subsidiaries and parent companies, as well as philanthropic foundations and other organizations closely linked with the tobacco industry.
- G. (i) The Society waives the receipt of income until the Net Income from the Funded Invention exceeds \$500,000.
- (ii) Once the Net Income from a Funded Invention exceeds \$500,000, Grantee shall pay the Society annually a percentage of the Net Income from the Funded Invention that is proportionate to the Society's proportion of the financial support for the research that resulted in the Invention. Such royalty payment shall be accompanied by an appropriate statement of account detailing the amount and showing the calculation of Net Income received by Grantee during the preceding year. The Society shall have the right to audit the Grantee's books and records annually, in order to verify the Net Income derived annually from any Funded Invention.
- (iii) The percentage of Net Income due the Society from a Funded Invention shall be determined by the parties within 30 days of the date the Society is notified by the Grantee pursuant to Section E above of the grant of a license, lease or other revenue generating agreement involving the Funded Invention.

If the parties are unable to agree on the percentage of Net Income payable to the Society the dispute (the "Dispute") shall be resolved as follows:

One of the parties shall request (the "Negotiation Request") that each of the parties appoint a designated executive management representative to meet for the purpose of endeavoring to resolve such Dispute. The designated executive representatives, who shall not have been directly involved in the initial negotiations, shall discuss the Dispute and negotiate in good faith in an effort to seek a resolution. During the course of such negotiation, all reasonable requests made by one party to the other for information will be honored so that each of the parties may be fully advised regarding the Dispute. If the designated executive representatives are unable to

resolve the Dispute within 30 days after the Negotiation Request, the parties shall mediate the Dispute with a mutually acceptable mediator within the 30 day period beginning 31 days after the Negotiation Request. If the Dispute is not resolved by mediation within 60 days after the Negotiation Request, either party may initiate arbitration by delivering an arbitration demand to the other party, and the Dispute shall be settled by arbitration to be held in Atlanta, Georgia, in accordance with the Commercial Arbitration Rules of the American Arbitration Association (“AAA”), except that

- (i) there shall be one arbitrator mutually agreed upon by both parties within 30 days after initiation of arbitration and if the parties are unable to agree upon an arbitrator, the arbitrator shall be appointed by AAA;
- (ii) neither party may submit more than 20 interrogatories, including subparts;
- (iii) neither party shall be entitled to take more than two depositions and no deposition shall last more than two hours;
- (iv) all discovery shall be concluded within 90 days of serving the arbitration demand; and
- (v) each party shall bear its own costs and expenses and attorney’s fees and an equal share of the arbitrator fees and any administrative fees of the arbitrator.

The award of the arbitrator shall be binding, and judgment upon the award rendered by the arbitrator may be entered in any court having jurisdiction thereof.

**21. REQUEST FOR CANCELLATION**

**Cancer Control Career Development Award for Primary Care Physicians**

Please submit this form to the Society at least 30 days prior to the requested date of cancellation or immediately upon notification of funding for the project from another agency.

Grant # \_\_\_\_\_

Name of Principal Investigator: \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Institution \_\_\_\_\_

Department \_\_\_\_\_

Requested Date of Cancellation: \_\_\_\_\_

Reason for Cancellation: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Please mail or fax this completed form to:

Business Office  
Extramural Grants Department  
American Cancer Society  
1599 Clifton Road, NE  
Atlanta, GA 30329

Telephone: 404-329-7534, 404-329-7658  
Fax: 404-321-4669

The American Cancer Society will send an official acceptance of cancellation.

## **APPENDIX: CRITERIA FOR THE REVIEW OF APPLICATIONS**

The following items are used by reviewers in evaluating applications for the Cancer Control Career Development Award for Primary Care Physicians:

### **Candidate**

- Goals and commitment to cancer control
- Education
- Training
- Clinical, teaching, and research experience
- Publications
- Personal characteristics
- Overall appropriateness of candidate for the CCCDA

### **Institution**

- Proven ability to train personnel in primary care.
- Commitment of institution to cancer prevention, detection, epidemiology, and patient follow-up.
- Adequacy of facilities and resources, including numbers of patients treated.
- Commitment of facilities, equipment, support personnel, supplies, etc. to CCCDA candidate.
- Commitment of a senior sponsor/mentor who is a recognized primary care specialist.
- Qualifications of other pertinent department/institutional staff (including additional mentors).
- Evidence that the institution has made a commitment to the candidate's career development

### **Sponsor / Mentor(S)**

- Qualifications of sponsor(s) in candidate's primary care specialty
- Qualifications of sponsor(s) in research
- Commitment of sponsor(s) to program
- Time available for supervision of the program
- Appropriateness of sponsor(s) to candidate

### **Clinical Program**

- Adequacy of clinical activities to provide for progression and maturation of expertise in these areas, including allocated percentage of time
- Faculty development opportunities (courses, lectures, continuing education, etc. planned for candidate)
- Commitment and focus on cancer control

### **Teaching Program**

- Adequacy of teaching activities to provide for progression and maturation of expertise in these areas, including allocated percentage of time
- Faculty development opportunities (courses, lectures, continuing education, etc. planned for candidate)
- Commitment and focus on cancer control

### **Cancer Control Project**

- Objectives and plan
- Adequacy of proposed plan adequate to develop investigative/scholarly skills
- Quality (innovativeness and relevance)
- Approval of human research committee if human subjects are to be part of proposed research

In developing a final recommendation, the reviewers will combine their assessments of each of the following areas according to the indicated “weights:”

20% – Proposed clinical program

20% – Proposed teaching program

40% – Proposed cancer control project (research proposal or evaluation of an educational intervention)

10% – Proposed contribution of the mentor(s) and institution

10% – Candidate: other qualifications of the candidate, including past experience and training, presentation of proposed program during interview and candidate responsiveness to feedback.



**AMERICAN CANCER SOCIETY  
CANCER CONTROL CAREER DEVELOPMENT AWARD  
FOR PRIMARY CARE PHYSICIANS**

**INSTRUCTIONS**

Effective July 1, 2003 for applications to be received October 15, 2003, which if awarded, would activate July 1, 2004.

This revision supersedes all previous versions.

**AMERICAN CANCER SOCIETY, INC.**

Extramural Grants Program  
1599 Clifton Road, N.E.  
Atlanta, Georgia 30329-4251  
Voice: (404) 329-7558  
Fax: (404) 321-4669  
Web site: <http://www.cancer.org>  
Email: [grants@cancer.org](mailto:grants@cancer.org)

**MISSION**

The American Cancer Society is the nationwide, community-based, voluntary health organization dedicated to eliminating cancer as a major health problem by preventing cancer, saving lives, and diminishing suffering from cancer through research, education, advocacy, and service.

**CANCER CONTROL CAREER DEVELOPMENT AWARD  
FOR PRIMARY CARE PHYSICIANS: APPLICATION INSTRUCTIONS**

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## CANCER CONTROL CAREER DEVELOPMENT AWARD FOR PRIMARY CARE PHYSICIANS

### SECTION A – GENERAL INFORMATION

Please read carefully the eligibility requirements set forth in the Policies, Cancer Control Career Development Award for Primary Care Physicians, before completing the application. Prospective applicants who are unsure of their eligibility should contact the Society for clarification prior to submission of an application. Questions should be directed to:

Virginia Krawiec, MPA	404-329-5734
Director, Health Professional Training Grants	404-321-4669 (fax)
American Cancer Society	ginger.krawiec@cancer.org
1599 Clifton Road, NE	
Atlanta, GA, 30329-4251	

#### 1. APPLICATION SUBMISSION

The receipt deadline for the Cancer Control Career Development Award is October 15. Applications for Cancer Control Career Development Awards must be submitted to the Society in two formats: paper copies (four) and an electronic copy. The electronic version is submitted using links provided in the American Cancer Society web site [www.cancer.org](http://www.cancer.org). **The paper copies of the application carry the signatures of both the applicant and the applicant's institution, and represent the official application, and are the version sent out to reviewers.** The applications (both the paper copies and the electronic version) must be received on or before the deadline. The four paper copies of the application must be received by the Society's close of business (5:00 PM Eastern time) on the specified deadline date. The electronic applications must be submitted by 8:00 PM Eastern time. If the deadline date falls on a weekend or holiday, applications will be accepted the following business day.

#### 2. FORMATTING THE APPLICATION

When preparing the application, adhere to the following instructions:

- **Readability:** The submitted version should be easy to read. The reviewers evaluate many applications, and are likely to respond unfavorably to poorly written or badly organized applications. A full and complete statement must be provided in connection with each heading. **Incomplete applications will not be accepted for consideration by the Society's review committee.**
- **Submit** the paper copies (four) on white 8 ½ x 11-inch paper. Staple or paper clip the pages together; do not submit in folders, binders, etc.
- **Type size:** The entire text of the application must be in an easily readable font. Use standard 12-point type (15 cpi or less) for the text, and no less than 10-point type for figure legends and tables. You may present your text in a typeface that is different from that on the supplied forms.
- **Single-spaced text** is acceptable and space between paragraphs is recommended.
- **Margins:** All the margins must be at least 1 inch.
  - **Page numbering:** The first few pages of the application form are considered cover pages and are not numbered. These pages must be submitted in the order in which they print followed by the Structured Technical Abstract, which must be printed separately. All subsequent pages must be numbered consecutively in the upper right hand corner (do not use page designations such as "9A" or "9B").

- **Appendix:** Material in the application appendix is not duplicated for the entire Peer Review Committee; therefore, it is advisable to include tables, figures, or photographs that are essential for the evaluation of your research plan in the main body of the application. Since photographs do not reproduce well, use original photographs in all copies.

**Failure to observe type size specifications and/or page limits will result in the return of the application without review.**

### **3. RESUBMISSION OF AN APPLICATION**

To submit a revised application:

- A. Submit a complete application with a current date—electronic version and paper copies.
- B. The most recent American Cancer Society application number must be provided where requested.
- C. A “Reply to Previous Review” should be placed immediately after the “Other Support” section of the application and should not exceed 3 pages (it is not included in the 20-page limit of the Program Plan). It should respond clearly and succinctly to the points raised in the previous review and direct the reader to the specific sections of the text where revisions have been made. Revised portions of the text should be highlighted (i.e., italics, bold type, line in the margin, underlining, etc.).
- D. Copies of the reviewers’ previous critiques, clearly labeled as such, should be placed in the application Appendix and listed in the Table of Contents.

Revised applications will be reviewed in the same detail and compete on an equal basis with all other new applications and competing renewals. There is no assurance that a revised application will be reviewed by the same peer review committee members to whom the original application was assigned.

### **4. NOTIFICATION OF APPLICATION RECEIPT AND REVIEW**

Within three weeks after the submission deadline, the applicant will receive an email acknowledgment, stating an assigned application number, and the name and telephone number of the Program Director of the Peer Review Committee. This notification will be sent to the email address supplied in the Researcher Profile at the time of submission.

As part of the application review, a member of the peer review committee must personally interview each applicant. The applicant will receive a detailed letter regarding arrangements for the interview. Following the interview, the applicant may submit supplemental materials at the recommendation of the interviewer. No other supplemental materials will be accepted after the deadline unless requested by staff for administrative purposes.

Preliminary information regarding the status of an application will be emailed (copies of the critiques will be mailed only) after review by the Peer Review Committee. The letter of notification will indicate the likelihood of funding as described by one of the following phrases: experience suggests that (a) your application will be funded, (b) we cannot predict at this time or, (c) your application will not be funded. This information will be available in early March.

### **5. CHANGES TO THE APPLICATION**

**Withdrawal of Application.** Please advise the Society promptly, in writing, should you decide to withdraw your application for any reason. Your letter (or email) to the Program Director should include your name, the application number, and the reason for withdrawal.

**Change of Address.** Notify the Society in writing of any changes of address or telephone number following the submission of an application. Notification should include your name, the application number, new address, and new phone number.

## SECTION B—PREPARING THE APPLICATION

**NOTE:** In order to use the electronic grant application system and print copies and submit the application electronically, you must have Adobe Acrobat Reader 4.05. In addition, the system requires a compatible browser: Netscape 4.7 or Internet Explorer 5.0 for Windows (4.5 for Macintosh) is recommended.

### 1.0 INTRODUCTION AND ACCESSING THE ACS GRANT APPLICATION SYSTEM

- Access the American Cancer Society Research site at [www.cancer.org/research](http://www.cancer.org/research).
- Select **Funding Opportunities** followed by **Index of Grants**.
- Under the heading “Mentored Training and Career Development,” select the Cancer Control Career Development Award for Primary Care Physicians. You are now able to [Access Electronic Grant application process at proposalCENTRAL](#).
- Once you reach proposalCENTRAL follow their instructions.

proposalCENTRAL is a consortium of non-profit granting agencies, developed and hosted by RAMS. If you have problems accessing or using the electronic version of the application or printing copies of the application, click on “**Help**” or contact RAMS Customer Service at [support@ramscompany.com](mailto:support@ramscompany.com) or 1-800-875-2562.

### 2.0 EXPLANATION OF REQUIRED INFORMATION

#### **Applicant Information:**

Some (or all) of the required information will have been filled in from your profile. The information was provided when you initially registered with proposalCENTRAL and completed the Researcher Profile. If any of this information is not current at the time of submission, it will be necessary to UPDATE the Researcher Profile before finalizing the section and submitting the final version of your application.

#### **Institution Official:**

In addition to the name and address of the official authorized to sign for the institution, the Society's Finance Department requests a check mailing address. Please provide as complete an address as needed to ensure correct postal delivery.

#### **Mentor:**

Fill out all of the required fields for your mentor information.

#### **Additional Mentor:**

If applicable, fill in this section with the same required information as for your primary mentor.

#### **Department Chair:**

Please provide the requested information for the Department Chair who will sign your application.

### 3.0 GENERAL AUDIENCE SUMMARY

This form is limited to 3,000 characters, including spaces and spelled-out Greek letters (note that Greek characters like  $\beta$  convert to beta. Using non-technical language, describe in the space provided how your proposed program and particularly how your project relates to cancer control in general or specifically to one or more of the categories identified in the Cancer Relevance Information (see Appendix A). This summary must communicate the purpose and rationale of the proposed study to people not technically trained in the sciences, but who are interested in cancer research for a variety of reasons. Be aware that this includes stakeholders, voting members of every Peer Review Committee who do not have formal science or oncology training but have a strong personal interest in controlling and preventing cancer and whose observations about each proposal are respected by the scientists on the committees. This general audience summary should be written in a way that makes the scientific objectives and rationale for the proposal understandable to these stakeholders. This summary may also be of interest to donors who have the resources to fund cancer

research. They frequently are drawn to funding particular types of cancer research, and this summary is used to identify particular priority areas and organ sites for special funding opportunities. If the application is funded, this summary will become public information. Therefore, do not include proprietary/confidential information.

This section must not duplicate the structured technical (scientific) abstract. **See the attached Appendix C for an example of a properly constructed summary.**

#### **4.0 CANCER RELEVANCE INFORMATION**

The requested information is for statistical purposes only and is not part of the application used by the Peer Review Committee for scientific review. Do not submit this section with your paper copy. **Submit the Cancer Relevance section electronically only.**

Donors frequently have an interest in funding particular types of cancer research and priority areas and items must be selected for these grants to be presented to donors for special funding opportunities. **See the attached Appendix A for the Common Scientific Outline Classifications and Appendix B for Research Areas for filling out the forms. Please note that in completing the Priority Areas section, appropriate items may also include those listed under “Resources and Infrastructure Related to [specific area].” See Appendix A for specific terms and examples.**

#### **5.0 STRUCTURED TECHNICAL ABSTRACT**

In the 7 x 7-inch space provided, summarize for general scientific audiences your proposed research or scholarly project. This structured technical abstract should provide a clear, concise overview of the proposed work, including the background, objective or hypothesis and its supporting rationale, specific aims of the study, study design, and relevance of the proposed work to the American Cancer Society’s mission of eliminating cancer as a major health problem.

Please use the outline below for preparing the structured technical abstract.

- a. Background: Provide a brief statement of the ideas and reasoning behind the proposed work.
- b. Objective/hypothesis: State the objective/hypothesis to be tested. Provide evidence or rationale that supports it.
- c. Specific aims: State concisely the specific aims of the study.
- d. Study design: Briefly describe the study design, emphasizing those elements you consider most relevant to assignment of the proposal for peer review.
- e. Cancer relevance: Provide a brief statement explaining the potential relevance of the proposed work to cancer.

#### **6.0 PROPOSAL NARRATIVE**

Download the Proposal Narrative Template. Detailed below are the instructions for completing the individual parts of the **Proposal Narrative** section of the application. Upload the document file when complete.

##### **6.1 TABLE OF CONTENTS (PAGE 1)**

Complete the Table of Contents by indicating the appropriate page numbers for each Section; do not exceed one page.

## 6.2 DETAILED BUDGET (PAGE 2)

- A. Personnel.** Names and positions of all personnel must be individually listed and the percentage of time to be devoted to the project by each person should be noted, even when salary is **not** requested. If the individual has not been selected, please list as "vacancy."

Personnel may receive salary support up to a maximum that equals the NCI salary cap, prorated according to their percent effort on the project. The costs to the institution of employee fringe benefits should be indicated as a percent of the employee's salary. The amount of fringe benefits requested must be prorated to the salary requested. (For example, if 50 percent of an individual's annual salary is requested then no more than 50 percent of that individual's annual cost for fringe benefits can be requested.)

- B. Permanent Equipment.** Defined as all items costing over \$500 with a useful life of 2 or more years. List and justify each item separately.
- C. Supplies.** Group into major categories (survey materials, computer software, etc.)
- D. Travel.** Domestic travel only; special consideration will be given for attendance at scientific meetings held in Canada.
- E. Miscellaneous Expenditures.** List specific amounts for each item; examples of expenditures allowed include: publication costs, special fees (e.g., pathology), computer time and scientific software, and equipment maintenance.
- F. Subcontracts.** If any portion of the proposed research is to be carried out at another institution, enter the total costs and provide a categorical breakdown on a continuation budget page. Administrative pages pertaining to the subcontract should be included in the Appendix.
- G. Indirect Costs.** No portion of the CCCDA may be used for indirect costs.
- H. Total Amount Requested.** Enter the sum of all years of requested support.

## 6.3 JUSTIFICATION OF BUDGET (PAGE 3)

Justify the need for personnel, supplies, travel, and other items, including all items of equipment costing over \$500.

## 6.4 OTHER SUPPORT (PAGE 4)

It is the policy of the American Cancer Society **not** to fund individuals who have received a similar award from another agency or projects that are supported wholly by another agency. The Peer Review Committee will make the final decision regarding any questions of eligibility. The only exceptions are funds provided by the host institution as "start-up" support. **Failure to provide complete information will delay the review of your application.**

The form titled *Other Support* is to be used to list all support that you have received to date and all pending support. Include any grants that list the candidate as a participant or principal investigator. Other Support includes both intramural and extramural sources (institutional, for-profit, and not-for-profit, including other grants from the American Cancer Society). Use continuation pages as necessary.

In a section labeled **PAST SUPPORT**, list all past support of the applicant to assure that this grant does not duplicate a previous, similar training grant. Give the source of funds, grant number, title of project, period of time covered by the grant, the amount of direct cost support for current year and total grant period, and percent effort. An explanatory sentence should also be included, if it is necessary to clarify the differences between the present application to the American Cancer Society and other funded grants.

In a section labeled **CURRENT SUPPORT**, provide the following:

1. List the amount(s) and source(s) of your proposed salary for the year beginning July 1, 2004, if you receive this award.
2. Describe any in-kind support to be provided by your institution if you receive this award.
3. List all active awards, providing the source of funds, grant number, title of project, direct costs, period of time covered by the grant, the amount of support for current year (for active grants) and total grant period, and percent effort. An explanatory sentence should also be included, if it is necessary to clarify the differences between the present application to the American Cancer Society and other funded grants.

In a section labeled **PENDING SUPPORT**, list all grants and awards you have applied for that are currently pending. Note for each grant the institution/agency, application number (if known), title, amount requested, period of the award, and percent effort. If this application to the American Cancer Society is similar to a pending application at another granting agency, indicate whether the proposals are to be considered on an "either/or" basis. An explanatory sentence should also be included if it is desirable to clarify the differences between the present application to the Society and any pending application. Outline in this section applications that are planned for the period between submission of the present application and the date an award would begin.

Please keep the Program Director current on the status of all pending applications. The Peer Review Committee will make the final decision regarding any questions of overlap or eligibility.

## **6.5 PROGRAM PLAN PART I - CANDIDATE:**

(To be completed by the candidate)

Detailed below are the instructions for completing the individual parts of the Program Plan section. The total length of sections 5.6-6.4 below must not exceed 20 pages. This page limit does not include the references, which should come at the end of the cancer control project description. Proposals should be realistic in terms of work to be accomplished in the period of time for which support is requested. Although it is permissible to submit applications on an "either/or" basis with other agencies, proposals should be adjusted to fit the Society's term and budget constraints. Failure to conform to the guidelines on type size, page length, or project scope will result in the application being returned to the investigator without review.

*Complete the following sections, if relevant, of the application by providing the information requested below on the form entitled "Program Plan Part I - Candidate" and using continuation pages as necessary.*

### **REPLY TO PREVIOUS SUBMISSION**

Insert here the information outlined in Section A.3, page 4 of these Instructions.

### **EXPERIENCE**

Summarize current and past experience in: 1) clinical activities, 2) teaching, and 3) research, especially in cancer prevention and control.

### **CAREER GOALS**

Describe your career goals and the type of position you wish to obtain following the completion of the award period.

### **CLINICAL ACTIVITIES**

Describe in detail the clinical program in cancer prevention and early detection proposed for each year of the award period. This program must provide opportunities for the applicant to enhance his/her existing clinical skills and to acquire new clinical skills in cancer prevention and early detection. An explanation of the specific activities planned to accomplish this learning must be included.

### **TEACHING ACTIVITIES**

Describe in detail the teaching program in cancer prevention and early detection proposed for each year of the award period. This program must provide opportunities for the applicant to enhance his/her existing teaching skills and to acquire new teaching skills in cancer prevention and early detection. An explanation of the specific activities planned to accomplish this learning must be included.

### **CANCER CONTROL PROJECT**

Provide a detailed description of the cancer control project(s) planned for the award period. Appropriate research or scholarly topics are described in the Policies, Section 9.C.

1. If a scholarly project (such as an educational initiative) is proposed, this section must include the project(s) title, objectives and outcomes for the project, background information, a plan to develop and implement the intervention, and a rigorous evaluation.
2. If the applicant proposes a hypothesis-based research project, this section must include the project(s) title, the hypothesis(es), the significance of the proposed research, specific aims, research design (including the timeline, methodology, study population, statistical calculations, etc.), and references.

## **6.6 PROGRAM PLAN PART II:**

(To be completed by the sponsor/mentor(s) who will supervise and guide the candidate in the program.)

### **PROGRAM GOALS**

Provide a statement of the overall goals of the program proposed for the candidate. Using the table provided, describe how the candidate will apportion his/her time over the three-year period of the award, noting any teaching appointments, clinical responsibilities, participation in screening clinics or tumor boards, etc. Describe the role of the sponsor/mentor(s) in the candidate's proposed program, beginning with your involvement in the development of this grant proposal.

### **INSTITUTIONAL RESOURCES**

Describe facilities, resources, equipment, existing cancer control programs, personnel and relationship between the candidate's department and other appropriate faculty and/or departments. Provide relevant patient statistics that will aid the review committee in evaluating patient load. State whether there is a tumor board and/or cancer registry.

## **PROPOSED SUPPORT TO CANDIDATE**

Describe specific support to be provided to the candidate by the institution, for example: space, research assistants, research budget, epidemiology resources, office space, funds to be used to attend conferences, seminars, etc.

## **IMPACT OF THE AWARD ON THE CANDIDATE'S CAREER DEVELOPMENT**

Describe how these funds, if awarded, will be used to advance the candidate's academic career in cancer control. Possible benefits include (but are not limited to):

- A documentable decrease in the clinical and/or administrative responsibilities of the candidate due to this award. Explain clearly how funding from this award would allow the candidate to spend additional time involved in activities described in this application.
- A documentable addition of resources made available to the candidate due to this award. Itemize additional resources provided to the candidate if they receive this award.

Any additional advanced training that will be made possible by the funds associated with this award.

### **6.7 CURRICULUM VITAE FOR SPONSOR/MENTOR(S)**

The application must include a condensed curriculum vitae for the candidate's sponsor/mentor(s). If an additional sponsor/mentor is named to guide the candidate in a specific aspect of his/her program, e.g., the research project, a separate vitae must be submitted using the two-page format indicated. The curriculum vitae must not exceed two pages and must adhere to the format provided. The form provided may be duplicated as needed. Those applications that do not adhere to format guidelines will be automatically rejected.

### **6.8 LETTERS OF RECOMMENDATION**

**(letters are not submitted electronically)**

- a. Four letters of recommendation, including one from the candidate's sponsor/mentor and if relevant, the additional sponsor/mentor, must be submitted with this application. Letters should NOT be submitted separately.
- b. The application must also include an original and four copies of a letter of support from the local office (Division or Unit) of the American Cancer Society.

### **6.9 APPENDIX**

**(the appendix is not submitted electronically)**

Include here:

- Letters of recommendation.
- The letter of support from the local American Cancer Society.
- If a resubmission, copies of prior critiques.
- Any other pertinent materials.

Appended materials may also include letters of support from consultants, recent reprints or preprints, and tables and figures that would lose detail if reduced to fit into the main body of the application. However, the appendix section should not be used to bypass the page limitation. The appendix must be collated in four separate sets, labeled with the name of the applicant, and attached to each copy of the application. It is not necessary to number the pages of the appendix, but please list by categories (i.e., reprints, preprints, letters, etc.) in the Table of Contents of the application. **Note that the appendix is not duplicated for the entire committee and applicants are urged to keep this section as brief as possible.**

## 7.0 ASSURANCES AND CERTIFICATION

All activities involving human subjects or vertebrate animals must be approved by an appropriate institutional committee before the application will be reviewed by the American Cancer Society. Furthermore, compliance with current U.S. Department of Health and Human Services guidelines for financial conflict of interest, recombinant DNA, research misconduct, and vertebrate animals is required. The assurances/certifications are made and verified by the signature of the institutional official signing this application.

If institutional review has not been completed before the submission date of the application, select the "IRB pending" radio button on the certification page. Certification of the institutional committee review, clearly labeled with the assigned American Cancer Society application number, must be received by the activation date of the grant; if it is not received, the application will be considered incomplete and will not be funded.

See the Policies for more information.

## 8.0 PI DATA SHEET AND RESEARCH PROMOTION

If your application for an American Cancer Society award is funded, our National Home Office will work with your local American Cancer Society Division to announce your success. Please indicate your interest in working with the Society to promote your grant and/or research to the media and the general public.

The requested demographic information is for statistical purposes only and is not part of the application used by the Peer Review Committee for scientific review. Do not submit this section with your paper copy.

**Submit this section electronically only.**

## SECTION C – SUBMITTING THE APPLICATION

### 1. COMPLETE ALL APPLICATION SECTIONS AND PRINT PAPER COPY

- Validate on proposalCENTRAL all sections of the application.
- Print **Cover Pages** via proposalCENTRAL.
- Print copy of Structured **Technical Abstract** document via WORD or ADOBE.
- Print paper copies of all sections of the **Proposal Narrative** via WORD or ADOBE.
- Print and retain the paper copies of the Demographic and Research Promotion Information and the Cancer Relevance sections for your files.
- Prepare the application for your institution's internal authorization process. Obtain the appropriate institutional signatures on the first page of the **Cover Pages**.

### 2. ASSEMBLY AND SUBMISSION OF PAPER COPIES

The paper copies (four) of the application with the original signatures must reach the American Cancer Society Extramural Grants Office by 5:00 PM Eastern time on the deadline date.

The paper copies must be assembled as described below. To reduce the chance of losing an application, we urge institutions to mail only one application and its copies per package. If more than one application is included in a package, provide a bright-colored cover sheet listing the applications enclosed and stating in ½ inch or larger lettering "MULTIPLE APPLICATIONS ENCLOSED." All **four sets** of the application (original application with official signatures plus three copies) must arrive in the same package arranged in the following order:

- **Original application with official signatures plus an appendix.**
- **Three copies of the original application, each copy with an attached appendix.**

The original and all copies of the application and appendices should be held together with a rubber band. Send the complete application package to:

The American Cancer Society  
Extramural Grants Department  
1599 Clifton Road NE  
Atlanta GA 30329-4251

### 3. SUBMISSION OF THE ELECTRONIC VERSION

- Make all final edits and get all signatures on the paper copy before submitting.
- If any modifications were made during the signature process, make certain that all sections of the electronic version are revised so that they are the same as the paper copy that is being submitted.
- If you have technical questions regarding the electronic application process feel free to contact RAMS at [support@ramscompany.com](mailto:support@ramscompany.com) or 1-800-875-2562.
- Your full curriculum vitae is required in the application. **Place after Structured Technical Abstract when compiling hard copy.** Save it as a Word or Adobe document and upload it on the proposalCENTRAL website.
- Once all edits to the application sections have been made and all sections are complete and final, select “**Submit.**” This should be done right after your institution has prepared the application for mailing. You have until 8:00 PM Eastern time on the deadline date to complete the electronic submission. Note that the appendix materials are not submitted electronically.

**Please note: You will not be able to make any changes to the forms or upload any modifications to the files after submission.**

## **APPENDIX A: COMMON SCIENTIFIC OUTLINE**

### **BIOLOGY**

#### **1.1-Cancer Related Biology**

Biology of the organism, organs, tissues, cells and subcellular organelles.

Developmental biology from conception to adulthood and the biology of aging.

Study of normal functioning genes, their localization, identification, expression patterns, and functional studies of gene products.

Studies of the immune system including cells, products and functions.

Extracellular matrix formation and interactions, cell-cell interactions.

Genes and signals involved in growth stimulation or repression, including oncogenes (RAS, etc.) and tumor suppressor genes (P53, etc.) and hormones and growth factors such as estrogens, androgens, TGF-beta, GM-CSF, etc.

General mechanisms of carcinogen metabolism and DNA damage, DNA repair pathways and mutation fixation.

Epigenetic mechanisms in the regulation of cell proliferation and behavior. Progression, including clonal evolution, tumor-immune system interactions; factors which influence clonal expansion or regression, tumor promotion.

Metastasis, including studies involving cell-cell interaction, tumor-host interactions, cell motility, remodeling of cellular matrix, cell migration and clonal expansion at distant sites. Biology of tumor regression.

#### **1.2-Resources and Infrastructure Related to Biology**

Education and training of investigators/clinicians/teachers

Infrastructures related to discovery, for example, the Cancer Genome Anatomy Project (CGAP).

Informatics and informatics networks.

Specimen resources (serum, tissue, etc.).

Reagents, chemical standards, pharmaceuticals.

### **ETIOLOGY**

#### **2.1-Exogenous Factors**

Lifestyle factors such as smoking, chewing tobacco, alcohol consumption, parity, diet, sunbathing, and exercise.

Environmental and occupational exposures such as radiation, second-hand smoke, radon, asbestos, organic vapors, pesticides, and other chemical or physical agents.

Infectious agents associated with cancer etiology, including viruses (Human Papilloma Virus-HPV, etc.) and bacteria (helicobacter pylori, etc.).

Viral oncogenes and regulatory genes associated with cancer causation.

#### **2.2-Endogenous Factors**

Hormones and growth factors such as estrogen, androgens, TGF-beta, GM-CSF, etc.

Free radicals such superoxide and hydroxide radicals.

Genes known to be involved or suspected of being mechanistically involved in familial cancer syndromes, for example, BRCA1, Ataxia Telangiectasia and APC.

Genes suspected or known to be involved in "sporadic" cancer events, for example polymorphisms and/or mutations that may affect carcinogen metabolism (e.g., CYP, NAT, glutathione transferase, etc.).

Tumor suppressor genes (P53, etc.) and oncogenes (RAS, etc.).

#### **2.3-Interactions of Genes and/or Genetic Polymorphisms with Exogenous and/or Endogenous Factors**

Gene-environment interactions.

Interactions of genes with lifestyle factors, environmental and/or occupational exposures such as variations in carcinogen metabolism associated with genetic polymorphisms.

Interactions of genes and endogenous factors such as DNA repair deficiencies and endogenous DNA damaging agents such as oxygen radicals or exogenous radiation exposure.

## **2.4-Resources and Infrastructure Related to Etiology**

Education and training of investigators/clinicians/teachers.  
Informatics & informatics networks; for example, patient databanks.  
Specimen resources (serum, tissue, etc.).  
Reagents and chemical standards.  
Epidemiological study methods.  
Statistical methodology or biostatistical methods.

## **PREVENTION**

### **3.1-Interventions to Prevent Cancer: Personal Behaviors that Affect Cancer Risk**

Research on determinants of personal behaviors, such as diet, physical activity, sun exposure and tobacco use, that affect cancer risk.  
Interventions to change personal behaviors that affect cancer risk.

### **3.2-Nutritional Science in Cancer Prevention**

Quantification of nutrients and micronutrients.  
Studies on the effect(s) of nutrients or nutritional status on cancer incidence.  
Dietary assessment efforts including dietary questionnaires and surveys.  
Development, characterization and validation of dietary/nutritional assessment instruments.

### **3.3-Chemoprevention**

Chemopreventive agents and their discovery, mechanism of action, development, testing in model systems and clinical testing.

### **3.4-Vaccines**

Vaccines for prevention, their discovery, mechanism of action, development, testing in model systems and clinical testing.

### **3.5-Complementary and Alternative Prevention Approaches**

Discovery, development and testing of complementary/alternative prevention approaches such as herbs, supplements or other interventions which are not widely used in conventional medicine or are being applied in different ways as compared to conventional medical uses.

### **3.6-Resources and Infrastructure Related to Prevention**

Education and training of investigators/clinicians/teachers.  
Informatics & informatics networks; for example patient databanks.  
Specimen resources (serum, tissue, etc.).  
Epidemiological (observational) studies.  
Clinical trials infrastructure.  
Statistical methodology or biostatistical methods.

## **EARLY DETECTION, DIAGNOSIS AND PROGNOSIS**

### **4.1-Technology Development and/or Marker Discovery**

Discovery of markers (e.g., proteins, genes) and/or imaging methods that are potential candidates for use in cancer detection, diagnosis and/or prognosis.

### **4.2-Technology and/or Marker Evaluation with respect to Fundamental Parameters of Method**

Preliminary evaluation with respect to laboratory sensitivity, laboratory specificity, reproducibility and accuracy.

### **4.3-Technology and/or Marker Testing in a Clinical Setting**

Evaluation of clinical sensitivity, clinical specificity and predictive value.  
Quality assurance and quality control.  
Inter and intra-laboratory reproducibility.  
Testing of the method with respect to effects on morbidity and/or mortality.  
Study of screening methods including compliance, acceptability to potential screenees, receiver-operator-characteristics.

#### **4.4-Resources and Infrastructure Related to Detection, Diagnosis or Prognosis**

Education and training of investigators/clinicians/teachers.  
Informatics & informatics networks; for example patient databanks.  
Specimen resources (serum, tissue, images, etc.).  
Clinical trials infrastructure.  
Epidemiological studies pertaining to risk assessment, detection, diagnosis or prognosis.  
Statistical methodology or biostatistical methods.

### **TREATMENT**

#### **5.1- Localized Therapies - Discovery and Development**

Discovery and development of treatments which target the organ and/or neighboring tissue directly including but not limited to surgical interventions and radiotherapy.

#### **5.2- Localized Therapies - Clinical Applications**

Clinical testing and application of treatments which target the organ and/or neighboring tissue directly including but not limited to surgical interventions and radiotherapy. Phase I, II or III clinical trials of promising local therapies.

#### **5.3-Systemic Therapies - Discovery and Development**

Discovery and development of systemically active treatments such as cytotoxic, hormonal agents, novel systemic therapies such as immunologically directed therapies (vaccines, antibodies), gene therapy, angiogenesis inhibitors, apoptosis inhibitors and differentiating agents. Defining molecular signatures of cancer cells. Identifying molecular targets for drug discovery. Includes mechanistic studies of cellular metabolism, combinatorial chemical synthesis, drug screening, development of high throughput assays and testing in model systems.

#### **5.4-Systemic Therapies - Clinical Applications**

Clinical testing and application of systemically administered treatments such as cytotoxic, hormonal agents, novel systemic therapies such as immunologically directed therapies (vaccines, antibodies), gene therapy, angiogenesis inhibitors, apoptosis inhibitors and differentiating agents. Phase I, II or III clinical trials of promising systemic therapies.

#### **5.5-Combinations of Localized and Systemic Therapies**

Development and testing of combined approaches to treatment.

#### **5.6-Complementary and Alternative Treatment Approaches**

Discovery, development and testing of complementary/alternative treatment approaches such as herbs, supplements, natural substances or other interventions which are not widely used in conventional medicine or being are applied in different ways as compared to conventional medical uses.

#### **5.7-Resources and Infrastructure Related to Treatment**

Education and training of investigators/clinicians/teachers.  
Informatics & informatics networks; for example clinical trial networks and databanks. Mathematical and computer simulations.  
Specimen resources (serum, tissue, etc.).  
Clinical trial groups.  
Statistical methodology or biostatistical methods.  
Drugs and reagents for distribution and drug screening infrastructures.

### **CANCER CONTROL, SURVIVORSHIP AND OUTCOMES RESEARCH**

#### **6.1-Survivorship Issues (Post-treatment concerns)**

Quality of life - post treatment.  
Pain management - post treatment.  
Psychological impacts of cancer survivorship.  
Rehabilitation.  
Reproductive issues.  
Long term morbidity.

## **6.2-Patient Care (Diagnosis through Treatment) Including Supportive**

Quality of life - diagnosis through treatment.

Pain management - diagnosis through treatment.

Symptom management including: nausea, vomiting, lymphedema, neuropathies etc.

Prevention of treatment related toxicities and sequelae including symptom management, prevention of mucositis, prevention of cardiotoxicities, etc.

## **6.3-Surveillance**

Epidemiology and End Results Reporting (SEER).

Surveillance of cancer risk factors (diet, body weight, physical activity, sun exposure, and tobacco use).

Analysis of variations in risk factor exposure by demographic or other factors.

Registries which track incidence, morbidity and/or mortality related to cancer.

Trends in use of interventional strategies.

Method development for risk factor surveillance.

## **6.4-Behavior Related to Cancer Control**

Behavior medicine research and interventions.

Influence of social factors, such as, community, policy, education, and legislation, on behaviors related to cancer control.

Attitudes and belief systems and their influence on psychological health and on behaviors related to cancer control: example, how beliefs can alter attempts to seek screening, detection, and treatment

Interventions to change attitudes and beliefs that affect behavior related to cancer control and cancer outcomes.

Influences of attitudes and beliefs on compliance to treatment and prevention protocols.

Psychological or educational interventions to promote behaviors that lessen treatment related morbidity and promote psychological adjustment to the diagnosis of cancer and to treatment effects.

Burdens of cancer on family members and psychological/behavior issues.

## **6.5-Cost Analyses and Health Care Delivery**

Analyses of cost-effectiveness of methods used in cancer prevention, detection, diagnosis, prognosis, treatment and survivor care/support.

Studies of providers, such as geographical or care-setting variations in outcomes.

Affect of reimbursement and/or insurance on cancer control, outcomes and survivorship support.

Access to care issues.

## **6.6-Education and Communication**

Development of communication tools and methods.

Education of patients, physicians, at-risk populations and general population about cancer.

Communication to patients regarding therapeutic options.

Educational interventions to promote self-care and symptom management.

Communicating cancer risk to underserved populations, at-risk populations, and the general public.

Alternative teaching methods to communicate therapeutic options and risk reduction behavior to patients or the general public.

Communication of life style models that reduce cancer risk such as communication of nutrition interventions.

Communicating smoking and tobacco cessation interventions.

Special approaches and considerations for underserved and at-risk populations.

Education, information, prevention/screening/assessment systems for the general public or primary care professionals.

Training, predictive cancer models, pain management, and surveillance systems for primary care professionals, telehealth/telemedicine applications.

Communication regarding cancer genetics, managed oncology care, communicating with survivors.

Barriers to successful health communication.

### **6.7-End of Life Care**

End of Life Care issues including palliative care, psychological interventions with families at end of life, hospice care, pain management for terminally ill patients, etc.

### **6.8-Ethics and Confidentiality in Cancer Research**

Informed consent modeling and development.  
Quality of Institutional Review Boards.  
Protecting patient confidentiality and privacy.  
Research ethics.

### **6.9-Complementary and Alternative Approaches for Supportive Care of Patients and Survivors**

Hypnotherapy, relaxation, transcendental meditation, imagery, spiritual healing, massage and biofeedback, etc.

### **6.10-Resources and Infrastructure Related to Cancer Control, Survivorship and Outcomes Research**

Education and training of investigators/clinicians/teachers  
Informatics & informatics networks.  
Clinical trial groups.  
Statistical methodology or biostatistical methods.  
Surveillance infrastructures.

## **SCIENTIFIC MODEL SYSTEMS**

### **7.1-Development of Model Systems**

Development of model systems, including but not limited to:  
Computer-simulation model systems  
In-vitro models systems  
Cell culture model systems  
Organ and tissue model systems  
Animal model systems such as *drosophila* and *c. elegans*, zebra fish, mouse, etc.

### **7.2-Characterization of Model Systems**

Characterization of model systems, including but not limited to:  
Computer-simulation model systems  
In-vitro models systems  
Cell culture model systems  
Organ and tissue model systems  
Animal model systems such as *drosophila* and *c. elegans*, zebra fish, mouse, etc.

### **7.3-Resources and Infrastructure Related to Scientific Model Systems**

Education and training of investigators/clinicians/teachers.  
Models made available for distribution to the scientific community.

## APPENDIX B: RESEARCH AREAS

The following is a list of specific research areas in alphabetical order. Please select all terms that apply to you and the areas of research covered in the grant application. Insert these in the electronic application as indicated.

AIDS and Cancer	Gene Cloning and Mapping	Mutagenesis
Aging	Gene Expression	Multimodality Therapies
Alkylating Agents	Gene Knockouts	Natural Killer Cells
Angiogenesis/TumorPathoiphysiology	Gene Rearrangements (Translocations)	Neoplastic Transformation
Antifolates	Gene Regulation	Neuroendocrines
Antimitotic Agents	Gene Therapy	Neuropathology
Antisense Oligonucleotides	Gene Transcription	Neuropeptides
Antiviral Therapy	Gene Transfection	Non-Steroid Receptors
Apoptosis	Genetic Predisposition and Cancer Risk	Novel Antitumor Agents
Aromatase Inhibitors and Hormone Antagonists	Glucocorticoid Receptors	Novel Drug Delivery Systems
Aromatic Amines	Glutathione Metabolism	Nuclear Magnetic Resonance
Autologous Bone Marrow Transplantation	Glycoproteins	Nuclear Matrix
Autoradiography	Growth Factors and Cell Proliferation	Oncogenes and Their Expression
Biochemical Modulators of Therapy and Toxicity	Hematopoietic Colony Stimulating Factors	Oncogenes in Diagnosis and Prognosis
Biological Response Modifiers	Hemodynamics	Organic Chemistry
Biomarkers	Hepatitis Virus and Cancer	Oxidative Metabolism
Cachexia	Histochemistry	Oxygen Free Radicals and Carcinogenesis
Cancer Control and Screening	Histopathology and Cytology	Parasitology
Cancer Vaccines	Hormonal Carcinogenesis	Pharmacokinetics
Cancer in Poor & Underserved Populations	Hormone Function and Metabolism	Phase I-II Studies
Carbohydrate Metabolism	Hormones and Antihormones in Therapy	Photon Emission Tomography
Carcinogen-Gene Interactions	Hormones and Breast Cancer	Phototherapy
Carcinogen Metabolism & DNA-Adduct Formation	Hormones and Other Reproductive Tract Cancers	Physical Carcinogenesis
Cell Adhesion Molecules and Integrins	Hormones and Prostate Cancer	Plant Tumors
Cell and Tissue Culture	Hormones (Endogenous) and Cancer Risk	Platinum Complexes
Cell and Tissue Kinetics	Host-Tumor Relationships	Polyamines
Cell Cycle Regulation	Human Tumor Viruses	Polymerase Chain Reaction
Chalones	Human Tumor Xenografts	Population-Based Studies
Chemoprevention (Modulation of Carcinogenesis)	Hyperthermia	Prevention and Public Health
Childhood Cancer	Hypoxic Therapy	Primary and Adjuvant Chemotherapy
Chromatin Structure and Function	Immunobiology	Prostaglandin Synthesis and Function
Clinical Hematology	Immunodeficiency	Proteases and Their Inhibitors
Clinical Practice	Immunodiagnosis	Protein Kinases
Clinical Trials in Leukemias and Lymphomas	Immunogenetics	Protein Metabolism
Clinical Trials in Solid Tumors	Immunomodulation	Public Policy
Combination Chemotherapy	Immunosuppression	Purine and Pyrimidine Derivatives
Combined Modalities of Therapy	Immunotherapy (Clinical)	Radiation Sensitizers
Comparative Pathology (Including Invertebrate)	Immunotherapy (Experimental)	Radiobiology
Computer Methods and Modeling	Inhibitors of Protein Synthesis or Activity	Radiation Therapy
Cytogenetics (Molecular and Other)	Inhibitors of Purines and Pyrimidines	Retinoids
DNA Binders and Intercalators (Topoisomerases)	Intercellular Communication	Retroviruses
DNA Damage and Repair	Interferons	Risk Assessment and Carcinogenesis
DNA Methylation	Interleukins	RNA Tumor Viruses
DNA Tumor Viruses	Invasion and Metastasis	Signal Transduction
Diagnostic Techniques	Lifestyle Etiology	Smoking
Diet and Nutrition	Lipid Metabolism	Somatic Cell Genetics
Differentiation	Lymphocytes	Spheroids & Other 3-Dimensional Models
Differentiation Therapy	Lymphokines and Cytokines	Stem Cell
Drug Development & Delivery Systems	Macromolecular Structure and Function	Steroids and Their Receptors
Drug Evaluation Methodology	Macrophages and the Reticuloendothelial System	Study Design and Methods
Drug Metabolism	Membrane Structure and Function	Supportive Care of Cancer Patients
Drug and Multidrug Resistance	Membrane Transport	Surgical Oncology
Electron Spin Resonance	Mesenchymal/Epithelial Alterations in Oncogenesis	Telomerase
Environmental and Occupational Etiology	Metabolic Regulation of Growth	Teratology
Enzymes	Metals	Toxicology
Ether Lipids	Molecular Basis of Human Cancers	Transgenic Mice
Etiology and Natural History of Tumors	Molecular Biology of Viruses	Transport Inhibitors
Experimental Hematology	Molecular Carcinogenesis	Tumor Angiogenesis/ Pathophysiology
Experimental Immunotherapy	Molecular Immunology	Tumor-Associated and Fetal Antigens
Experimental Pathology	Monoclonal and Other Antibodies	Tumor Heterogeneity
Extracellular Matrix		Tumor Immunity, Cellular
Flow Cytometry		Tumor Immunity, Humoral
Gene Amplification		Tumor Models

Tumor Necrosis Factor  
Tumor Progression  
Tumor Promotion  
Tumor Suppressor Genes  
Ultrastructural Pathology  
Viral Carcinogenesis/Transformation

## **APPENDIX C: GENERAL AUDIENCE SUMMARY EXAMPLE**

This project is a career development award for Jasper Jones, M.D. The award will improve Dr. Jones's skills in screening for liver cancer as well as skin cancer in patients at the University of the Mountains. It will also allow him to teach students, residents, and practicing physicians these skills.

The research project is a survey of physicians on their attitudes and practice toward the screening of hepatitis B, hepatitis C, and liver cancer. Liver cancer is a disease that is growing in importance and disproportionately affects some populations such as Asian Americans, African Americans, and Latino Americans. Viral hepatitis B and C infections, which can predispose to the development of liver cancer, are also common in these populations. There are good screening tests for viral hepatitis B and C, and increasingly, there are effective treatments for these diseases. There are also screening tests for liver cancer that may enable detection of smaller size tumors. Little is known, however, regarding what physicians are offering patients with respect to these screening tests. The research project will address this by surveying primary care physicians and specialists in liver diseases regarding their practice in screening for hepatitis B, hepatitis C, and liver cancer in high-risk groups. The results will lead to more accurate description of current physician practices in the prevention of liver cancer and may lead to interventions to target those physicians who may be underscreening or overscreening for these diseases.