AMERICAN CANCER SOCIETY

GENERAL GRANT APPLICATION INSTRUCTIONS

EFFECTIVE SEPTEMBER 2025

ELECTRONIC APPLICATION DEADLINES: June 1 and December 1

AMERICAN CANCER SOCIETY, INC.
Extramural Discovery Science Department

Link to website: Click Here
Link to ProposalCentral application portal: Click Here
Email: grants@cancer.org

MISSION

The **American Cancer Society's** mission is to improve the lives of people with cancer and their families through advocacy, research, and patient support, to ensure everyone has an opportunity to prevent, detect, treat, and survive cancer.

AMERICAN CANCER SOCIETY

ALL GRANT APPLICATION INSTRUCTIONS

CONTENTS

I. GENERAL GUIDANCE AND PROPOSALCENTRAL SECTIONS

1. GENERAL INFORMATION FOR APPLICANTS

- Current funding opportunities can be found on our website, here. This instructions document provides guidance for the preparation of applications submitted to our standard funding mechanisms. Special funding opportunities and requests for applications may have their own guidance documents. Please review the guidance provided online for each funding announcement.
- It is *strongly recommended* that applicants review the eligibility requirements in the grant policies to ensure they are eligible for their intended grant mechanism prior to applying. Applications may be withdrawn without review if an applicant or institution does not meet the eligibility criteria.
- Application materials are updated and made available in ProposalCentral approximately 3 months prior to the next application deadline.
- **Applicant use of generative AI tools:** An applicant is responsible for all content in their application, including any content generated using an AI tool or large language model. The applicant should appropriately credit an AI tool used in the development of their application and appropriately cite the source of the content whenever possible. Applicants should follow any guidelines or regulations in place at their institution, and the use of AI tools cannot conflict with the ACS Guidelines for Research and Peer Review Integrity in the grant policies.

2. AMERICAN CANCER SOCIETY (ACS) GRANT APPLICATION SYSTEM

- We utilize ProposalCentral for the preparation, submission, review, and management of all grant applications and awards. Follow instructions for login/register, completion, and submission.
- Key steps:
  - Filter on the “Grant Opportunities” Tab > “Choose American Cancer Society” > “Review Grant Types” > “Select Grant” > “Apply Now.”
  - After selecting the grant mechanism for which you intend to apply, enter Project Title (unless already displayed) > SAVE. This permits access to all other application components.
  - Saved applications are stored under “Proposals”.
- Applications that were started but not submitted during a previous submission cycle should not be edited and submitted in a different cycle. Applicants should always start a new application in ProposalCentral each cycle. This ensures that applicants are submitting an up-to-date application that conforms to current ACS regulations and parameters.
- See ProposalCentral login page for tutorials and additional details about the grant application process.
- For assistance with issues associated with ProposalCentral, click “Help” or contact ALTUM Customer Service at pcsupport@altum.com or 1-800-875-2562.

3. APPLICATION FORMAT GUIDELINES

- Insert Principal Investigator (PI) name in the header for each template of the application. Do not change the footers on the templates.
- Application documents may be single- or double-spaced (if single spacing, enter a space between paragraphs).

- **Type size:** 12-point Times New Roman or 11-point Arial are the minimum font sizes for the text; 10-point Times New Roman or 9-point Arial font type may be used for figures, legends, and tables.
- **Margins:** ≥ 0.5 inches all around unless a form with different margins is supplied in the Application Templates.
- **Page numbering:** Number the pages in upper right corner according to the proposal sections listed in the Table of Contents.
- **Do not number:** Signature Page, Contact Page, General Audience Summary, Structured Technical Abstract, Statement of Cancer Relevancy and Impact, Justification of Alignment with Research Priorities, Budget & Justification, if applicable, or the Appendix.
- **NIH Biosketches:** Use the current NIH format for all NIH Biosketches. If the NIH has modified the NIH biosketch, applicants may use the newly modified template, or the template provided in ProposalCentral.
- **Application Sections:** When uploading multiple templates for one attachment type (e.g., key personnel letters of support), all completed templates may be combined into a single PDF and uploaded as the designated attachment type or they may be individually uploaded as the designated attachment type.

4. UPDATES OF INFORMATION

The following updates should be communicated as specified to your Scientific Director. If it is before you have received an application number, contact the Extramural Discovery Science Department at grants@cancer.org.

Note: Supplemental materials to an application or application modifications will not be permitted once the application has been submitted unless specifically requested by EDS staff.

Withdrawal of Application: Notify the Department promptly of your intent to withdraw your application. Include in your letter or email, the PI name, application number, and reason for withdrawal. If the project has been funded by another organization, please list that funding agency.

Change of Address: Notify the Department via email if a mailing address, email address, or phone number has changed since submission. Include the PI name and application number on the correspondence and update your information in ProposalCentral.

Change of Institution: If you change institutions between application submission and peer review, contact the Scientific Director to inquire how this may impact the review.

5. TITLE PAGE, APPLICANT, AND INSTITUTION INFORMATION

Note: Not all fields are required for all applications; see grant-specific instructions.

Project Title: Do not exceed 150 characters including spaces; avoid abbreviations if possible. **Note:** The title will be truncated after 81 characters on the formatted PDF title page. Once the application is submitted, the title of the application cannot be updated.

Applicant/Principal Investigator Information: Some (or all) of the required information from your Professional Profile may already be displayed. If any information is outdated, ***stop*** and update the Professional Profile before completing this section and submitting an application. Please keep all contact information current.

- **Citizenship Status:** On ProposalCentral under "Professional Profile", indicate your current citizenship status and country of citizenship. Note: US citizenship is not required to submit an application and is not evaluated by reviewers.

- **Degree and Independent Position Dates:** Under Professional Profile, indicate the date (months and year) your terminal degree was awarded and when your first independent faculty position (or equivalent) began, if applicable.
- **Space:** If applicable, indicate the approximate area of independent research space provided by your institution to support your research program, along with the name of the department head who can verify this commitment. You must insert a value for square footage under Professional Profile, even if that number is zero.
- **ORCID Identifier:** ORCID provides a persistent digital number that you own and control, and that identifies you from every other researcher. Please provide an ORCID identifier if you have one. To add the ORCID ID, click Professional Profile and connect/register for an ID. Once connected, return to your proposal, and click Save.

Institution and Contacts: Provide the requested information for the PI's sponsoring institution and institution officials.

- **MSI Designation:** Indicate using the radio buttons whether the PI's institution is a US Department of Education-designated Minority Serving Institution (MSI). If yes, then select the type of MSI from the dropdown list. Some common MSI combinations are provided in the dropdown menu, but the list is not exhaustive. Use the text box to enter the type if your institution's MSI or combination is not in the list. Note: MSI designation is not an institution eligibility requirement and is not evaluated by reviewers.

  MSIs and Abbreviations:

  - ANNH: Alaska Native and Native Hawaiian
  - AANAPISI: Asian American and Native American Pacific Island Serving Institution
  - HSI: Hispanic Serving Institution
  - HBCU: Historically Black Colleges and Universities
  - NASNTI: Native American Indian Serving Non-Tribal Institution
  - PBI: Predominantly Black Institution
  - TCU: Tribal Colleges and Universities

- **Institutional Official:** Indicate the name and address of the official authorized to sign for the institution. Institutional Officials may electronically sign the application if required by the institution, but this is not required by ACS for submission. The PI must give the Institutional Official access to the application for e-signing to be completed.
- **Technology Transfer Officer (TTO):** Indicate the name and email address of the TTO. The TTO is responsible for technology transfer and other aspects of the commercialization of research that takes place at a university. The TTO will be responsible for reporting all IP updates to the ACS should the project be awarded funding.
- **Department Chair:** Indicate the name, department, and email address of the Department Chair. The electronic signature of the Department Chair is not required by the ACS.
- **Primary Mentor:** Complete all fields for mentor information (if applicable).
- **Additional Mentor:** Complete all fields for additional mentor information (if applicable).

6. KEY PERSONNEL

Add personnel associated with the application and included in the budget and justification by entering their email address. Select the role that corresponds most closely with the person's contribution to the project (see definitions below).

Key Personnel: Defined as individuals who contribute to the scientific development or execution of a project in a substantive and measurable way (whether or not they receive salaries or compensation

under the grant). Key Personnel are personnel that give >0% effort to the project, even if they are not being compensated. Enter the required information for each Key Person, including their designated role. **The PI is always considered Key Personnel, but do not list them under Key Personnel on ProposalCentral.**

Key Personnel can include individuals at the doctorate, master's, or baccalaureate level (such as postdoctoral fellows, graduate students, and research assistants) if they meet this definition.

Key Personnel are required to designate >0% effort, even if they are not being compensated.

Key Personnel Roles and Definitions

The **Principal Investigator** assumes the authority and responsibility to direct the project. The ACS does not permit applications to be directed by multiple Principal Investigators.

A **Co-Investigator** is a vital scientific contributor at the same or a different institution, often bringing a needed expertise to the research team. This person commits some level of measurable effort to the project and is therefore Key Personnel, whether compensated or not.

A **Collaborator** plays a lesser role in the scientific development and execution of the project than co-investigator. Depending on the role and amount of effort, a collaborator may be designated as Key Personnel and may be compensated.

A **Consultant** provides expert advice, most often for a fee. If the consultant contributes to the scientific development or execution of a project substantively and measurably, he or she should be designated as Key Personnel.

Other personnel are defined as individuals who are compensated for their contribution to the project but are not considered Key Personnel (e.g., student assistants, technical staff).

A **Mentor** assists in the scientific and professional development of the mentee. A primary mentor should be identified and listed as Key Personnel ONLY for Postdoctoral Fellowships and Clinician Scientist Development Grants. If additional mentors are identified, they should also be listed as Key Personnel.

The table below provides information about the documents required for each personnel class. See grant-specific instructions for detailed guidance.

REQUIRED SUPPORTING DOCUMENTS FOR NAMED PERSONNEL

Personnel	Designated "Key"	Biosketch	"Other Support" Documentation	Included in Budget & Justification	Letters
Principal Investigator	Yes[a]	Yes	Yes	Yes	N/A
Co-Investigator	Yes	Yes	Yes[b]	Yes[c]	Letter of Agreement/Support[b]
Collaborator	Yes	Yes	Yes[b]	Yes[c]	Letter of Agreement/Support[b]
	No	No	No	No	
Consultant	Yes	Yes	Yes, if paid[b]	Yes, if paid[c]	Letter of Agreement/Support[b]
	No	No	No	Yes, if paid	
Other	No	No	No	Yes	No
Mentor(s)[d]	Yes	Yes	Yes	Yes[d]	Letter of Agreement/Support

[a] The PI is always considered Key Personnel but supporting documents should **not** be duplicated in the Key Personnel section on ProposalCentral.

[b] For postdoctoral fellows, technicians, and graduate students, supporting documents are not required.

[c] If Key Personnel are not being paid, enter $0 for the amount requested; percent effort is required. Note that the percent effort indicated on the budget tool in ProposalCentral can be different than the requested compensation.

[d] For mentored grants (e.g., CSDG, PF), include the Primary Mentor and other mentors, if applicable, as Key Personnel. Only CSDGs should include the mentor(s) in the budget/budget justification.

7. GENERAL AUDIENCE SUMMARY

Complete this in the designated textbox in ProposalCentral, under "General and Technical Abstract and Project Coding." This form is limited to 3,100 characters including spaces and will truncate at that point. Comply with the character limit to permit readers (including peer reviewers) to fully appreciate the "big-picture perspective" of the proposal.

The general audience summary provides an overview of the proposed research for people who are ***not*** trained in the sciences. This summary may be read by peer review Community Research Partners, ACS staff members, potential donors, and the public. **Community Research Partners** are individuals without formal scientific or medical training who are full voting members of peer review panels. The Community Research Partner uses the general summary to evaluate how the proposed work will benefit cancer patients and their families.

- **ACS staff members** use these summaries to identify projects that align with the specific interests of **donors** and may share them with donors.
- Staff may use the summary for communicating to local media about ACS-funded studies. Summaries of all grants funded by the Society are also made available to the **public**. Therefore, do not include proprietary/confidential information.

The general audience summary should ***not*** duplicate the structured technical abstract and should be written in an understandable way for the general public. Describe concisely the background, significance, question(s) being asked, information to be obtained, and potential impact of your proposed research. If symbols or Greek characters must be used, they should be spelled out to avoid formatting problems. *See examples of General Audience Summaries in Appendix A.*

8. STRUCTURED TECHNICAL ABSTRACT

Complete this in the designated textbox in ProposalCentral, under "General and Technical Abstract and Project Coding." This form is limited to 3,100 characters including spaces and will truncate at that point. Comply with the character limit to permit peer reviewers to fully appreciate the technical synopsis. ***Note: Not all applications require a structured technical abstract. If this abstract is required there will be a designated textbox for it on ProposalCentral.***

The structured technical abstract is a summary of the proposed research or scholarly project for **general scientific** audiences. *See examples of Structured Technical Abstracts in Appendix B.*

Organize the abstract into the following sections:

- Background
- Objective/Hypothesis
- Specific Aims
- Study Design

The American Cancer Society may share the structured technical abstract under a non-disclosure agreement with a third party. Therefore, do not include proprietary information. Please notify your program office if you do not wish to have your abstract utilized in this manner.

9. STATEMENT OF CANCER RELEVANCE AND IMPACT

Complete this in the designated textbox in ProposalCentral, under "General and Technical Abstract and Project Coding." This section is important to the Community Research Partners as well as to several general audiences, including donors. **Avoid the use of technical jargon.** This form is limited to 1,500 characters including spaces and will truncate at that point.

In this statement, describe how the project may ultimately contribute to the control of cancer and explain how the successful completion of the proposed work will lead to a better understanding of the disease or improve our ability to prevent, detect, treat, and survive cancer. Where applicable, explain how this work may inform public health recommendations, policy, and/or clinical care guidelines.

10. JUSTIFICATION OF PROJECT ALIGNMENT TO RESEARCH PRIORITIES

Complete this in the designated textbox in ProposalCentral, under "General and Technical Abstract and Project Coding." In this section, explain how your proposed project aligns with the selected research priority/priorities. If your project aligns to multiple priority areas, provide additional justification of the alignment to those areas in this section as well. Please make sure that the priority area or areas are noted in the statement. Note: This form is limited to 1,500 characters, including spaces. If the character limit is exceeded in this section, it will be truncated. Examples of research priority alignment statements are provided in Appendix C.

11. SELECTION OF RESEARCH PRIORITIES

Complete this in the designated field in ProposalCentral, under "General and Technical Abstract and Project Coding." Select the research priority or priorities to which your proposed project most strongly aligns and indicate the percent alignment. If multiple priorities are selected, the total should equal 100%. You are required to select a research priority area. Descriptions of the research priorities can be found in the Standard Grants Policies document (pages 4-6).

12. PROGRAM OFFICE AND PEER REVIEW COMMITTEE SELECTION

Complete this in the designated fields in ProposalCentral, under "General and Technical Abstract and Project Coding." Descriptions of each program office and their associated peer review committees are available on our website.

If applicable, first select the program office that manages the peer review committee you think best aligns with the proposed science. The peer review committee can then be selected from the available list. Applicants will be notified of the assigned committee before peer review begins. The program offices make final committee assignment decisions based on the best fit for the application.

If the application is a resubmission, select the program office and peer review committee where the previous application was reviewed. ACS's general practice is to assign resubmitted application to the committee that initially reviewed the proposal. Applicants who want to request that a resubmitted application be reviewed in a different committee should contact their program office directly.

13. PROJECT CODING: CSO CODES AND CANCER TYPES

Complete this in the designated fields in ProposalCentral, under "General and Technical Abstract and Project Coding." ***Note: Project coding is not considered at peer review. Red asterisks indicate required fields; not all grant types require project coding.***

Donors often have an interest in funding specific types of cancer research. Your selection of project codes permits identification of proposals for consideration of donor-driven special funding. This information also assists ACS in communicating our research portfolio to the public.

Select the most appropriate Areas of Research (Common Scientific Outline—CSO) and Types of Cancer. Note that relevant items may be included under Resources and Infrastructure Related to [specific area]. See Appendix D for specific terms and examples.

Applicants must also select the type(s) of cancer of relevance to the project; up to 5 cancer types may be selected.

14. ASSURANCES AND CERTIFICATION

All activities involving human subjects and vertebrate animals must be approved by the appropriate institutional committee before an application approved for funding can be activated, but approval is not required for application submission. Compliance with current US Department of Health and Human Services and ACS guidelines for conflict of interest, recombinant DNA, and scientific misconduct is also required.

Vertebrate Animals: Every proposal involving vertebrate animals must be approved by an Institutional Animal Care and Use Committee (IACUC), in accordance with Public Health Service Policy on Humane Care and Use of Laboratory Animals before a grant can be activated. Enter the date of the most recent IACUC approval in the space provided.

All research supported by the ACS (including subcontracted activities) involving vertebrate animals must be conducted at performance sites covered under an approved Animal Welfare Assurance. It is the responsibility of the institution to immediately report to the ACS any action, including recertification or loss of IACUC approval, that is pertinent to the work described in the grant application.

Human Subjects: All proposed research projects involving human subjects must be approved by an Institutional Review Board (IRB) at an institution approved by the Office for Human Research Protections (OHRP) of the US Department of Health and Human Services (DHHS). Enter the institution's Assurance of Compliance number(s). Copies of the DHHS policy, assured status, and assurance numbers may be obtained from OHRP. Definitions and further clarification can be found at the NIH Office of Extramural Research website.

Submission of Approval Documentation: If institutional review of human or vertebrate-animal subjects has not been finalized before the submission date of the application, you must indicate that approval is pending on the certification page and give the appropriate institutional reference numbers, if available. Approval is not required at submission, but, if awarded, the Institutional Official who signs during the grant activation process is responsible for confirming that approval has been granted for the research to begin. Failure to comply may result in withholding of payments and/or cancellation of funding. For record keeping purposes, certification of the approval, clearly labeled with the assigned ACS application number, must be uploaded to ProposalCentral within 3 months of grant activation.

Note: Applications for the Institutional Research Grant (IRG) do not require submission of IRB and IACUC certifications. Regardless, institutions must comply with the requirements described above to use ACS grant funding for activities involving human subjects or vertebrate animals.

If a grant is funded, it is the responsibility of the institution to immediately report to the ACS any action, including recertification or loss of IRB approval, which occurs during the term of the award that is related to the research described in the grant application.

15. PI DATA SHEET

The PI demographic information is for use by the Extramural Discovery Science department. While “prefer not to disclose” is an option, we **strongly encourage** all applicants to specify their gender, race, ethnicity, and sexual orientation. We use this information for statistical purposes to understand the diversity of our applicant pool. We are committed to investing in a diverse research workforce and these data enhance our ability to develop inclusive policies and new funding opportunities to

address current limitations. ***This information is not accessible to peer reviewers and is not considered during peer review.*** By sharing this information with us, you help the American Cancer Society track our progress in DEI and identify areas that need improvement.

16. RESUBMISSIONS

Resubmission guidelines:

- All applicants submitting a resubmission must create a new application in ProposalCentral and submit a complete application electronically in ProposalCentral.
- The title of the project can be different from the original or previous submission.
- Applicants are responsible for reviewing grant-specific policies for the allowable number of resubmissions. Do not exceed the allowable number of resubmissions permitted for a given mechanism.
- Resubmitted applications should include a copy of the critiques from the previous submission and a response to reviewer critiques (see mechanism-specific instructions).

In the title page section on ProposalCentral respond to the following:

- **Proposal Type:** Select "Resubmission" from the dropdown menu if the application is a resubmission of a previously submitted proposal.
- **Resubmission?:** Select "yes" from the dropdown menu, indicating that the application is a resubmission.
- **Prior application selection:** From the dropdown menu, select the prior application number associated with the most recent prior submission of the proposal.
- **Peer Review Committee Code:** Enter the Peer Review Committee code that reviewed the previous submission. Use the Peer Review Committee codes document in ProposalCentral as a reference.
- **First or Second Resubmission:** Select whether the application is the first or second resubmission. If you are submitting a new application, select "Not Applicable" from the dropdown menu.

17. APPLICATION SUBMISSION AND REQUIRED E-SIGNATURE

- All application attachments, including the Appendix, must be uploaded as .pdf documents.
- Validate the application on ProposalCentral. An application that has not been validated cannot be electronically submitted.
- Applications must be electronically submitted on ProposalCentral by 11:59 PM ET on the specified deadline date. If the standard deadline falls on a weekend or holiday, applications will be due the following business day.
- The applicant's electronic signature is required on the Signature Page. E-signatures of the Institutional Official and the Department Head are optional but available for use should the institution require them. In order to e-sign an application, the signees must be included in the application contacts in ProposalCentral.
- Technical questions regarding the electronic application and submission process should be directed to Altum at https://proposalcentral.com/ or 1-800-875-2562.

Note: After submission, you will not be able to make any changes to the forms or upload any modifications to the files.

II. SPECIFIC INSTRUCTIONS BY GRANT MECHANISM

RESEARCH SCHOLAR GRANT INSTRUCTIONS

Applicants are *encouraged* to review the eligibility requirements in the grant policies to ensure they are eligible prior to applying. Applications may be withdrawn if an applicant or institution do not meet the eligibility criteria.

1. COVER PAGES

Complete all fields and required components in the ProposalCentral portal as described above (Section I: Subsections 5-15). The principal investigator is required to e-sign the application. We provide text boxes for e-signatures for the departmental chair (or equivalent) and institutional officials to accommodate institution-specific requirements for proposal submissions, but neither is required for submission to ACS. Note: the PI must enable other users' access to the application on ProposalCentral to permit their e-signatures.

If you have received a letter from the ACS Eligibility Committee or your Program Office granting an exemption or extension, indicate that in the Program Eligibility information section and upload the correspondence in the Appendix.

Active R01/R01-equivalent Award - RSG Investigators: Under the Applicant/PI Section of the application, enter the number of active R01 or R01-equivalent awards that the applicant is the PI of, including co- or multi-PI awards. See the grant policies for a definition of R01-equivalent awards.

2. APPLICATION TEMPLATES

Once an application is started on ProposalCentral, all necessary application templates are available to download. Complete off-line (described in individual sections below) and upload as .pdf documents before submitting the online application. *For assistance, see ProposalCentral's FAQ or call support at 1-800-875-2562.*

3. TABLE OF CONTENTS (PAGE 1.1)

The Table of Contents is pre-numbered, corresponding to the page numbers for the first page of each application section. Complete the Table of Contents by indicating the appropriate page numbers for the Research Plan section; the Table of Contents should not exceed 2 pages.

Itemize appendices in order of appearance at the bottom of the Table of Contents template; appendices do not need to have page numbers.

4. BIOGRAPHICAL SKETCH OF APPLICANT (PAGE 2.1)

Complete the NIH Biosketch template following the formats and instructions provided by the NIH. The Biographical Sketch **may not exceed 5 pages**.

Note: If the NIH has modified the NIH Biosketch, applicants may use the newly modified template, or the template provided in ProposalCentral.

5. REPLY TO PREVIOUS REVIEW (PAGE 3.1)

IF THE APPLICATION IS A NEW SUBMISSION, upload the provided template with "Not Applicable" in the body.

For resubmissions, address the points raised in the previous critiques and direct the reviewer to the specific sections of the text, figures, or tables where edits have been made. Revisions should be easily identifiable in the revised application (e.g., bold type, italicized, or underline type). This section should not exceed 3 pages.

6. PREVIOUS CRITIQUES (resubmissions only)

All resubmissions must include a copy of the previous critiques. In ProposalCentral, go to the "Submitted" page, select "View Review Info," click "Print" to save it as a .pdf. Upload the document to your new application with the other proposal sections.

7. RESEARCH PLAN AND ENVIRONMENT (PAGE 4.1)

Section (A) below (Specific Aims) should not exceed 1 page. Sections (B) through (E) below must not exceed 12 pages. This page limit does not include Sections (F) through (H).

The same proposal may be submitted to other funding agencies on an "either/or" basis, but ACS proposals must conform to our guidelines (including term and budget). If not, a proposal may be returned without review.

A. Specific Aims *(not to exceed 1 page)*. List the objectives and goals of your proposed research and briefly describe the scientific aims.

B. Background and Significance. Concisely summarize and critically evaluate relevant work done by your research group and others. Specifically state how the successful completion of the work proposed will advance scientific knowledge that is relevant to cancer discovery, prevention, detection, treatment, and/or survivorship.

C. Innovation.

- Explain how the application fills an unmet gap in the field and/or challenges and seeks to shift current research or clinical-practice paradigms. Innovation may also be found in the study population by including understudied groups and/or novel aspects of disease.
- Describe any novel, refined, and/or new applications of theoretical concepts, approaches, methodologies, instrumentation, or intervention(s) to be developed or used, and the advantage they offer over existing ones.

D. Preliminary Studies. Provide results of your prior research that are relevant to this proposal; reprints or preprints may be included in the Appendix. Note that the entire application is considered confidential, including any unpublished research.

E. Research Design. Describe your overall hypothesis, proposed methods, procedures, and data analysis in sufficient detail to permit evaluation by other scientists; include your rationale for approaches and analysis. Explain your project's feasibility and how the experiments proposed will address the Specific Aims. Discuss potential difficulties and limitations of your proposed methods and provide alternative approaches. Inclusion of an experimental timeline can be helpful.

F. Experimental Details *(optional – not to exceed 3 pages).* This section is available if more in-depth descriptions of the experimental design, technologies, or assays are needed to convey the specific approaches and procedures proposed.

G. Environment. Briefly describe the space and equipment available to carry out the proposed research (e.g., space designated specifically for your research program, shared space and/or core facilities). Investigators must have an institutional commitment of research facilities, and the amount of committed space must be verified (see Statement of Institutional Support in Section 13 below). This section is required and especially important for all non-tenure track applicants.

H. References. Each literature citation should include title, authors, book or journal, volume number, page numbers, and year of publication. There is no page limitation; this section is not included in the 12-page limit of Sections (B) through (E).

Note: Starting January 2024, the *Statement of Scientific Outreach and Advocacy* is no longer part of the approach section.

7B. RESEARCH PLAN AND ENVIRONMENT – RFA – (RSGI) – (PAGE 4.1)
The Role of Healthcare and Insurance in Improving Access to Care and Performance of Cancer Prevention, Early Detection, Treatment and Survivorship Services

Research to be funded by this RFA should focus on the changes in national, state, and/or local policy and the response to these changes by healthcare systems, insurers, payers, communities, practices, and patients.

Only resubmitted applications will be accepted for the RSGI grant mechanism. Applicants planning to submit a new proposal in this research area should apply for the standard RSG, if they meet eligibility requirements. For specific questions, contact the Clinical and Population Sciences Program Office.

8. DETAILED BUDGET

Complete the budget page located online at ProposalCentral. For applications submitted in June (December), use a start date of April 1 (October 1) of the next year.

Note: We've modified how subcontract budgets are collected. Subcontract information will be entered directly in the Detailed Budget section in ProposalCentral instead of uploading a separate template.

A. Subcontracts. If any portion of the proposed research is to be carried out at another institution add a subcontract, enter the name of that institution, and select the years associated with the subcontract. Under each category (Personnel, Equipment, Supplies, Travel, Miscellaneous) within the detailed budget section, include any budgeted items associated with the subcontract and select the subcontract from the dropdown menu on the right to tag the item. List indirect costs associated with each subcontract as a separate line item under indirect costs. Include the subcontract(s) in the budget justification section.

Subcontracts for the research project may be with public or private institutions, provided they do not violate ACS policies. Subcontracts involving a contractor residing outside the borders of the United States are not permitted, unless the applicant can document that it is not feasible to have the work performed within the United States.

Administrative pages: A Letter of Agreement between institutions pertaining to the subcontract should be included in the Appendix. The primary institution is responsible for disbursing funds (direct and indirect costs) to the subcontracting institution.

B. Personnel. Names and positions of all Key Personnel must be individually listed, and the percentage of time to be devoted to the project by each person should be entered. List all key personnel (defined as individuals who will participate actively in the design and/or execution of the studies and have a level of effort >0%) other than the PI. Details of contractual arrangements with personnel should be provided in the Justification of Budget section.

If the individual has not been selected, please list as "vacancy." Personnel may receive salary support up to a maximum that equals the NIH salary cap, prorated according to their percent effort on the project. If a Key Person is not receiving salary, you can request $0 for salary, but their percent effort is still required. Their effort and contribution to the project should be outlined in the Budget Justification even if they are not being compensated.

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.

NOTE:

- See above for definitions of Key Personnel.
- The Society does not cover the costs of student tuition or fees for graduate or undergraduate students.

C. Equipment

- **Permanent equipment.** Defined as items of nonexpendable property with a purchase cost per unit that equals or exceeds $5,000 with a useful life of more than one year. List separately and justify the need for each item of permanent equipment. Note: the cost of permanent equipment is not included in the direct cost total used to calculate indirect costs.
- **Small or expendable equipment.** Defined as expendable property with a purchase cost per unit that is less than $5,000 and/or that has a short service life (<1 year). Note: Equipment that equals or exceeds $5,000 with a useful life of more than one year is not included in the direct cost total used to calculate indirect costs.
- **General purpose equipment.** Equipment such as computers used primarily or exclusively in the actual conduct of the proposed scientific project are considered direct costs and may be included in the direct cost total used to calculate indirect costs. Computers or other general-purpose equipment that will be used on multiple projects or for personal use are not allowable expenditures.

D. Supplies. Group supplies into major categories (e.g., glassware, chemicals, radioisotopes, survey materials, animals, etc.).

E. Travel. List all travel expenses. Travel expenses should be appropriate and related to the ACS research award.

F. Miscellaneous Expenditures. List specific amounts for each item. Examples of allowed expenditures include publication costs and special fees (e.g., pathology, computer time and scientific software, and equipment maintenance).

G. Indirect Costs. To help the institution provide proper laboratory and clinical facilities, the Society will permit an indirect cost (IDC) allowance of up to 10% of the direct costs, excluding permanent equipment. If there is a subcontract, indirect costs can be provided to the secondary institution through negotiation with the Principal Investigator's institution but the total amount of indirect costs, inclusive of subcontracts, **may not exceed 10%** of the award. If a subcontract is receiving indirect costs, list the indirect costs for each institution separately in the indirect costs section of the budget form. The primary institution and the secondary institution cannot both claim indirect costs on work done at the secondary institution. The secondary institution can claim indirect costs on the work done there but not work done at the primary institution.

Example: Budget Cost Totals Year 1 for Standard RSG

Primary Direct Costs	$165,000	Primary IDC	$16,500
Subcontract Direct Costs	$50,000	Secondary IDC	$5,000
Total Direct	$215,000	**Total Indirect (10%)**	$21,5000
Total Costs Year 1		**$236,500**	

Note: Applicants should not budget above or below the allowable indirect cost rate. The primary institution is responsible for distributing funds, including indirect costs, to a subcontracting institution.

H. Total Amount Requested. Budget totals should reflect a maximum duration of 4 years. The maximum allowable budget is $946,000: $215,000 direct costs and 10% indirect costs ($21,500) per year for the 4-year project period.

Starting Fall 2023, all new RSG applications across all research programs must be 4-year projects. Resubmission of applications that were previously submitted for RSGI or RSG-HE applications under different guidelines will be allowed.

The amount on the application title page should match the total costs in the detailed budget section.

Note: For budgets that do not request the maximum allowable amount, if the grant is funded, the ACS will round the total to the nearest thousand dollars. We encourage applicants to request a budget amount that is rounded to an even thousand dollars.

9. JUSTIFICATION OF BUDGET

Provide budget justification on the template provided in ProposalCentral. Justify all items of permanent equipment costing over $5,000, as well as your needs for personnel, supplies, travel, and other miscellaneous items. If the budget includes a request for funds to be expended outside the United States or its territories, include an explanation of why such costs are essential for the successful conduct of the project, and why there are no alternatives. Provide details of contractual arrangements with key personnel in this section.

10. BIOGRAPHICAL INFORMATION OF KEY PERSONNEL (PAGE 5.1)

Complete the NIH Biosketch template following the formats and instructions provided by the NIH. The Biographical Sketch **may not exceed 5 pages**. All key personnel biosketches may be combined in a single PDF file and uploaded as the designated attachment type.

Note: If the NIH has modified the NIH Biosketch, applicants may use the newly modified template, or the template provided in ProposalCentral.

11. OTHER SUPPORT (PAGE 6.1)

Applicants should ensure that they **include all requested items listed below**, especially when modifying Other Support documents that were prepared for other funding agencies.

The ACS does not require applicants and Key Personnel to sign their Other Support document. All Other Support documents can be combined into a single PDF (the PI's document should be first) and uploaded as a single PDF as the designated attachment type.

Provide the following information separately for the PI and all other Key Personnel:

A. Current Support. List all current funding from intramural and extramural sources (e.g., institutional awards and grants from for-profit and not-for-profit agencies, including other grants from the ACS). Provide for each award:

a. Source of funds
b. Grant number
c. Project title
d. Inclusive dates of approved or proposed project. For example, in the case of NIH support, provide the dates of the approved or proposed competitive segment.
e. Total **direct** costs of the award
f. Role (e.g., PI, co-PI, co-I, etc.) and percent effort or person-months. For an active project, use person months, even if unsalaried for the current budget period. Classify person-months as academic, calendar, and/or summer.

g. An outline of the goals of the project in a brief paragraph. For clinical trials funding, note whether the support is a company-sponsored clinical trial or an investigator-initiated clinical trial.
h. A clear indication of overlap and differences between this grant and the proposed study. If necessary, include an explanatory letter in the Appendix.

B. Pending Support. List all pending applications for funding from intramural and extramural sources (e.g., institutional awards and grants from for-profit and not-for-profit agencies, including other grants from the ACS).

a. Source of funds
b. Project title
c. Inclusive dates of approved or proposed project. For example, in the case of NIH support, provide the dates of the approved or proposed competitive segment.
d. Total **direct** costs of the award
e. Role (e.g., PI, co-PI, co-I, etc.) and percent effort or person-months. Classify person-months as academic, calendar, and/or summer.
f. An outline of the goals of the project in a brief paragraph. For clinical trials funding, note whether the support is a company-sponsored clinical trial or an investigator-initiated clinical trial.
g. A clear indication of overlap and differences between this grant and the proposed study. If necessary, include an explanatory letter in the Appendix. In such cases, you may accept only one award if both are approved for funding. The ACS does not negotiate partial funding of grants with overlapping specific aims.

Please notify the Scientific Director if a pending extramural grant is funded during the peer review process since this could affect the feasibility of the PI's proposed effort (for cases of no scientific overlap) and possibly eligibility (for cases of scientific overlap).

C. Institutional Support. The following information should only be included on the Principal Investigator's Other Support document:

a. A description of any start-up funds provided by the institution to the applicant. If the applicant has received start-up funding from a source outside their institution, this should be included here as well, or appropriately marked as start-up funding in the current support section. A commitment of start-up funds does not decrease the likelihood of ACS support and can be important evidence of institutional commitment.
b. Details of the institutional commitment to support the applicant's salary.
c. The current term of the applicant's appointment.

The Statement of Institutional Support written by the Department Chair should align with the details provided by the PI in Section C of this template.

12. LIST OF LETTERS OF SUPPORT FROM COLLABORATORS/CONSULTANTS (PAGE 7.1)

Provide a list of collaborators, co-investigators, and consultants on the template and upload the letters of support provided by each. The letter should outline the role that person will play with sufficient detail for evaluation of the value of the individual contribution. Upload the template with "Not Applicable" in the body if there are no collaborators, co-investigators, etc. The list and the letters may be combined in a single PDF file and uploaded as the designated attachment type.

13. COMPLIANCE STATEMENTS (PAGES 8.1 – 8.2)

For applicants performing research that does not involve humans/exempt or involves vertebrate animals, check the box that most appropriately describes your research.

Human Subjects

Selection of study population. When conducting research on humans, provide the rationale for selecting your study population. Exclusions of any group based on age or other population characteristics must be scientifically justified. Specify the involvement of children, prisoners, and any vulnerable populations. The institution is required to ensure IRB approval is obtained for the grant to start, and the approval documentation is uploaded into ProposalCentral within 3 months of grant activation.

On the planned enrollment form, estimate the total number of subjects by primary ethnicity and race, race/ethnicity subgroup (if applicable), and gender. Include a rationale for excluding any population. Estimate the planned enrollment based on these calculations.

Also include estimates of the sample distribution by gender, race, and ethnicity (if available). For example, if your sample size is 200, to complete the *total number of subjects* column by race (based on what you know about the population demographics or the existing dataset you plan to analyze), multiply by the estimated percentage.

Estimated percentage of the population by race	Estimated total number of subjects
50% White	100 (200 x 0.50)
49% AA	98 (200 x 0.49)
1% Asian	2 (200 x 0.01)

Potential benefits, risks, and knowledge gained. Succinctly describe the potential benefits and risks to subjects (physical, psychological, financial, legal, or other). Explain why the risks are reasonable in relation to the anticipated benefits, both to research participants and others. Where appropriate, describe alternative treatments and procedures, including the risks and potential benefits to participants.

Research specimens and data. If the proposed research involves biospecimens, explain how the research material will be obtained from study participants and what materials will be collected. List any specific non-biological data, such as demographic information, and how it will be collected, managed, and protected. Specify who will have access to such data and what measures you will maintain to keep personally identifiable private information confidential.

Collaborating sites. Where appropriate, list any collaborating sites where research on human subjects will be performed and describe the role of those sites and collaborating investigators in performing the proposed research. Explain how data from the site(s) will be obtained, managed, and protected.

Note: See the Department of Health and Human Services Office of Research Protection Subparts B-D for additional protections for vulnerable populations.

http://www.hhs.gov/ohrp/policy/populations/index.html.

Vertebrate Animals

IACUC approval must be obtained before animal work begins. An IACUC approval letter must be uploaded to ProposalCentral immediately upon approval.

Provide your rationale for using live vertebrate animals including the:

1. Necessity for using the animals and species proposed;
2. Appropriateness of the strains, ages, genders of the animals to be used;

3. Justifications for, and appropriateness of, the numbers of animals proposed. When completing the Targeted Enrollment Table, select non-human subjects research and check the box that most appropriately describes your research.

Biohazards

Briefly describe whether any materials or procedures proposed are potentially hazardous to research personnel, equipment, and/or the environment. What protections will mitigate such risks? Include biological and chemical hazards, if applicable.

Authentication of Key Biological and/or Chemical Resources

Briefly describe methods to ensure the identity and validity of key biological and/or chemical resources to be used in the proposed studies. These resources may or may not be generated with ACS funds and:

- may differ from laboratory to laboratory or over time;
- may have qualities and/or qualifications that could influence the research data; and
- must be integral to the proposed research.

These may include, but are not limited to, cell lines, specialty chemicals, antibodies, and other biologics. Researchers should transparently report how they have authenticated key resources, so consensus can emerge.

Standard laboratory reagents that are not expected to vary do not need to be included in the plan (e.g., buffers and other common biologicals or chemicals). After reviewers assess the information you provide in this Section, their questions will need to be addressed prior to an award.

In this section, focus only on authentication and/or validation of key resources to be used in the study. Include all other information within the page limits of the research strategy. Applications that fail to comply may be dismissed.

Cancer Health Equity Research Statement (750-words)

As of January 2024, the Cancer Health Equity Research Statement of the compliance documents was removed.

14. STATEMENT OF INSTITUTIONAL SUPPORT (PAGE 9.1)

The Department Chair, or equivalent, should provide the following information for the Principal Investigator only:

- A description of any start-up funds provided by the institution to the applicant. If any start-up funds have been provided from an extramural source, this should be included here as well. An award of start-up funds does not decrease the likelihood of ACS support and can be important evidence of institutional commitment.
- Details of the institutional commitment to support the applicant's salary and research program.
- The current term of the applicant's appointment.

If the applicant is in the same department as a previous mentor, provide information on the relationship between the mentor's research space, and the space available for the project, and the relationship between funded research projects in the mentor's laboratory and the PI's research program.

15. APPENDIX TO APPLICATION

In addition to the application templates, other key documents may be uploaded and submitted as part of the application. However, applicants are urged to keep this section as brief as possible. Appended materials may include:

- Letter from ACS Eligibility Committee or Program Office confirming eligibility (if applicable)
- Recent reprints or preprints (optional)
- Clinical protocols (if applicable)
- Relevant study materials (e.g., study questionnaires, brochures, logic model)

RSG REVIEWER GUIDELINE CRITERIA

Reviewers provide feedback on the following criteria, focusing on the strengths and weaknesses of the proposal. These are meant as general guidelines and are provided here as an aid for preparing your application.

1. CANDIDATE

Provide an overall evaluation of the candidate's academic, clinical, and/or scientific qualifications, their potential to succeed as an independent investigator, and their commitment to a career in cancer-related research. Assess the qualifications of the applicant considering the following items: goals and commitment to cancer-related research; past education; past training (board-eligible or board-certified), if appropriate; past research experience; number and impact of previous publications; and overall appropriateness of the candidate for an RSG.

The RSG award is intended for fully independent scientists with clear evidence of institutional commitment (examples of independence may include tenure track appointment, start-up funds, independent space, and senior author publications) as confirmed in the Letter of Institutional Support from their Department Chair.

2. REPLY TO PREVIOUS REVIEWS [IF APPLICABLE]

Note whether this is a resubmission and comment on the adequacy of the response to critiques.

3. RESEARCH PLAN

Provide a brief overview of the project. In the following sections, focus on the strengths and weaknesses of each component, rather than summarizing.

4. RESEARCH PLAN – SIGNIFICANCE AND CANCER RELEVANCE

Does the project address an important problem or a critical barrier to progress in the field? If the aims of the project are achieved, how will scientific knowledge, technical capability, and/or clinical practice improve? How will successful completion of the aims change the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field? How is this research relevant or how will it impact persons at risk for, or living with, cancer or their family/caregivers? If appropriate, describe how the project contributes to promoting cancer health equity? The relevance to cancer may be indirect, but the connection must be clearly articulated by the applicant.

5. RESEARCH PLAN – INNOVATION/IMPROVEMENT

What is the potential that the proposed study will challenge and seek to shift current research understanding or clinical practice paradigms by utilizing novel theoretical concepts, approaches or methodologies, instrumentation, or interventions? Does the research propose meaningful improvements or address critical gaps?

6. RESEARCH PLAN – INVESTIGATOR/RESEARCH TEAM

Does the PI and research team have the training and experience needed to carry out the proposed research? Do team members have complementary skills and a feasible plan for collaboration, where applicable?

7. RESEARCH PLAN – APPROACH

Are the study design, methods for implementation, data collection and analysis appropriate for answering the research question? Where appropriate, are proposed recruitment and/or case ascertainment methods well developed? Is the sample size adequate? Is the research timeline realistic? Are potential pitfalls, alternative approaches, and future plans articulated?

8. RESEARCH PLAN – ENVIRONMENT AND RESOURCES

Will the scientific environment and institutional support contribute to the probability of success? Will the project benefit from unique features of the scientific environment, populations studied, or collaborative arrangements? Are there competitive start-up funds to support the candidate's independent research program?

9. BUDGET

NOT TO BE CONSIDERED IN SCORING

Evaluate the overall budget and individual budget categories with respect to the award cap and the project aims. Are the budget items justified, specified, and accurate? Is the percent effort of key personnel appropriate? Is there a potential overlap with the PI's other funded research? If the budget includes a request for funds to be expended outside the United States or its territories, include an explanation of why such costs are essential for the successful conduct of the project, and why there are no alternatives. Describe any suggested budget changes using specific amounts or percentages.

It is the policy of the American Cancer Society not to fund projects that are supported all or in part by another agency.

10. COMPLIANCE STATEMENTS

NOT TO BE CONSIDERED IN SCORING

- **Human Subjects:** If applicable, evaluate the plans for protection of human subjects from research risks justified in terms of the scientific goals and research strategy proposed. For example, are the potential benefits and risks to subjects articulated reasonable and appropriate given the study design? Are the plans for conducting sub-analysis by group, data security and confidentiality, biohazards and data and safety monitoring adequate?
- **Inclusion of Women, Minorities, and Children:** When the proposed project involves human subjects, evaluate the adequacy of the proposed plans for inclusion or exclusion of minorities, male and female genders, as well as children.
- **Vertebrate Animals:** Evaluate the plan for live, vertebrate animals as part of the scientific assessment according to the following points: 1) necessity for the use of the animals and species proposed; 2) appropriateness of the strains, ages, and gender; 3) justifications for, and appropriateness of, the numbers of animals.
- **Hazards:** Assess whether materials or procedures proposed are potentially hazardous to research personnel and/or the environment, and if needed, determine whether adequate protection is proposed.

INSTITUTIONAL RESEARCH GRANT
INSTRUCTIONS

Applicants are *encouraged* to review the eligibility requirements in the grant policies to ensure they are eligible prior to applying. Applications may be withdrawn if an applicant or institution do not meet the eligibility criteria.

1. COVER PAGES

Complete the fields and required components in the ProposalCentral portal as described above (Section I). The principal investigator is required to e-sign the application. We provide space for e-signatures for the departmental chair (or equivalent) and institutional officials to accommodate institution-specific requirements for proposal submissions, but neither are required for submission to ACS. Note: the PI must enable other users' access to the application on ProposalCentral to permit their e-signatures.

If you have received an eligibility extension or exception from the ACS Eligibility Committee or the Program Office, indicate that in the Program Eligibility information section and upload the correspondence in the Appendix.

2. APPLICATION TEMPLATES

An application includes several sections that must be uploaded before the online application is submitted. Templates for these sections are available once an application is started on ProposalCentral. Detailed below are the instructions for completing the individual sections. *Convert the sections into .pdf documents before uploading. Please see ProposalCentral's FAQ or call support at 1-800-875-2562 if you need assistance.*

I. INSTRUCTIONS FOR NEW AND RESUBMITTED IRG APPLICATIONS

1. TABLE OF CONTENTS (PAGE 1.1)

The Table of Contents is pre-numbered, corresponding to the page numbers for the first page of each application section. List any appendices in order of appearance; appendices do not need to have page numbers.

2. REPLY TO PREVIOUS REVIEW (PAGE 2.1)

IF THE APPLICATION IS A NEW SUBMISSION, upload the provided template with "Not Applicable" in the body.

IF THE APPLICATION IS A RESUBMISSION, complete this section to clearly and briefly address the points raised in the previous reviews and direct the reader to the specific sections where text revisions have been made. Do not exceed 3 pages. Text changed in response to reviewers' comments should be identifiable in the revised application (e.g., bold type, line in the margin, underlining, etc.).

Upload a copy of the previous critiques via the designated attachment type in ProposalCentral. To locate the previous critiques in ProposalCentral, go to the "Submitted" page, select "View Review Info," click "Print" to save it as a .pdf.

3. CANCER PROGRAM DESCRIPTION AND ADDED VALUE OF PROPOSED IRG PROGRAM (PAGE 3.1)

This section is limited to **4 pages or less** and should not duplicate information provided elsewhere in the application. It should provide an overview of the academic environment for the proposed IRG program, including:

- The nature of the institution, e.g., university, academic health center, cancer center, freestanding research facility, etc. The principal investigator should also use this section to describe unique aspects of the institution, such as service to special populations, location, or any special resources.

  If a consortium program is proposed, describe the arrangement with the other institution(s), including information about:
  - Relationship between the institutions;
  - Status of cancer research at the other site(s);
  - Expected growth in the IRG applicant pool;
  - Inclusion of faculty from all institutions on the IRG review committee; and
  - Opportunities for all early-stage investigators to access mentoring resources.

  For a consortium program, a memorandum of agreement or similar document should be included in the application Appendix.

- Provide an overview of the cancer research program and other relevant cancer-related activities, including a brief description of the catchment area (if applicable), the scope of research, research infrastructure, other significant cancer research support or funding, special initiatives and plans for investment or growth. The importance of this grant to the success of the cancer program at the institution, especially how the IRG will be used to leverage other resources to support cancer research and early-career investigators and how existing infrastructure and resources will be leveraged to support the IRG program. If this application is a renewal of an IRG that is no longer in effect, please address funding lapses of more than one year.

4. INSTITUTIONAL RESEARCH GRANT PROGRAM PLAN (PAGE 4.1)

This section is limited to **3 pages or less**, not including the description of the IRG Pilot Grant Review Committee composition.

A. Composition of the IRG Pilot Grant Review Committee

The principal investigator of the IRG grant will chair this committee. Describe the qualifications of the principal investigator to lead the IRG program and review committee, including faculty rank, research interests and accomplishments, mentoring experience, grant funding history, publication history, and administrative experience.

The IRG Pilot Grant Review Committee should be composed of representatives from all relevant health science schools and colleges of the institution. Summarize the committee composition, using the table below as an example, although the categories and departments will vary based on the composition of the applicant's program.

Using the table provided, list the names, titles, departments, schools, and cancer research interests of the members of the IRG Pilot Grant Review Committee.

	Basic Research	Clinical Research	Cancer Control and Population Sciences	Total
Professor	5	2	2	9
Associate Professor	2	2	3	7
Assistant Professor	2	3	1	6
Other			1	1
Total	9	7	7	23
Percentage	40%	30%	30%	100%

There is an expectation that at least one American Cancer Society team member will serve on the Committee; please include the names and titles/affiliations of the ACS representative(s). Please include a description of the process for selecting new members, length of term, etc.

As of September 2025, biosketches for IRG Pilot Grant Review Committee members are not required other than for the IRG PI who serves as chair of the committee.

B. Dissemination of the IRG Pilot Grant Request for Applications

Explain how all qualified and eligible individuals are to be informed of this funding opportunity (e.g., institutional newsletters, memoranda, notices) and will submit their applications.

C. Review of IRG Pilot Grant Applications and Awarding of Pilot Grants

Provide a description of the IRG pilot grant application review process, including the frequency and timing of meetings, the application assignment, review and ranking process, how funding decisions are made, and if relevant, the procedure for competitively renewing grants for a second year). If the IRG review committee relates in some way to another intramural grant review body, explain how the IRG application review and the allocation of IRG funding are handled separately. Describe how critiques are provided to applicants, as well as how awardees are made aware that their support comes from the American Cancer Society. Programs are encouraged to provide written feedback to all applicants and to include unsuccessful applicants in any mentoring activities that are offered to IRG pilot project grant recipients.

D. Pilot Grantee Announcement and Other Activities

Describe how pilot grantees selected for funding will be announced internally and externally. Also describe other activities related to the IRG program, including forums for grantees to present the results of IRG-funded projects, IRG symposia, etc., and whether this includes engagement with ACS staff.

5. EARLY-STAGE INVESTIGATOR POOL & CAREER DEVELOPMENT ACTIVITES (PAGE 5.1)

There is no page limit for this section, but applicants are encouraged to be as concise as possible.

The IRG Program aims to support the development of promising early-career investigators and support institutional efforts to provide pilot funding for these cancer researchers to develop projects and secure preliminary data to successfully complete for larger, national awards.

Describe the institution's pool of early-stage investigators committed to cancer research. Specifically, describe the number of new faculty annually recruited to the institution in the last 5 years, the proportion of these that are early-stage independent researchers interested in cancer, and the success rate of early-career faculty in obtaining national peer-reviewed funding in cancer research. Also describe the type of research being conducted by the investigators in the applicant pool, including specific research strengths, initiatives and examples of project areas. Investigators to be included are at the discretion of the applicant. They can be from an entire institution, cancer center, medical school, department, etc. as long as they meet IRG pilot grant eligibility, are doing cancer-related research, and would be considered part of the IRG program's pilot grant applicant pool. Consideration should also be given to ensure that the pool is large enough to provide meritorious IRG pilot grant applications and a competitive peer review process.

Describe the institution's ongoing or new activities to support and promote the career development of early-career faculty supported by the IRG program. Note if these activities are supported by institutional, cancer center or departmental resources or they will be created specifically to support the IRG program (i.e., there is not an expectation to duplicate existing efforts). Examples of these activities include but are not limited to:

- Mentoring and advisement by senior faculty with established cancer research careers;

- Guidance on publishing scientific results in peer-reviewed papers;
- Seminars or workshops on grant writing and research funding, teaching, mentoring, publishing, personnel/lab/office management;
- Review and critiques of draft applications for national peer-reviewed research grants;
- Leadership programs;
- Guidance on developing collaborative research relationships and team science; and
- Advice on balancing one's academic career and personal life.

6. INSTITUTIONAL COMMITMENT AND PROGRAM SUSTAINABILITY PLAN (PAGE 6.1)

This section is limited to **3 pages or less**. Describe the commitment of the institution to the proposed IRG program and early-stage investigator career and research program development. This may include supplemental funds for pilot grants (a requirement for renewal applications, encouraged for new applications), other pilot grant funding mechanisms for early-stage faculty, investment in research resources (e.g., shared research facilities, patient cohorts or datasets, special equipment or initiatives, etc.), and other relevant activities to support faculty success. Include future plans for programmatic growth in specific research areas, if relevant.

Additionally, describe plans to sustain the IRG program at the institution even in the event of reduced support from the American Cancer Society in the future. Provide details about program oversight and management, potential funding sources, scope, and expected outcomes.

7. INSTITUTIONAL AND PILOT GRANTEE ENGAGEMENT WITH ACS (PAGE 7.1)

This section is limited to **3 pages or less**. Describe any interactions among the local and national ACS and ACS Cancer Action Network (ACS CAN), with the institution, *especially the IRG pilot project grantees*. These interactions may include serving as speakers or subject matter experts, sharing ACS-funded research findings with ACS team members, volunteers and the general public, serving on scientific Peer Review Committees, participating in community or distinguished events, advocating at the state, local and federal levels for cancer policies and cancer research funding. Institutions are encouraged to include one or two local or regional ACS representatives as members of the IRG Peer Review Committee and invite team members from the Extramural Discovery Science Program Office overseeing the IRG Program to participate in at least one institutional IRG Committee meeting and/or IRG symposium over the course of the funding period IRG PIs are also expected to attend any planned virtual or in-person retreats with other grantees and the CGRE Program Office team.

For new applications, the principal investigator and the institution should work together with the appropriate local or regional ACS staff to formulate an interaction plan if none exists. Contact the Program Office for assistance if needed. A letter of support from the regional team members may be included in the Appendix.

8. JUSTIFICATION FOR FUNDS REQUESTED (PAGE 8.1)

There is no page limit for this section, but applicants are encouraged to be as concise as possible.

Updates for 2025 new IRG applications: The funding term has increased from 3 years to 4 years. Applicants may request up to $120,000 per year for **four years**. The funds may be distributed at the discretion of the IRG review committee with respect to the number of pilot grants awarded (minimum of two, maximum of six per year) and amount for each award (minimum of $10,000, maximum of $60,000 per award). Generally, describe the institution's approach to allocating funds to investigators, relative to the applicant pool described above.

Institutions may supplement the pilot grants at their discretion. If supplemental funds are to be provided by the institution, please explain their nature and amount.

Other Support: All applications must justify the need for funding to permit early-stage faculty to initiate promising pilot projects in cancer research. State other sources and amounts of pilot project funding available (local, institutional, Cancer Center Core Grant, etc.).

Indirect Costs: Indirect costs are not allowed on IRG.

9. BIOGRAPHICAL INFORMATION FOR THE PRINCIPAL INVESTIGATOR (PAGE 9.1)

Complete the NIH Biosketch template for the IRG Principal Investigator following the formats and instructions provided by the NIH. The Biographical Sketch **may not exceed 5 pages**.

Note: If the NIH has modified the NIH Biosketch, applicants may use the newly modified template, or the template provided in ProposalCentral.

10. APPLICATION APPENDIX

In addition to the application templates, other key documents, such as consortium documentation such as a Memorandum of Understanding (MOU) or letters of support, may be uploaded and submitted as part of the application; however, applicants are urged to keep this section as brief as possible.

It is not necessary to number the pages of the Appendix but list the items in the Table of Contents.

II. INSTRUCTIONS FOR IRG RENEWAL AND RENEWAL RESUBMISSION APPLICATIONS

2025 Update: All renewal applications must now be submitted through an IRG Renewal-specific mechanism in ProposalCentral.

1. TABLE OF CONTENTS (PAGE 1.1)

The Table of Contents is pre-numbered, corresponding to the page numbers for the first page of each application section. All pages of the application should be numbered sequentially.

2. REPLY TO PREVIOUS REVIEW (PAGE 2.1)

IF THE APPLICATION IS A NEW RENEWAL SUBMISSION, upload the provided template with "Not Applicable" in the body.

IF THE RENEWAL APPLICATION IS A RESUBMISSION (i.e., the previous renewal application was not funded), complete this section to clearly and briefly address the points raised in the previous reviews and direct the reader to the specific sections where text revisions have been made. Do not exceed 3 pages. Text changed in response to reviewers' comments should be identifiable in the revised application (e.g., bold type, line in the margin, underlining, etc.).

3. CANCER PROGRAM DESCRIPTION & ADDED VALUE OF PROPOSED IRG (PAGE 3.1)

This section is limited to **4 pages or less** and should not duplicate information provided elsewhere in the application. It should provide an overview of the academic environment for the proposed IRG program, including:

- The nature of the institution, e.g., university, academic health center, freestanding research facility, etc. The principal investigator should also use this section to describe unique aspects of the institution, such as service to special populations, location, or any special resources.

  If a consortium program is proposed, describe the arrangement with the other institution(s), including information about:

  - Relationship between the institutions;
  - Status of cancer research at the other site(s);
  - Expected growth in the IRG applicant pool;
  - Inclusion of faculty from all institutions on the IRG review committee; and
  - Opportunities for all early-stage investigators to access mentoring resources.

For a consortium program, a memorandum of agreement or similar document may also be included in the application Appendix.

- Provide an overview of the cancer research program and other relevant cancer-related activities, including a brief description of the catchment area (if applicable), the scope of research, research infrastructure, other significant cancer research support or funding, special initiatives and plans for investment or growth. The importance of this grant to the success of the cancer program at the institution, especially how the IRG will be used to leverage other resources to support cancer research and early-career investigators and how existing infrastructure and resources will be leveraged to support the IRG program. If this application is a renewal of an IRG that is no longer in effect, please address funding lapses of more than one year.

- Renewal applications should also highlight any outstanding accomplishments by the individual awardees, both present and past.

4. INSTITUTIONAL RESEARCH GRANT PROGRAM PLAN (PAGE 4.1)

Note: For this section in renewal applications, provide only a summary for each component and highlight any changes being proposed as well as the rationale for the changes.

This section is limited to **3 pages or less**, not including the description of the IRG Pilot Grant Review Committee composition.

A. Composition of the IRG Pilot Grant Review Committee

The principal investigator of the IRG grant will chair this committee. Describe the qualifications of the principal investigator to lead the IRG program and review committee, including faculty rank, research interests and accomplishments, mentoring experience, grant funding history, publication history, and administrative experience.

If a change in the chair of the local IRG review committee/IRG principal investigator has occurred or is being proposed, please explain the reason for the change.

The institutional IRG Review Committee should be composed of representatives from all relevant health science schools and colleges of the institution. Summarize the committee composition, using the table below as an example, although the categories and departments will vary based on the composition of the applicant's program. <u>As of September 2025, biosketches for IRG Pilot Grant Review Committee members are not required other than for the IRG PI who serves as chair of the committ</u>ee.

Using the table provided, list the names, titles, departments, schools, and cancer research interests of the members of the institutional IRG Review Committee. There is an expectation that at least one American Cancer Society team member will serve on the Committee; please include the names and titles/affiliations of the ACS representatives. Please include a description of the process for selecting new members, length of term, etc.

	Basic Research	Clinical Research	Cancer Control and Population Sciences	Total
Professor	5	2	2	9
Associate Professor	2	2	3	7
Assistant Professor	2	3	1	6
Other			1	1
Total	9	7	7	23
Percentage	40%	30%	30%	100%

B. Dissemination of the IRG Pilot Grant Request for Applications

Explain how all qualified and eligible individuals are to be informed of this funding opportunity (e.g., university newsletters, memoranda, notices) and will submit their applications.

C. Review of IRG Pilot Grant Applications and Awarding of Pilot Grants

Provide a description of the IRG pilot grant application review process, including the frequency and timing of meetings, the application assignment, review and ranking process, how funding decisions are made, and if relevant, the procedure for competitively renewing grants for a second year). If the IRG review committee relates in some way to another intramural grant review body, explain how the IRG application review and the allocation of IRG funding are handled separately. Describe how critiques are provided to applicants, as well as how awardees are made aware that their support comes from the American Cancer Society. Programs are encouraged to provide written feedback to all applicants and to include unsuccessful applicants in any mentoring activities that are offered to IRG pilot project grant recipients.

D. Pilot Grantee Announcement and Other Activities

Describe how pilot grantees selected for funding will be announced internally and externally. Also describe other activities related to the IRG program, including forums for grantees to present the results of IRG-funded projects, IRG symposia, etc., and whether this includes engagement with ACS staff.

5. EARLY-STAGE INVESTIGATOR POOL & CAREER DEVELOPMENT ACTIVITIES (PAGE 5.1)

There is no page limit for this section, but applicants are encouraged to be as concise as possible. The IRG Program aims to support the development of promising early-career investigators and support institutional efforts to provide pilot funding for these cancer researchers to develop projects and secure preliminary data to successfully complete for larger, national awards.

Describe the institution's pool of early-stage investigators committed to cancer research. Specifically, describe the number of new faculty annually recruited to the institution in the last 5 years, the proportion of these that are early-stage independent researchers interested in cancer, and the success rate of early-career faculty in obtaining national peer-reviewed funding in cancer research. Also describe the type of research being conducted by the investigators in the applicant pool, including specific research strengths, initiatives and examples of project areas. Investigators to be included are at the discretion of the applicant. They can be from an entire institution, cancer center, medical school, department, etc. as long as they meet IRG pilot grant eligibility, are doing cancer-related research, and would be considered part of the IRG program's pilot grant applicant pool. Consideration should also be given to ensure that the pool is large enough to provide meritorious IRG pilot grant applications and a competitive peer review process.

Describe the institution's ongoing or new activities to support and promote the career development of early-career faculty supported by the IRG program. Note if these activities are supported by institutional, cancer center or departmental resources or they will be created specifically to support the IRG program (i.e., there is not an expectation to duplicate existing efforts).

Examples of these activities include but are not limited to:

- Mentoring and advisement by senior faculty with established cancer research careers;
- Guidance on publishing scientific results in peer-reviewed papers;
- Seminars or workshops on grant writing and research funding, teaching, mentoring, publishing, personnel/lab/office management;
- Review and critiques of draft applications for national peer-reviewed research grants;
- Leadership programs;
- Guidance on developing collaborative research relationships and team science; and

- Advice on balancing one's academic career and personal life.

6. INSTITUTIONAL COMMITMENT & PROGRAM SUSTAINABILITY PLAN (PAGE 6.1)

This section is limited to **3 pages or less**. Describe the commitment of the institution to the proposed IRG program and early-stage investigator career and research program development. This may include supplemental funds for pilot grants (a requirement for renewal applications, encouraged for new applications), other pilot grant funding mechanisms for early-stage faculty, investment in research resources (e.g., shared research facilities, patient cohorts or datasets, special equipment or initiatives, etc.), and other relevant activities to support faculty success. Include future plans for programmatic growth in specific research areas if relevant.

Additionally describe plans to sustain the IRG program at the institution even in the event of reduced support from the American Cancer Society in the future. Provide details about program oversight and management, potential funding sources, scope, and expected outcomes.

7. INSTITUTIONAL AND PILOT GRANTEE ENGAGEMENT WITH ACS (PAGE 7.1)

This section is limited to **3 pages or less**. Describe any interactions among the local and national ACS and ACS Cancer Action Network (ACS CAN), with the institution, especially the IRG pilot project grantees. These interactions may include serving as speakers or subject matter experts, sharing ACS-funded research findings with ACS team members, volunteers and the general public, serving on scientific Peer Review Committees, participating in community or distinguished events, advocating at the state, local and federal levels for cancer policies and cancer research funding. Institutions are encouraged to include one or two local or regional ACS representatives as members of the IRG Pilot Review Committee and invite team members from the Extramural Discovery Science Program Office overseeing the IRG Program to participate in at least one institutional IRG Committee meeting and/or IRG symposium over the course of the funding period IRG PIs are also expected to attend any planned virtual or in-person retreats with other grantees and the CGRE Program Office team.

Contact the Program Office for assistance if needed. A letter of support from the ACS team members may be included in the Appendix.

8. JUSTIFICATION FOR FUNDS REQUESTED (PAGE 8.1)

There is no page limit for this section, but applicants are encouraged to be as concise as possible.

All applications must describe the need for funding to permit early-career faculty to initiate promising pilot projects in cancer research.

Effective with 2025 renewal IRG applications, the IRG award term has increased from 3 years to 4 years, and the IRG institution must supplement the funding of the IRG award. ACS will commit $100,000 per year for 4 years, and the IRG institution is expected to supplement a minimum of $80,000. The funds may be distributed at the discretion of the IRG review committee with respect to the number of pilot grants awarded (minimum of two, maximum of six per year) and amount for each award (minimum of $10,000, maximum of $60,000 per award). Generally, describe the institution's approach to allocating funds to investigators, relative to the applicant pool described above.

Provide details regarding the institution's plan to support the required minimum supplement. An institution may contribute funds beyond the required supplement, and the source of the funding is at the discretion of the institution (e.g., other grants, philanthropy, etc.)

Other Support: State other sources and amounts of pilot project funding available (local, institutional, Cancer Center Core Grant, etc.).

Indirect Costs: Indirect costs are not allowed.

9. BIOGRAPHICAL INFORMATION OF IRG PRINCIPAL INVESTIGATOR (PAGE 9.1)

Complete the NIH Biosketch template for the IRG Principal Investigator following the formats and instructions provided by the NIH. The Biographical Sketch **may not exceed 5 pages**.

Note: If the NIH has modified the NIH Biosketch, applicants may use the newly modified template, or the template provided in ProposalCentral.

10. SUMMARY OF PILOT GRANTS AND GRANTEE ACCOMPLISHMENTS (PAGES 10.1 – 12.1)

Using the templates for Tables I and II, please provide the requested information for the past **seven** award years, or for the number of years in effect for grants of less duration. *Tables must be accurate, internally consistent, and responsive to instructions.* Where term dates are requested, these should reflect the start and end dates of the pilot grants.

Note: Supplemental materials will be accepted after the June 1 deadline through July 15. However, these items must be limited to updated information about past awardees, i.e., additional grants received, articles published, or information about the recent activities of the institution's IRG Review Committee.

TABLE I. PILOT GRANTS SUBMITTED AND FUNDED (PAGE 10.1)

Starting with the most recently completed grant year (January – December) and working backward, please provide a summary of pilot grant applications submitted and awarded to individuals for the last **seven** years. For first-time renewals, the number of years will be fewer. Provide the academic title of the investigator at the time of the award, and also the current title and institution, if different from the awarding institution.

The award amount should reflect any supplemental funds provided by the institution. However, do not include pilot projects that were funded in their entirety by other funds provided by the institution. If an application with a better score than a funded application is unfunded in any cycle, explain the reason in a footnote to the table.

TABLE II. SUMMARY OF PILOT GRANT FUNDING RATES (PAGE 11.1)

Starting with the most recent year and working backward, please tabulate the percentage of applications funded for the past **seven** years.

TABLE III. PILOT GRANTEE ACCOMPLISHMENTS (PAGE 12.1)

For all of the funded awardees listed in TABLE I (except those currently receiving funding), provide subsequently funded national-level grants in which the pilot grantee serves as PI, Co-I or multi-PI; peer-reviewed papers published or in-press (first- senior or corresponding author only); and other significant accomplishments (e.g., national awards and presentations, patents, significant community outreach efforts, leadership roles, etc.). Designate accomplishments based on pilot grant-funded work with an asterisk.

Please note: publications based on work supported by the IRG pilot project award MUST INCLUDE acknowledgement of ACS funding in order to be marked as such.

11. SELECT CURRENT PILOT GRANT APPLICATIONS (PAGE 13.1) *(up to 5 pages each)*

Please include up to three applications for pilot grants for all current (year) awardees. Applications should include sufficient information to understand the scope of work proposed and include a Biographical Information Page(s).

Note: This template can be used for the IRG Pilot Project applications.

12. SELECT INDIVIDUAL IRG PROGRESS REPORTS (PAGE 14.1) (*2 to 3 pages each*)

Provide progress reports for up to three pilot grants supported by allocations from the IRG that were completed during the previous funding cycle. Pilot project grantees should be instructed to summarize the work accomplished under the grant and the results achieved [one-page limit]. Include publications and any national grants obtained as a result of IRG funding.

List the names of all authors, title, journal, and page number for all relevant publications, but do not include manuscripts in preparation. Attach a copy of the publication cover page, including the abstract and acknowledgement of ACS funding for each relevant publication. Information about national grants should include the principal investigator's role, project title, awarding agency, amount of support (direct costs), and the term of the award.

Note: These reports should be updated each year following the IRG pilot project award period, and the revision date noted in the report. The principal investigator should collect reports and monitor progress from the last seven years of IRG funding but only select reports from pilot grants completed in the previous funding cycle need to be included in the application.

13. APPLICATION APPENDIX

In addition to the application templates, other key documents, such as consortium documentation such as a Memorandum of Understanding (MOU) or letters of support, may be uploaded and submitted as part of the application; however, applicants are urged to keep this section as brief as possible.

It is not necessary to number the pages of the Appendix but list the items in the Table of Contents.

SAMPLE OF IRG GENERAL AUDIENCE SUMMARY

The American Cancer Society Institutional Research Grant (ACS IRG) is an essential component used by the University to recruit new faculty into cancer research and promote nurturing ideas of junior faculty already involved in cancer research. Over the years, the ACS IRG has successfully fostered cancer interests among young investigators, providing them with a mechanism by which they can obtain small grants for testing their ideas, and positioning them to successfully compete for extramural peer-reviewed research grants.

The leadership of the University, and especially the Comprehensive Cancer Center, understands that new ideas, many of which come from new researchers in their first faculty positions, can have a substantial impact on the advancement of biomedical research. The institution has added a substantial number of junior faculty over the past decade in diverse disciplines that range from basic molecular biology to psychosocial sciences. This has enlarged the pool of eligible applicants for ACS IRG funding.

In addition, the institutional IRG program has placed increasing emphasis on the identification of potential applicants, which has resulted in a substantial increase in the number of applications. Consequently, the institution's IRG review committee has expanded and diversified.

The present renewal application also includes a new mentoring plan to assure that awardees are properly advised once an award is made and receive training that will help them to secure peer-reviewed funding. Recognizing the importance and prestige of the American Cancer Society Institutional Research Grant for young investigators and to help attract the best young scientists, the University and Cancer Center have committed $15,000 in matching funds for each ACS IRG pilot project award, bringing the $40,000 award to $55,000 per investigator.

The ACS IRG also plays an important role in fostering the extensive interaction between the University and the American Cancer Society. Over the years, this relationship has been mutually beneficial to both organizations, but more importantly to the area's cancer patients and their families.

CRITERIA FOR THE REVIEW OF APPLICATIONS

The following items are used by reviewers in evaluating applications for IRGs. These are meant as general guidelines and are provided here as an aid for preparing your application

1. REPLY TO PREVIOUS REVIEW

Resubmitted applications must include the critiques of the previous application, and document progress made toward addressing the points made by the reviewers. For resubmitted applications, detail the candidate's responsiveness to previous critiques, focusing on the strengths and weaknesses of their reply.

2. DESCRIPTION OF CANCER PROGRAM

Provide an overview of the academic environment, and the potential applicant pool size. Describe unique aspects of the institution or any strategic efforts underway to expand cancer-related activities, especially research, which could impact faculty recruitment. How will faculty be recruited? Detail the expertise of the research program(s), and availability of early career investigators who can apply for funding. Is there consideration for diversity in the cancer research as well as diversity in the applicant pool of Investigators? How will the IRG be used to leverage resources to support the institution's early-stage cancer researchers? If this application is a renewal of an IRG that is no longer in effect, and for which funding has lapsed for more than one year, an explanation should be provided. Additionally, for renewal applications, evaluate the accomplishments of the IRG.

3. IRG PROGRAM PLAN

Pilot Grant Review Committee: Evaluate the composition of the review panel. Is the Committee chair PI well-qualified to lead the panel? What are the panel members' areas of expertise, and is there broad representation across all schools and departments from which applications are expected? Will ACS representatives be participating in the committee?

Dissemination of Pilot Grant Request for Applications: How will IRG funding be advertised and how frequently? Do all departments and schools know about the grant? Are the numbers of applicants commensurate with the pool size?

Pilot Grant Review and Awarding: The committee's sole charge should be to review the ACS IRG applications, and not any applications funded from other sources. Is the committee's meeting frequency appropriate? Does the committee have an appropriate plan to avoid conflicts of interest? Is there appropriate rotation after several years of service? How are applications ranked? Is there feedback to the applicants?

4. EARLY-STAGE INVESTIGATOR POOL AND CAREER DEVELOPMENT ACTIVITIES

How many junior investigators interested in cancer research are presently at the institution, and how many are expected to be recruited over the next few years? Is this pool sufficient? Describe and evaluate the mentoring and career development activities proposed. What formal mechanisms will be used to foster early career investigators? How will the success of these activities be evaluated? Are the proposed activities relevant and appropriate for cancer research career development?

5. INSTITUTIONAL COMMITMENT AND PROGRAM SUSTAINABILITY PLAN

Evaluate the institution's commitment to the IRG program and the growth and development of the early-career investigator's research programs. What additional resources will the institution commit to support the success of their faculty? Is there an institutional plan in place to sustain the IRG program long-term?

6. ENGAGEMENT WITH ACS

How will IRG pilot project grantees engage with the local and national ACS and ACS Cancer Action Network (ACS CAN)? What activities are planned, and how are these activities advertised,

supported, and prioritized? Is there evidence of interaction between the institution, including IRG pilot project grantees, and the local ACS Region office or with ACS CAN. In some areas of the country, this is the only ACS grant there is, and special consideration should be given for these interactions.

7. JUSTIFICATION OF FUNDS REQUESTED

What other cancer research support is available at the institution? Is the projected or actual applicant pool size sufficient to justify the funds requested? If this is a renewal application, how does the number of applications align with the reported pool size? Is the amount requested adequate to fund all the outstanding applications? Conversely, are non-meritorious applications being funded? There should be detailed information about any funds provided by the institution to supplement the pilot project awards or the overall grant. For renewal applications, has the IRG provided a plan to support the required minimum supplement?

8. PILOT GRANTS SUBMITTED AND FUNDED – TABLES I AND II *(renewal applications only)*

How many applications are received, approved, and funded? What is the funding rate? What is the range of priority scores? Are the grantees made aware that this money comes from the ACS rather than the institution? Are pilot project grants distributed broadly across the institution, or concentrated in one school or center?

9. PILOT GRANTEE ACCOMPLISHMENTS – TABLE III AND INDIVIDUAL PROGRESS REPORTS *(renewal applications only)*

Consider the overall productivity of the researcher supported by IRG funds, including all publications and grants not just those resulting from IRG pilot projects. Tracking of publications and awards should go back for seven years (excluding the current year) or the length of the award, if less. How many articles were published that are relevant to IRG funding? How many extramural awards have been obtained by IRG grantees? The cancer relevance of the research supported by individual allocations is also a factor in the evaluation of renewal requests for continued support.

DISCOVERY BOOST GRANT
INSTRUCTIONS

Applicants are *encouraged* to review the eligibility requirements in the grant policies to ensure they are eligible prior to applying. Applications may be withdrawn if an applicant or institution do not meet the eligibility criteria.

PREPARING THE APPLICATION

1. COVER PAGES

Complete all fields and required components in the ProposalCentral portal as described above (Section I: Subsections 5-15). The principal investigator is required to e-sign the application. We provide text boxes for e-signatures for the departmental chair (or equivalent) and institutional officials to accommodate institution-specific requirements for proposal submissions, but neither is required for submission to ACS. Note: the PI must enable other users' access to the application on ProposalCentral to permit their e-signatures.

If you have received a letter from the ACS Eligibility Committee or your Program Office granting an exemption, indicate that in the Program Eligibility information section and upload the correspondence in the Appendix.

Requests for Applications (RFAs)**:** If you are responding to an RFA, select "yes" and then select the appropriate RFA from the list on the title page; active RFAs are listed below. **You are not required to submit the DBG application to an RFA**; select "no" and "N/A" if you are submitting a ***standard*** DBG application.

- Arizona Discovery Boost Grant: If the applicant's institution is in Arizona, this RFA may be selected. Include "AZ:" at the beginning of the application title.
- ACS-Fanconi Cancer Foundation Discovery Boost Grant: Applicants submitting to this RFA should include "Fanconi:" at the beginning of the application title.

2. APPLICATION TEMPLATES

Once an application is started on ProposalCentral, all necessary application templates are available to download. Complete off-line (described in individual sections below) and upload as .pdf documents before submitting the online application. *For assistance, see ProposalCentral's FAQ or call support at 1-800-875-2562.*

3. TABLE OF CONTENTS (PAGE 1.1)

The Table of Contents is pre-numbered, corresponding to the page numbers for the first page of each application section. Complete the Table of Contents by indicating the appropriate page numbers for the Research Plan section; the Table of Contents should not exceed 2 pages.

Itemize appendices in order of appearance at the bottom of the Table of Contents template; appendices do not need to have page numbers.

4. BIOGRAPHICAL SKETCH OF APPLICANT (PAGE 2.1)

Complete the NIH Biosketch template following the formats and instructions provided by the NIH. The Biographical Sketch **may not exceed 5 pages**.

Note: If the NIH has modified the NIH Biosketch, applicants may use the newly modified template, or the template provided in ProposalCentral**.**

5. REPLY TO PREVIOUS REVIEWS (PAGE 3.1)

IF APPLICATION IS A NEW SUBMISSION, upload the provided template with "Not Applicable" in the body.

All resubmissions must create a new application on ProposalCentral. Note: Only one resubmission is allowed for Discovery Boost Grant applications.

For resubmissions, address the points raised in the previous critiques and direct the reviewer to the specific sections of the text where edits have been made. Revisions should be easily identifiable in the revised application (e.g., bold, italicized, underline type, etc.). **This section should not exceed 3 pages.**

6. PREVIOUS CRITIQUES (resubmissions only)

All resubmissions must include a copy of the previous critiques. Electronic copies of the critiques for your previous submission(s) can be downloaded from your "Submitted" page on ProposalCentral. Select the link to "View Review Info," then click "Print" to save it as a .pdf. Upload the document to your new application with the other proposal sections.

7. RESEARCH PLAN AND ENVIRONMENT (PAGE 4.1)

Section A below (Specific Aims) should not exceed 1 page. Sections B-E below must not exceed 5 pages. These page limits do not apply to Sections (F) through (H).

The same proposal may be submitted to other funding agencies on an "either/or" basis, but ACS proposals must conform to our guidelines (including term and budget). If not, a proposal may be returned without review.

A. Specific Aims *(not to exceed 1 page).* List the hypotheses, objectives, and goals of your proposed research and briefly describe the scientific aims. In addition, state how the pilot award will enable establishment of a new significant research direction.

B. Background and Significance. Concisely summarize and critically evaluate relevant work done by your research team and others. Specifically state how the successful completion of the work proposed will advance scientific knowledge that is relevant to cancer discovery, prevention, detection, treatment, and/or survivorship.

C. Innovation

- Explain how the application fills an unmet gap in the field and/or challenges and seeks to shift current research or clinical-practice paradigms. Innovation may also be found in the study population by including understudied groups and/or novel aspects of disease.
- Describe any novel, refined, and/or new applications of theoretical concepts, approaches, methodologies, instrumentation, or intervention(s) to be developed or used, and the advantage they offer over existing ones.

D. Preliminary Studies. While preliminary data are not required for this pilot grant mechanism, there should be sufficient evidence to support funding a novel discovery or new significant research direction in cancer. You may therefore choose to provide results of your prior research that are relevant to this proposal. Reprints or preprints may be included in the Appendix. Note that the entire application is considered confidential.

E. Research Design. Describe your overall hypothesis, proposed methods, procedures, and data analysis in sufficient detail to permit evaluation by other scientists; include your rationale for approaches and analysis. Explain your project's feasibility and how the experiments proposed will address the Specific Aims. Discuss potential difficulties and limitations of your proposed methods and provide alternative approaches. Inclusion of an experimental timeline can be helpful.

F. **Experimental Details** *(optional – not to exceed 3 pages).* This section is available if more in-depth description of the experimental design, technologies, or assays are needed to convey the specific approaches and procedures proposed. This section is also appropriate for articulating specifics regarding how you plan to use findings from this research to inform a larger study.

G. **Environment.** Briefly describe the space, resources, and equipment available to carry out the proposed research (e.g., space designated specifically for your research program, shared space and/or core facilities), and include details of how this environment will support your research. Investigators must have an institutional commitment of research facilities, and the amount of committed space must be verified (see Statement of Institutional Support below).

H. **References.** Each literature citation should include title, authors, book or journal, volume number, page numbers, and year of publication. There is no page limitation; this section is not included in the 5-page limit of Sections (B) through (E).

Note: Starting January 2024, the *Statement of Scientific Outreach and Advocacy* is no longer part of the approach section.

8. DETAILED BUDGET

Complete the budget page located online at ProposalCentral. For applications submitted in June (December), use a start date of April 1 (October 1) of the next year.

See the Detailed Budget Section of the RSG instructions for guidance on the budget categories. Additional details specific to DBG applications are provided below.

Total Amount Requested. Budget totals should reflect a maximum duration of 2 years and a maximum of $135,000 direct costs plus up to $13,500 indirect costs (IDC) per year for a total maximum award amount of $297,000. The amount on the application Title Page should match the total costs in the detailed budget section.

Example: DBG Budget Indirect Costs Year 1

Primary Direct Costs	$100,000	Primary IDC (10%)	$10,000
Subcontract Direct Costs	$35,000	Secondary IDC (10%)	$3,500
Total Direct	$135,000	**Total Indirect (10%)**	$13,500
Total Costs Year 1		$148,500	

Notes: Applicants should not budget above or below the allowable indirect cost rate. The primary institution is responsible for distributing funds, including indirect costs, to a subcontracting institution. For budgets that do not request the maximum allowable amount, if the grant is funded, the ACS will round the total to the nearest thousand dollars. We encourage applicants to request a budget amount that is rounded to an even thousand dollars.

9. JUSTIFICATION OF BUDGET

Provide budget justification on the template provided in ProposalCentral. Justify all items of permanent equipment costing over $5,000 as well as needs for personnel, supplies, travel, and other miscellaneous items. If the budget includes a request for funds to be spent outside the United States or its territories, explain why these expended funds are essential to the successful conduct of the project, and why there are no alternatives. Provide details of contractual arrangements with key personnel in this section.

10. BIOGRAPHICAL INFORMATION OF KEY PERSONNEL (PAGE 5.1)

Complete the NIH Biosketch template following the formats and instructions provided by the NIH. The Biographical Sketch **may not exceed 5 pages**. All key personnel biosketches may be combined into a single PDF and uploaded as the designated attachment type.

Note: If the NIH has modified the NIH Biosketch, applicants may use the newly modified template, or the template provided in ProposalCentral**.**

11. OTHER SUPPORT (PAGE 6.1)

See the Other Support section of the RSG instructions for guidance on completing parts A and B of this template.

C. Institutional Support. The Principal Investigator only must provide:

a. Details of the institutional commitment to support the applicant's salary and research program, which could include start-up funding. Start-up funding from the institution or extramural funding that is designated as start-up funding should be noted.
b. A description of the space committed to the project.
c. The current term of the applicant's appointment.

The Statement of Institutional Support written by the Department Chair should align with the details provided by the PI in Section C of this template.

12. LIST OF LETTERS OF SUPPORT FROM COLLABORATORS/CONSULTANTS (PAGE 7.1)

Provide a list of collaborators, co-investigators, and consultants using the template. Upload the letter from each individual collaborator, co-I, or consultant. The letter should outline the role that each person will play with sufficient detail for evaluation of the value of the individual contribution. The list and all letters of support (in the same order on the list) may be combined into a single PDF and uploaded as the designated attachment type.

13. COMPLIANCE STATEMENTS (PAGE 8.1)

See the Compliance Statement section of the RSG instructions for guidance on completing this template.

14. STATEMENT OF INSTITUTIONAL SUPPORT (PAGE 9.1)

The applicant's Department Chair (or equivalent) should provide the following information for the Principal Investigator only:

- Details of the institutional commitment to support the applicant's salary and research program, including salary support and dedicated space.
- A description of any start-up funds provided by the institution (or funding from any other sources outside the institution that is designated as start-up funding) to the applicant, if applicable. An award of start-up funds does not decrease the likelihood of ACS support and can be important evidence of institutional commitment for early-career investigators.
- Details of how the environment and resources at the institution will directly support and contribute to the success of the candidate's research.
- The current term of the applicant's appointment.
- The Department's long-term goals for the applicant's career.

Non-tenure track applicants should also include a more detailed description of the space committed to the project. For clinician scientists, a description of their clinical practice (discipline and clinical responsibilities) as well as the amount of protected time should also be included. This statement is expected to vary depending on the career stage of the PI.

15. APPENDIX TO APPLICATION

In addition to the application templates, other key documents may be uploaded and submitted as part of the application. However, applicants are urged to keep this section as brief as possible.

Appended materials may include:

- Letter from the ACS Eligibility Committee confirming eligibility (if applicable)
- Letters of support
- Recent reprints or preprints (optional)
- Clinical protocols (if applicable)
- Logic model for program projects and dissemination and implementation (if applicable)

It is not necessary to number the pages of the Appendix, but please list by categories (i.e., reprints, preprints, etc.) in the Table of Contents**.**

REVIEWER GUIDELINE CRITERIA

Reviewers will be asked to provide the major score-driving strengths and/or weaknesses of applications focusing on the below areas during their evaluation. These are meant as general guidelines and are provided here as an aid for preparing your application.

1. SIGNIFICANCE, INNOVATION, AND CANCER RELEVANCE

Does the project address an important problem or a critical barrier to progress in the field? If successful, what is the long-term significance of the research? How is this research relevant to or how will it impact people at risk for, or living with, cancer or their family/caregivers? If appropriate, describe how the project contributes to promoting cancer health equity. The relevance to cancer must be clearly articulated by the applicant. What is the potential that the proposed study will challenge and seek to shift current research understanding or clinical practice paradigms by utilizing novel theoretical concepts, approaches or methodologies, instrumentation, or interventions? Will the project open new and highly innovative areas for investigation? High risk/high reward projects should be highly innovative.

2. RESEARCH PLAN/APPROACH

DBGs are intended to support exploratory projects and pilot test high risk/high reward ideas or establish feasibility. Will the proposed project generate preliminary data that has the potential to secure additional grant funding? Is the overall strategy, methodology, data collection, analyses, and timeline well-reasoned and appropriate to accomplish the specific aims of the project? Where appropriate, are proposed recruitment and/or case ascertainment methods well developed? Is the sample size adequate? Are potential pitfalls, alternative approaches, benchmarks for success, and future plans articulated?

3. INVESTIGATOR/RESEARCH TEAM

Does the PI and research team have the training and experience needed to carry out the proposed research? Is there confidence that the PI can secure subsequent funding once this pilot project has concluded? Do team members have complementary skills and a feasible plan for collaboration, where applicable?

4. REPLY TO PREVIOUS REVIEWS [IF APPLICABLE]

If applicable, detail the candidate's responsiveness to previous critiques, focusing on the strengths and weaknesses of their reply.

5. ENVIRONMENT AND RESOURCES

Will the scientific environment, resources, and institutional support contribute to the probability of success? Will the project benefit from unique features of the scientific environment, populations

studied, or collaborative arrangements? For early-stage investigators, are there competitive start-up funds to support the candidate's independent research program?

6. BUDGET

NOT TO BE FACTORED INTO SCORING

Evaluate the overall budget and individual budget categories with respect to the award cap and the project aims. Are the budget items justified, specified, and accurate? Is the percent effort of key personnel appropriate? Is there potential scientific overlap with the PI's other funded research? Describe any suggested budget changes - use specific amounts or percentages.

It is the policy of the American Cancer Society not to fund projects that are supported all or in part by another agency.

7. COMPLIANCE STATEMENTS

NOT TO BE FACTORED INTO SCORING

- **Human Subjects:** If applicable, evaluate the plans for protection of human subjects from research risks justified in terms of the scientific goals and research strategy proposed. For example, are the potential benefits and risks to subjects articulated reasonable and appropriate given the study design? Are the plans for conducting sub-analysis by group, data security and confidentiality, biohazards and data and safety monitoring adequate?
- **Inclusion of Women, Minorities, and Children:** When the proposed project involves human subjects, evaluate the adequacy of the proposed plans for inclusion or exclusion of minorities, male and female genders, as well as children.
- **Vertebrate Animals:** Evaluate the plan for live, vertebrate animals as part of the scientific assessment according to the following points: 1) necessity for the use of the animals and species proposed; 2) appropriateness of the strains, ages, and gender; 3) justifications for, and appropriateness of, the numbers of animals.
- **Hazards:** Assess whether materials or procedures proposed are potentially hazardous to research personnel and/or the environment, and if needed, determine whether adequate protection is proposed.

MISSION BOOST GRANT
INSTRUCTIONS

Applicants are *encouraged* to review the eligibility requirements in the grant policies to ensure they are eligible prior to applying. Applications may be withdrawn if an applicant or institution do not meet the eligibility criteria.

ProposalCentral Application Fields: Complete all fields and required components in the ProposalCentral portal as described above (Section I: Subsections 5-15). The principal investigator is required to e-sign the application.

1. APPLICATION TEMPLATES

An application consists of several sections that must be uploaded before the online application is submitted. Templates for these sections become available once you start your application on ProposalCentral; download and complete the templates offline. Detailed below are the instructions for completing the individual sections. *The sections must be converted into .pdf documents before uploading. Please see ProposalCentral's FAQ or call support at 1-800-875-2562 if you need assistance.*

2. TABLE OF CONTENTS (PAGE 1.1)

The Table of Contents is pre-numbered, corresponding to the page numbers for the first page of each application section. Complete the Table of Contents by indicating the appropriate page numbers for the Research Plan section; the Table of Contents should not exceed 2 pages.

Itemize appendices in order of appearance at the bottom of the Table of Contents template; appendices do not need to have page numbers.

3. BIOGRAPHICAL SKETCH OF APPLICANT (PAGE 2.1)

Complete the NIH Biosketch template following the formats and instructions provided by the NIH. The Biographical Sketch **may not exceed 5 pages**.

Note: If the NIH has modified the NIH Biosketch, applicants may use the newly modified template, or the template provided in ProposalCentral.

4. REPLY TO PREVIOUS REVIEWS (PAGE 3.1)

IF THE APPLICATION IS A NEW SUBMISSION, upload the provided template with "Not Applicable" in the body.

All resubmissions must create a new application on ProposalCentral. Note: Only one resubmission is allowed for Mission Boost Grant applications.

For resubmissions, address the points raised in the previous critiques and direct the reviewer to the specific sections of the text where edits have been made. Revisions should be easily identifiable in the revised application (e.g., bold, italicized, underline type, etc.). **This section should not exceed 3 pages.**

5. PREVIOUS CRITIQUES (resubmissions only)

All resubmissions must include a copy of the previous critiques. In ProposalCentral, go to the "Submitted" page, select "View Review Info," click "Print" to save it as a .pdf. Upload the document to your new application with the other proposal sections.

6. RATIONALE AND RESEARCH PLAN (PAGE 4.1)

Stage I

A. Rationale *(not to exceed one page).* What is the clinical need and how will this research program address that need?

B. Research Plan *(5 pages or less).*

1. **Goals and Approach.** Briefly describe the research program for Stage I MBG funding and the approach(es) that will be utilized.
2. **Innovation and Opportunity.** Describe the expected innovation, major risks, and opportunities of the research project and how you will meet the criteria of high risk/high reward.
3. **Milestones.** Provide clear, quantitative, and outcome-based milestones for Stage I and describe how accomplishing the outcomes will enable clinical testing in Stage II. Milestones should not be a restatement of the Aims, but rather a breakdown of how the work will be accomplished and progress monitored.

C. Experimental Details *(optional – not to exceed 3 pages).* This section is available if more in-depth descriptions of the experimental design, technologies, or assays are needed to convey the specific approaches and procedures proposed.

D. Justification for Stage II Funding (*2 pages or less*). Provide a brief overview of plans for clinical testing during Stage II. Review of your Stage II application is contingent upon achievement and review of Stage I milestones and outcomes.

E. References *(no page limit).* The list of references should correspond to the citations in the Research Plan. Each literature citation should include the names of all authors, title, book or journal, volume number, page numbers, and year of publication.

<u>Stage II</u>

A. Rationale *(not to exceed one page).* What is the clinical need and how will this research project address that need?

B. Research Plan *(5 pages or less)*

1. **Project Status.** Briefly summarize the current status of your Stage I project, including resulting presentations, publications, intellectual property, and funding.
2. **Milestone Accomplishments.** Describe the Milestones from your Stage I Mission Boost Grant, and the results demonstrating that you have achieved them.
3. **Goals and Approach.** Describe the research program for Stage II MBG funding and the approach(es) that will be utilized for clinical testing. This should include:
    - Trial design and data collection
    - Subject recruitment and eligibility
    - Compliance, adherence, and adverse effects
    - Expected results and potential difficulties
4. **Near-Term Clinical Benefits.** Briefly describe how this trial will benefit other cancer patients in the near-term (next 1-3 years).

C. Clinical Approach Details *(optional – not to exceed 3 pages)*. This section is available if more in-depth descriptions of the clinical trial design, recruitment, or assays are needed to convey the specific approaches and procedures proposed.

D. References *(no page limit).* The list of references should correspond to the citations in the Research Plan. Each literature citation should include the names of all authors, title, book or journal, volume number, page numbers, and year of publication.

7. BIOGRAPHICAL INFORMATION OF KEY PERSONNEL (PAGE 5.1)

Complete the NIH Biosketch template following the formats and instructions provided by the NIH. The Biographical Sketch **may not exceed 5 pages**. All key personnel biosketches may be combined in a single PDF file and uploaded as the designated attachment type

Note: If the NIH has modified the NIH Biosketch, applicants may use the newly modified template, or the template provided in ProposalCentral.

8. OTHER SUPPORT (PAGE 6.1)

See the Other Support section of the RSG Instructions for guidance on completing parts A and B of this template.

PIs are encouraged to develop collaborations with pharmaceutical companies or other private entities to help fund Stage II clinical trials if necessary.

Please keep the Program Office current on the status of pending applications that have scientific overlap and would interfere with the PI's budgeted effort on the ACS proposal.

C. Institutional Support. Provide the following information for the Principal Investigator only:

a. Details of the institutional commitment to support the applicant's salary and research.

b. A description of the space committed to the project.

c. The current term of the applicant's appointment.

9. LIST OF LETTERS OF SUPPORT FROM COLLABORATORS/CONSULTANTS (PAGE 7.1)

Provide a list of collaborators, co-investigators, and consultants using the template provided, and then directly upload a letter from each individual collaborator or consultant. The letter should outline the role that person will play with enough detail for evaluation of the value of the individual's contribution. The list and the letters (in the same order on the list) may be combined in a single PDF file and uploaded as the designated attachment type.

10. STATEMENT OF INSTITUTIONAL SUPPORT (8.1)

The applicant's Department Chair (or equivalent) should provide the following information for the Principal Investigator only:

- Details of the institutional commitment to support the applicant's salary and research program, including salary support and dedicated space.
- A description of any start-up funds provided by the institution (or funding from any other sources outside the institution that is designated as start-up funding) to the applicant, if applicable. An award of start-up funds does not decrease the likelihood of ACS support and can be important evidence of institutional commitment for early-career investigators.
- Details of how the environment and resources at the institution will directly support and contribute to the success of the candidate's research.
- The current term of the applicant's appointment.
- The Department's long-term goals for the applicant's career.

Non-tenure track applicants should also include a more detailed description of the space committed to the project. For clinician scientists, a description of their clinical practice (discipline and clinical responsibilities) as well as the amount of protected time should also be included.

11. COMPLIANCE STATEMENTS (PAGES 9.1 – 9.2)

See the Compliance Statement section of the RSG instructions for guidance on completing this template.

12. DETAILED BUDGET

Complete the budget page located online at ProposalCentral. For applications submitted in June (December), use a start date of April 1 (October 1) of the next year.

See the Detailed Budget Section of the RSG instructions for guidance on the budget categories.

Total Amount Requested. For Stage I, budget totals should reflect a maximum duration of 2 years. The total maximum budget may not exceed $297,000 ($135,000 direct plus $13,500 indirect costs per year. For Stage II, budget totals should reflect a maximum duration of 18 months. The total maximum budget may not exceed $599,500 ($545,000 direct plus $54,500 indirect costs). The amount on the application Title Page should match the total costs in the detailed budget section.

Example: Stage I Budget Indirect Costs Year 1

Primary Direct Costs	$100,000	Primary IDC	$10,000
Subcontract Direct Costs	$35,000	Secondary IDC	$3,500
Total Direct	$135,000	**Total Indirect (10%)**	$13,500
Total Costs Year 1		**$148,500**	

Notes: For budgets that do not request the maximum allowable amount, if the grant is funded, the ACS will round the total to the nearest thousand dollars. We encourage applicants to request a budget amount that is rounded to an even thousand dollars. Applicants should not budget above or below the allowable indirect cost rate. The primary institution is responsible for distributing funds, including indirect costs, to a subcontracting institution.

13. JUSTIFICATION OF BUDGET

Please provide budget justification on the template provided in ProposalCentral. Justify all items of permanent equipment costing over $5,000 and the need for personnel, supplies, travel, and other miscellaneous items. If the budget includes a request for funds to be expended outside the United States or its territories, include an explanation of why such costs are essential for the successful conduct of the project, and why there are no alternatives. Provide details of contractual agreements of Key Personnel in this section.

14. APPENDIX TO APPLICATION

In addition to the application templates, other key documents may be uploaded and submitted as part of the application. However, applicants are urged to keep this section as brief as possible.

Appended materials may include:

- Recent reprints or preprints (optional)
- Clinical protocols (if applicable)

It is not necessary to number the pages of the Appendix, but please list by categories (e.g., reprints, preprints) in the Table of Contents of the application.

REVIEWER GUIDELINE CRITERIA

Reviewers provide feedback on the following criteria, focusing on the strengths and weaknesses of the proposal. These are meant as general guidelines and are provided here as an aid for preparing your application

1. CANDIDATE

Evaluate the candidate's academic, clinical, scientific qualifications. Assess the qualifications of the applicant giving consideration to the following items: goals and commitment to cancer-related research, productivity, support, collaborators, and overall appropriateness of candidate for the Stage I or Stage II MBG.

Stage I Mission Boost Reviewer Guidelines

2. REPLY TO PREVIOUS REVIEWS

If applicable, detail the candidate's responsiveness to previous critiques, focusing on the strengths and weaknesses of their reply.

3. RESEARCH PLAN

It is critical to evaluate rather than summarize the research plan and milestones. The research plan must be fundamentally sound, innovative and reduce the risks of studying a new drug, device, or procedure in patients.

4. GOALS AND RATIONALE

Does the project address an important clinical problem or a critical barrier to clinical progress? If the aims of the project are achieved, how will clinical practice improve? How will successful completion of the aims change clinical practice in the near-term and long-term?

5. INNOVATION AND OPPORTUNITY

Is the proposed research innovative? Mission Boost Grants are high risk/high reward endeavors. Are the expected risks worth the potential opportunity? What is the potential that the proposed study will challenge and seek to shift current clinical practice paradigms by utilizing novel theoretical concepts, approaches or methodologies, or instrumentation? Does the research propose meaningful improvements or address critical gaps?

6. APPROACH

Will the planned approaches accomplish the project goals? Are the study design, methods for implementation, data collection and analysis appropriate for answering the research question? Where appropriate, are proposed recruitment and/or case ascertainment methods well developed? Is the sample size adequate? Is the research timeline realistic?

7. MILESTONES

Will accomplishing the milestones enable clinical testing in a Stage II MBG?

8. INVESTIGATOR/RESEARCH TEAM

Does the PI and research team have the training and experience needed to carry out the proposed research? Do team members have complementary skills and qualifications needed for successful implementation and analysis of the proposed research?

9. JUSTIFICATION FOR SECONDARY BOOST

Evaluate the overall justification for Stage II. Will accomplishing the goals of Stage I allow clinical testing in Stage II?

Stage II Mission Boost Grant Reviewer Guidelines

2. REPLY TO PREVIOUS REVIEWS

If applicable, detail the candidate's responsiveness to previous critiques, focusing on the strengths and weaknesses of their reply.

3. RESEARCH PLAN

It is critical to evaluate rather than summarize the research plan. The research plan must be fundamentally sound, innovative and reduce the risks of studying a new drug, device, or procedure in patients.

4. STATUS OF PHASE I PROJECT

Comment on the productivity of the principal investigator during their Stage I grant.

5. MILESTONE ACCOMPLISHMENTS

Has the investigator accomplished their stated milestones? If not, have they explained why and how results from Stage I indicate that a Stage II is warranted?

6. GOALS AND APPROACH

Does the project address an important clinical problem or a critical barrier to clinical progress? Will the planned approaches accomplish the project goals? Are the clinical design, methods for implementation, data collection and analysis appropriate for answering the research question? Where appropriate, are proposed recruitment and/or case ascertainment methods well developed? Is the sample size adequate? Are potential difficulties and expected results discussed? Is the research timeline realistic?

7. NEAR-TERM CLINICAL BENEFITS

If the aims of the project are achieved, how will clinical practice improve? How will successful completion of the aims change clinical practice in the near-term and long-term?

8. INVESTIGATOR/RESEARCH TEAM

Does the PI and research team have the training and experience needed to carry out the proposed research? Do team members have complementary skills and qualifications needed for successful implementation and analysis of the proposed research?

11/9. BUDGET

NOT TO BE CONSIDERED IN SCORING

Evaluate the budget for Stage I/Stage II. Are the budget items justified, specified, and accurate? Is the percent effort of key personnel appropriate? Is there a potential overlap with the PI's other funded research? Does the PI have commitments from pharmaceutical companies or other private entities that will support the work? Describe any suggested budget changes; use specific amounts or percentages.

It is the policy of the American Cancer Society not to fund projects that are supported all or in part by another agency. PIs are encouraged to obtain institutional, industry and/or private funding to help support clinical trials if necessary.

12/10. COMPLIANCE STATEMENTS

NOT TO BE CONSIDERED IN SCORING

- **Human Subjects.** If applicable, evaluate the plans for protection of human subjects from research risks justified in terms of the scientific goals and research strategy proposed. For example, are the potential benefits and risks to subjects articulated reasonable and appropriate given the study design? Are the plans for conducting sub-analysis by group, data security and confidentiality, biohazards and data and safety monitoring adequate?
- **Inclusion of Women, Minorities, and Children.** When the proposed project involves human subjects, evaluate the adequacy of the proposed plans for inclusion or exclusion of minorities, male and female genders, as well as children.
- **Vertebrate Animals.** Evaluate the plan for live, vertebrate animals as part of the scientific assessment according to the following points: 1) necessity for the use of the animals and species proposed; 2) appropriateness of the strains, ages, and gender; 3) justifications for, and appropriateness of, the numbers of animals.
- **Hazards.** Assess whether materials or procedures proposed are potentially hazardous to research personnel and/or the environment, and if needed, determine whether adequate protection is proposed.

CLINICIAN SCIENTIST DEVELOPMENT GRANT INSTRUCTIONS

Applicants are *encouraged* to review the eligibility requirements in the grant policies to ensure they are eligible prior to applying. Applications may be withdrawn if an applicant or institution do not meet the eligibility criteria.

PART I – ADMINISTRATIVE INFORMATION, CANDIDATE, RESEARCH PLAN, AND BUDGET

1. COVER PAGES

Complete all fields and required components in the ProposalCentral portal as described above (Section I: Subsections 5-15). The principal investigator is required to e-sign the application. We provide text boxes for e-signatures for the departmental chair (or equivalent) and institutional officials to accommodate institution-specific requirements for proposal submissions, but neither is required for submission to ACS. Note: the PI must enable other users' access to the application on ProposalCentral to permit their e-signatures.

If you have received a letter from the ACS Eligibility Committee or your Program Office granting an exemption or extension, indicate that on the Table of Contents and upload the correspondence in the Appendix.

Requests for Applications (RFAs): If you are responding to an RFA, select "yes" and select the appropriate RFA from the list on the title page. You are not required to submit the CSDG application to an RFA; select "N/A" if you are submitting a ***standard*** CSDG application.

- **ASTRO-CSDG** – Applications submitted to the ACS-ASTRO-CSDG RFA, must include ASTRO in the title like so: ASTRO: [CSDG Title].

2. APPLICATION TEMPLATES

An application consists of several sections that must be downloaded, completed offline, and uploaded before the online application is submitted. Once an application is started on ProposalCentral, all necessary application templates are available to download. Complete off-line (instructions described in individual sections below) and upload as .pdf documents before submitting the online application. *For assistance, see ProposalCentral's FAQ or call support at 1-800-875-2562.*

3. TABLE OF CONTENTS (PAGE 1.1)

The Table of Contents is pre-numbered, corresponding to the page numbers for the first page of each application section. Complete the Table of Contents by indicating the appropriate page numbers for each section; the Table of Contents should not exceed 2 pages.

Itemize appendices in order of appearance at the bottom of the Table of Contents template; appendices do not need to have page numbers.

4. BIOSKETCH OF THE APPLICANT (PAGE 2.1)

Complete the NIH Biosketch template following the formats and instructions provided by the NIH. The Biographical Sketch **may not exceed 5 pages**.

Note: If the NIH has modified the NIH Biosketch, applicants may use the newly modified template, or the template provided in ProposalCentral.

5. REPLY TO PREVIOUS REVIEW (resubmissions only) (PAGE 3.1)

IF YOUR APPLICATION IS A NEW SUBMISSION, upload this template with "Not Applicable" in the body to ProposalCentral.

All resubmissions must create a new application on ProposalCentral. For Resubmissions: Address the points raised in the previous critiques and direct the reviewer to the specific sections of

the text, figures or tables where edits have been made. Revisions should be easily identifiable in the revised application (e.g., bold type, underlined type, italicized type). **This section should not exceed 3 pages.**

6. PREVIOUS CRITIQUES (resubmissions only)

All resubmissions must include a copy of the previous critiques. In ProposalCentral, go to the "Submitted" page, select "View Review Info," click "Print" to save it as a .pdf. Upload the document to your new application with the other proposal sections. For applications submitted before Spring 2021, electronic copies of the critiques for your previous submission(s) can be downloaded from your "Submitted" page on ProposalCentral. Select the link to "View Review Info," then "View Summary Statement," and save the document to your computer.

7. STATEMENT OF EXPERIENCE AND CAREER GOALS OF THE APPLICANT (PAGE 4.1)

In 3 pages or less, describe:

A. Clinical and research experiences that have been impactful and why. For all research experience, state the nature, results, location, time frame, with whom the work was conducted, and your role
B. The training potential of the grant beyond previous experiences. Include new technical and conceptual approaches the training will offer. Clearly articulate the need for mentoring over the requested grant term.
C. Short- and long-term career goals in cancer research and how the proposed training and research plans align with these goals.

8. LIST OF RECOMMENDERS (PAGE 5.1)

List the name, title, and email address of three persons, **other than your proposed mentor(s)**, who can critically appraise your qualifications. Also provide this contact information on ProposalCentral so that they can access the site to upload their letters.

They should be able to comment on your character, motivation, maturity, general knowledge, ability to use research techniques, originality, specialized experience, and training.

There are specific instructions on the site for you and your recommenders. Your application cannot be submitted until these letters have been uploaded on ProposalCentral.

Please Note for Resubmissions Only: Letters of recommendation can be reused in a resubmission if the application is resubmitted within a calendar year of the initial proposal. Your recommenders ***are required to upload the letters to ProposalCentral again***.

9. RESEARCH PLAN AND ENVIRONMENT (PAGE 6.1)

The same proposal may be submitted to other funding agencies on an "either/or" basis, but ACS proposals must conform to our guidelines (including term and budget); if not, a proposal may be returned without review.

The total length of the RESEARCH PLAN section should not exceed 13 pages. **Section A below (Specific Aims) should not exceed 1 page. Sections (B) through (E) below must not exceed 12 pages. This page limit does not include Sections (F) through (H).**

A. Specific Aims *(not to exceed 1 page)*. List the objectives and goals of your proposed research and briefly describe the specific aims.

B. Background and Significance. Concisely summarize and critically evaluate relevant work done by your research group (if applicable) and others. Specifically state how the successful completion of the work proposed will advance scientific knowledge that is relevant to cancer discovery, prevention, detection, treatment, and/or survivorship.

C. Innovation.

- Explain how the application fills an unmet gap in the field and/or challenges and seeks to shift current research or clinical-practice paradigms. Innovation may also be found in the study population by including understudied groups and/or novel aspects of disease.
- Describe any novel, refined, and/or new applications of theoretical concepts, approaches, methodologies, instrumentation, or intervention(s) to be developed or used, and the advantage they offer over existing ones.

D. Preliminary Studies. Provide results of your prior research, if any, that are relevant to this proposal; reprints or preprints may be included in the Appendix. ***Note*** that the entire application is considered confidential.

E. Research Design and Methods. Describe your overall specific aims, proposed methods, procedures, and plan for data collection and analysis in sufficient detail to permit evaluation by other scientists. Include your rationale for approaches and analysis. Explain your project's feasibility and how the proposed research will address the Specific Aims. Discuss potential difficulties and limitations of your proposed methods and provide alternative approaches. Inclusion of a study timeline can be helpful. Order your priorities and estimate the length of time that you believe will be required to complete each specific aim. Although the time estimated should not exceed the term for which support is requested, it is helpful to state how this project fits in with your long-term research goals.

F. Experimental Details *(3 pages or less).* This section is available if more in-depth descriptions of the experimental design, technologies, or assays are needed to convey the specific approaches and procedures proposed.

G. Environment for Research and Training. Document the existence of an appropriate academic and research environment for the proposed research study and training program, including:

- departmental and other institutional personnel;
- ongoing research and other relevant activities;
- facilities and resources;
- access to any populations or individuals to be studied;
- relevant collaborative relationships; and
- any relevant accreditation from professional societies or organizations.

Describe how the presence of these resources will directly benefit you and your research.

H. References (no page limit). Each literature citation should include the title, authors, book or journal, volume number, page numbers, and year of publication. This section is not included in the 12-page limit of Sections (B) through (E).

Note: Starting January 2024, the *Statement of Scientific Outreach and Advocacy* is no longer part of the approach section.

10. DETAILED BUDGET

Please complete the budget page located online at ProposalCentral. For applications submitted in June (December), use a start date of April 1 (October 1) of the next year.

See the Detailed Budget Section of the RSG instructions for guidance on the budget categories. Additional details specific to CSDG applications are provided below.

Key Personnel.

- **PI:** The CSDG PI is expected to have a minimum of 50% protected time (50% effort) throughout the proposed CSDG term. However, the PI's salary may be supported through additional funding sources beyond the CSDG budget. Please indicate additional sources of salary support in the budget justification and other application sections where appropriate.
- **Mentor(s):** List all mentor(s), defined as those individuals who will provide guidance, support and mentoring to you on this award**;** $10,000 per year is the maximum allowable for mentor(s), regardless of the number of mentors on the application.

Note the following exception: NIH clinical fellows and mentors at the NIH or other federally funded institutions may not request salary support from the CSDG budget.

Travel. In addition to other travel costs, CSDG applicants should reserve approximately $1,500 per year for the PI to travel for ACS-designated conferences, to include the biennial Jiler Professors and Fellows conference in their first or second year of the grant and the annual Kathleen M. Foley Palliative Care Retreat and Research Symposium, if your application focuses on palliative care and/or symptom management. For clarification contact grants@cancer.org, prior to submitting your application.

Indirect Costs. The Society will permit an indirect cost allowance of up to 8% of the direct costs, excluding permanent equipment. Indirect costs (IDC) can be provided to the secondary institution through negotiation with the Principal Investigator's institution but the total amount of indirect costs, inclusive of subcontracts, may not exceed 8% of the award. If a subcontract is receiving indirect costs, list the indirect costs for each institution separately in the indirect costs section of the detailed budget section.

Example: Budget Indirect Costs Year 1

Primary Direct Costs	$100,000	Primary IDC	$8,000
Subcontract Direct Costs	$35,000	Secondary IDC	$2,800
Total Direct	$135,000	**Total Indirect (8%)**	$10,800
Total Costs Year 1		**$145,800**	

Note: Applicants should not budget above or below the allowable indirect cost rate. The primary institution is responsible for distributing funds, including indirect costs, to a subcontracting institution.

Total Amount Requested. Budget totals should reflect a duration of 3-5 years (depending on the project period). Note that NIH clinical fellows may request a maximum term of 3 years. The allowable per year direct cost is $135,000 per year and the indirect costs rate is 8% ($10,800 max per year), making the total cost per year cap $145,800. The amount on the application Title Page should match the total costs in the detailed budget section.

Note: For budgets that do not request the maximum allowable amount, if the grant is funded, the ACS will round the total to the nearest thousand dollars. We encourage applicants to request a budget amount that is rounded to an even thousand dollars.

11. JUSTIFICATION OF BUDGET

Please provide budget justification on the template provided in ProposalCentral. Clearly justify each item listed in the budget. This includes all permanent equipment costing over $5,000, personnel, supplies, travel, and other miscellaneous items. If the budget includes a request for funds to be expended outside the United States or its territories, this section should include an explanation of why such costs are essential for the successful conduct for this project, and why there are no alternatives. Provide details of contractual arrangements with key personnel in this section.

Additional Mentors: If there is more than one mentor on the application, clearly specify the role of each mentor, even if there is no associated cost.

12. BIOGRAPHICAL INFORMATION OF KEY PERSONNEL (PAGE 7.1)

Complete the NIH Biosketch template following the formats and instructions provided by the NIH. The Biographical Sketch **may not exceed 5 pages**. This is a required application upload. Therefore, if no Key Personnel are included, a blank form must be uploaded. All key personnel biosketches may be combined in a single PDF file and uploaded as the designated attachment type. Do not include the Mentor's Biosketch in this section.

Note: If the NIH has modified the NIH Biosketch, applicants may use the newly modified template, or the template provided in ProposalCentral.

13. OTHER SUPPORT (PAGE 8.1)

See the Other Support section of the RSG Instructions for guidance on completing parts A and B of this template.

Please keep the Program Office current on the status of pending applications that have scientific overlap and could interfere with the PI's budgeted effort on the ACS proposal, or could compromise CSDG eligibility (i.e., an NIH K-award or an independent investigator research award).

C. Institutional Support. Provide the following information for the PI only:

a. Details of the institutional commitment to support the applicant including protected time, salary support and other financial resources, administrative support and available space. If the applicant has received start-up funding from a source outside their institution, this should be included here as well, or appropriately marked as start-up funding in the current support section.
b. The current term of the applicant's appointment.
c. Describe resources available that the PI will use to support their research and training.

The Letter of Institutional Support written by the Department Chair should align with the details provided by the PI in Section C of this template. **There is no requirement that the PI have start-up funds or independent laboratory space.**

14. LIST OF LETTERS OF SUPPORT FROM COLLABORATORS/CONSULTANTS (PAGE 9.1)

Provide a list of collaborators, co-investigators, and consultants on the template and upload the letters of support provided by each. The letter should outline the role that person will play with sufficient detail for evaluation of the value of the individual contribution. Upload the template with "Not Applicable" in the body if there are no collaborators, co-investigators, etc. The list and the letters (in the same order on the list) may be combined in a single PDF file and uploaded as the designated attachment type.

15. STATEMENT OF INSTITUTIONAL SUPPORT (PAGE 10.1)

A letter from the Department Chair (or equivalent) must be included in the application (upload in this section). This letter should clearly indicate the commitment of the institution to the support of the applicant and their research program. Details should include, but are not limited to, faculty rank, salary support, available space for the research proposal, the amount of protected time for clinical researchers, administrative support, core facilities, institutional faculty development, research training, resources to support coursework or travel or other resources to foster the successful career development of the applicant. The letter should also describe the Department's long-term goals for the applicant's career.

16. COMPLIANCE STATEMENTS (PAGE 11.1)

See the Compliance Statement section of the RSG instructions for guidance on completing this template.

PART II – TRAINING AND MENTORING PLAN

The proposed ***primary mentor*** is responsible for the completion of Part II using the templates provided.

A **Mentor** assists in the scientific and professional development of the mentee. Additional mentors may be added if needed to support the training and development of the applicant. Personnel serving in an advisory capacity, but not as a mentor as defined above may also be included in the mentoring and training plan. Their role should be detailed, but they do not need to be designated as a mentor, nor do they need to provide a letter of support.

17. PROGRAM GOALS AND PROPOSED TRAINING (PAGE 12.1)

Describe the overall goals of the proposed program and indicate how the grant, if awarded, will advance the candidate's career as an independent researcher. Provide a description of the specific plans for research training, including core curriculum studies, courses, and lectures. Explain in detail the activities planned for the period of the award, including clinical, research, teaching, coursework, administrative duties, etc., and skills the candidate will gain from the mentoring experience. Estimate the percentage of time allocated to each area. The primary mentor is expected to compose the mentoring and training plan. If an additional mentor or mentoring/advisory team is involved in the candidate's training, describe their participation as well. A co-mentor, mentoring team, or advisory team is not required, but may be included if the applicant and primary mentor think it will be beneficial to the successful training and development of the applicant. For each additional mentor, describe their role, area of expertise, and the frequency and mode of contact with the Candidate. Include a table indicating the timeline of implementation and completion of the Training Plan. Limit this section to 5 pages.

18. TRAINING EXPERIENCE OF MENTOR(S) (PAGE 13.1)

Document your background and experience in training clinical and applied cancer researchers. Describe *in detail* (table format preferred) your mentoring experience (e.g., list the researchers you have trained, the extent of their training, and their current involvement in clinical or applied cancer research). Fully describe your current professional responsibilities and activities.

19. BIOGRAPHICAL SKETCH OF MENTOR(S) (PAGE 14.1)

Provide biographical information requested for ***all mentors.*** Complete the NIH Biosketch template following the format and instructions provided by the NIH. The Biographical Sketch **may not exceed 5 pages**. Use a separate “Biographical Sketch” template for each mentor. If there are multiple mentors, the biosketches may be combined into a single PDF and uploaded as the designated attachment type. The primary mentor’s biosketch should appear first.

Note: If the NIH has modified the NIH Biosketch, applicants may use the newly modified template, or the template provided in ProposalCentral.

20. MENTOR(S) COMMITMENT LETTER(S) (PAGE 15.1)

A letter of commitment must be provided by the primary mentor. Additional mentors may also submit commitment letters, if appropriate for their involvement in the mentoring and training plan. The letter should include an assessment of the Candidate’s research, ability and potential, motivation, ability to plan and conduct research, knowledge of the field of study, and ability to work as a member of a research team. Letters may also include other attributes of the Candidate such as character or motivation. If there are multiple mentors, the letters may be combined in a single PDF file and uploaded as the designated attachment type. The primary mentor’s letter should appear first.

21. APPENDIX TO APPLICATION

In addition to the application templates, other key documents may be uploaded and submitted as part of the application. However, applicants are urged to keep this section as brief as possible.

Appended materials may include:

- Letter from ACS Eligibility Committee confirming eligibility (if applicable)
- Recent reprints or preprints (optional)
- Clinical Protocols (if applicable)
- Logic Model (for program projects and dissemination and implementation pilots – if applicable)

It is not necessary to number the pages of the Appendix, but please list by categories (e.g., reprints, preprints) in the Table of Contents.

REVIEW CRITERIA

Provided below are the guidelines used by reviewers to evaluate Clinician Scientist Development Grant applications. These are meant as general guidelines and are provided here as an aid for preparing your application.

1. CANDIDATE

Evaluate the qualifications of applicant considering the following items: goals and commitment to cancer research; past education; past training (board-eligible or board-certified), if appropriate; past research experience; number and relevance of previous publications; and overall appropriateness of candidate for the CSDG. **There is no requirement that the PI have start-up funds or independent laboratory space.**

Letters of Recommendation:

Provide an assessment of the confidential letters of recommendation, including research ability and potential, ability to plan and conduct research, knowledge of the field relevant to the proposed work, ability to work as a team, and personal characteristics. **To maintain confidentiality, this evaluation is not shared with the applicant.**

2. REPLY TO PREVIOUS REVIEWS [IF APPLICABLE]

Note whether this is a resubmission and comment on adequacy of response to critiques.

3. RESEARCH PLAN

Please provide a brief overview of the project. A junior investigator's research is not expected to reflect the breadth and depth of a senior scientist. Nevertheless, the research plan must be fundamentally sound.

4. RESEARCH PLAN – SIGNIFICANCE AND CANCER RELEVANCE

Does the project address an important problem or a critical barrier to progress in the field? How will successful completion of the aims change the concepts, methods, technologies, treatments, services, or interventions that drive this field? If appropriate, describe how the project contributes to promoting cancer health equity? How is this research relevant to persons at risk for, or living with, cancer and their family members and/or caregivers and friends? The relevance to cancer may be indirect, but the connection must be clearly articulated by the applicant.

5. RESEARCH PLAN – INNOVATION/IMPROVEMENT

What is the potential that the proposed study will challenge and seek to shift current research understanding or clinical practice paradigms by utilizing novel theoretical concepts, approaches or

methodologies, instrumentation, or interventions? Does the research propose meaningful improvements or address critical gaps?

6. RESEARCH PLAN – CANDIDATE/RESEARCH TEAM

Does the PI and research team (including mentor(s)) have the training and experience needed to carry out the proposed research? Do team members have complementary skills and qualifications needed for successful implementation and analysis of the proposed research? Has the research team previously collaborated on research or publications? If not, are members of the proposed study team appropriate to carry-out the research and is their plan for collaboration feasible, where applicable?

7. RESEARCH PLAN – APPROACH

Are the hypothesis and aims appropriate for answering the research question? Are the overall strategy, methodology, analyses and timeline well-reasoned and appropriate to accomplish the specific aims of the project? Are potential problems, alternative strategies, and benchmarks for success presented? If the project is in the early stages of development, will the strategy establish feasibility, and will particularly risky aspects be managed?

8. RESEARCH PLAN – ENVIRONMENT AND RESOURCES

Will the scientific environment in which the work will be done contribute to the probability of success? Are the institutional support, equipment and other physical resources available to the investigators adequate for the project proposed? Will the project benefit from unique features of the scientific environment, populations studied, or collaborative arrangements?

9. BUDGET

NOT TO BE CONSIDERED IN SCORING

Evaluate the overall budget and individual budget categories with respect to the award cap and the project aims, mentoring plan, and training plan. Are the budget items justified, specified, and accurate? Is the project duration, PI percent effort (**minimum of 50%**), and the percent effort of any collaborators appropriate? Is there a potential overlap with the PI's other funded research? Describe any suggested budget changes (i.e., could relate to personnel, research material and/or animals). Use specific amounts and/or percentages.

It is the policy of the American Cancer Society not to fund projects that are supported all or in part by another agency.

10. TRAINING AND MENTORING PLAN AND RESOURCES FOR TRAINING

Assess the appropriateness of the training activities, including didactic and non-didactic, in enhancing the research training of the applicant, and their relevance to the applicant's career objectives. Assess the suitability of the academic and research environment for the proposed training program. Consider departmental and other institutional personnel, ongoing research and other relevant activities, facilities, resources, access to any populations or individuals to be studied, relevant collaborative relationships, accreditations, etc.

11. TRAINING EXPERIENCE, BIOSKETCH(ES), SUPPORT, AND COMMITMENT LETTER(S) OF MENTOR(S)

Evaluate the appropriateness of the mentor's(s') experiences for their respective roles in the proposed training and mentoring plans. Consider the qualifications and reputation of mentor(s) in cancer research and in training cancer researchers, the commitment of mentor(s) to the plan, and the overall appropriateness of the mentor(s) and mentor(s) qualifications for the proposed research project.

12. COMPLIANCE STATEMENTS

NOT TO BE CONSIDERED IN SCORING

- **Human Subjects.** If applicable, evaluate the plans for protection of human subjects from research risks justified in terms of the scientific goals and research strategy proposed. For example, are the potential benefits and risks to subjects articulated reasonable and appropriate given the study design? Are the plans for conducting sub-analysis by group, data security and confidentiality, biohazards, and data and safety monitoring adequate?
- **Inclusion of Women, Minorities, and Children.** When the proposed project involves human subjects, evaluate the adequacy of the proposed plans for inclusion or exclusion of minorities, male and female genders, as well as children.
- **Vertebrate Animals.** The peer review committee will evaluate the involvement of live, vertebrate animals as part of the scientific assessment according to the following points: 1) Necessity for the use of the animals and species proposed; 2) Appropriateness of the strains, ages, and gender of the animals to be used for the experimental plan proposed; 3) Justifications for, and appropriateness of, the numbers used for the experimental plan proposed.
- **Hazards.** Assess whether materials or procedures proposed are potentially hazardous to research personnel and/or the environment, and if needed, determine whether adequate protection is proposed.

POSTDOCTORAL FELLOWSHIP INSTRUCTIONS

Applicants are *encouraged* to review all eligibility requirements in the grant policies to ensure they are eligible prior to applying. Applications may be withdrawn if an applicant or institution do not meet the eligibility criteria.

Submitting a new 3-year fellowship application when the applicant is eligible for only a 2-year fellowship **will result in the application being withdrawn without review**. The eligibility cutoffs are based on the length of time an applicant's terminal doctoral degree has been held at the application deadline. The month and year are used for all calculations.

At the time of application deadline if terminal degree has been held:	Maximum Fellowship Term (based on application deadline date)
0 to ≤ 3.0 years	3 years
> 3.0 to ≤ 4.0 years	2 years

PART I – ADMINISTATIVE INFORMATION, CANDIDATE, RESEARCH PROJECT

1. COVER PAGES

Complete all fields and required components in the ProposalCentral portal as described above (Section I: Subsections 5-15). The principal investigator and primary mentor are required to e-sign the application. We provide text boxes for e-signatures for the departmental chair (or equivalent) and institutional officials to accommodate institution-specific requirements for proposal submissions, but neither is required for submission to ACS. Note: the PI must enable other users' access to the application on ProposalCentral to permit their e-signatures.

If you have received an eligibility extension or exclusion letter from the ACS Eligibility Committee or from your Program Office, indicate that on the table of contents template and upload the correspondence in the Appendix.

In the title page section of the application on ProposalCentral, applicants are required to acknowledge that their application will be withdrawn if they apply for a term for which they are not eligible.

2. APPLICATION TEMPLATES

Once an application is started on ProposalCentral, all necessary application templates are available to download. Complete off-line (described in individual sections below) and upload as .pdf documents before submitting the online application. *For assistance, see ProposalCentral's FAQ or call support at 1-800-875-2562.*

3. TABLE OF CONTENTS (PAGE 1.1)

The Table of Contents is pre-numbered, corresponding to the page numbers for the first page of each application section. Complete the Table of Contents by indicating the appropriate page numbers for the Fellowship Research Plan section; the Table of Contents should not exceed 2 pages.

Itemize appendices in order of appearance at the bottom of the Table of Contents template; appendices do not need to have page numbers.

4. BUDGET

Complete the budget summary section on ProposalCentral using the example budgets below as a guide. Your budget should be identical to either the 2- or 3-year budgets presented below based on how many years of support you are eligible for as described above. For applications submitted in June (December), use a start date of April 1 (October 1) of the following year. In addition to the

stipend/salary each fellow will receive a **yearly allowance of $4,000** to be used to benefit the fellow (i.e., health insurance, workshop costs, career development activities, attending in-person or virtual scientific meetings, etc.). In the **last year of funding**, a $1,500 **travel allowance** is to be prioritized for travel costs to attend and present at the biennial ACS Jiler Professors and Fellows Conference, if offered that year, or expenses to present at a domestic scientific meeting of choice. **Institutional indirect costs may not be recovered from these funds.**

		3-Year Fellowship				2-Year Fellowship	
Budgets	**Period**	**Year 1**	**Year 2**	**Year 3**		**Year 1**	**Year 2**
	Stipend/Salary	66,000	68,000	70,000		68,000	70,000
	Allowance	4,000	4,000	4,000		4,000	4,000
	Travel	--	--	1,500		--	1,500
	Total	$217,500				$147,500	

5. PENDING FELLOWSHIP APPLICATIONS (PAGE 2.1)

List all sources of **current** and **pending** fellowship support with other funding agencies. Indicate the granting agency, start date, and full term of the award. Please notify the Scientific Director immediately if you accept an award from another agency.

6. BIOGRAPHICAL SKETCH OF APPLICANT (PAGE 3.1)

Complete the NIH Biosketch template following the formats and instructions provided by the NIH. The Biographical Sketch **may not exceed 5 pages**.

Note: If the NIH has modified the NIH Biosketch, applicants may use the newly modified template, or the template provided in ProposalCentral. The NIH Fellowship template may be used but is not required.

7. REPLY TO PREVIOUS REVIEW (PAGE 4.1)

IF APPLICATION IS A NEW SUBMISSION, upload the provided template with "Not Applicable" in the body.

All resubmissions must create a new application on ProposalCentral.

For Resubmissions: Address all of the points raised in the previous critiques and direct the reviewer to the specific sections of the text where edits have been made. Revisions should be easily identifiable in the revised application (e.g., bold, italicized, or underline type). **This section should not exceed 3 pages.**

8. PREVIOUS CRITIQUES (resubmissions only)

All resubmissions must include a copy of the previous critiques. In ProposalCentral, go to the "Submitted" page, select "View Review Info," click "Print" to save it as a .pdf. Upload the document to your new application with the other proposal sections.

9. STATEMENT OF EXPERIENCE, TRAINING POTENTIAL OF THIS FELLOWSHIP, AND CAREER GOALS OF APPLICANT (PAGE 5.1)

In 3 pages or less, describe:

- **A.** Research experiences that have been impactful and why.
- **B.** The training potential of the fellowship beyond graduate work and experience. Include new skills and technical or conceptual approaches the training will offer.
- **C.** Career goals in cancer research and how the proposed training and research plans align with these goals.

10. FELLOWSHIP RESEARCH PLAN (PAGE 6.1)

The total length of this section should not exceed 9 pages, excluding references. Proposals should be realistic in terms of work to be accomplished in the time period for which support is requested. You are encouraged to include a timeline for the research plan.

A. **Specific Aims.** List the objectives and goal of the research proposed and describe the specific aims briefly in order of priority.

B. **Background and Significance.** Concisely summarize and critically evaluate relevant work done by others that provides a rationale or justification for the proposed project. Specifically state how the successful completion of the work proposed will advance scientific knowledge that is relevant to cancer discovery, prevention, detection, treatment, and/or survivorship.

C. **Preliminary Studies (if available; not required).** Provide results of research accomplished by you and/or others that are relevant to this proposal in a sufficiently comprehensive manner to indicate their significance. *Carefully attribute the source of any preliminary data included.*

D. **Research Design and Methods.** Describe your proposed methods and procedures in sufficient detail to permit evaluation by other scientists. Discuss expected outcomes, potential difficulties and limitations of the methods and procedures, and alternative approaches.

E. **References** should be listed numerically, in order of their appearance in the text. Each reference listed must include the title, names of all authors, book or journal, volume number, page numbers, and year of publication. The page limit does not include references.

11. STATEMENT OF SCIENTIFIC OUTREACH AND ADVOCACY

Starting January 2024, the *Statement of Scientific Outreach and Advocacy* is no longer part of the application.

12. LETTERS OF RECOMMENDATION (7.1)

In the Letters of Recommendation section, list the name, title, and email addresses of three individuals, ***other than* the *designated mentor(s)* on this application,** who can critically appraise your qualifications. You will also provide this contact information in ProposalCentral so that they can access the site to upload their letters. There are specific instructions on the site for applicants and designated recommenders.

Carefully select those individuals who will provide letters on your behalf. Ideally, letters will be provided by a graduate mentor, a member of a former dissertation committee, and a former research mentor. The letters should address the applicant's character, motivation, maturity, general knowledge, research and problem-solving skills, originality, any specialized experience, and training potential.

You cannot submit your application until these letters have been provided on ProposalCentral.

For Resubmissions Only: Letters of recommendation can be reused if the application is resubmitted within a calendar year of the initial proposal. However, in order to resubmit your application, your recommenders must upload the letters in ProposalCentral again.

PART II - TRAINING AND MENTORING PLAN AND MENTOR

Sections 13-17 must be prepared by the primary mentor (even if there are additional mentors).

A **Mentor** assists in the scientific and professional development of the mentee. Additional mentors may be added if needed to support the training and development of the applicant. Personnel serving in an advisory capacity, but not as a mentor as defined above may also be included in the mentoring and training plan. Their role should be detailed, but they do not need to be designated as a mentor, nor do they need to provide a letter of support.

13. PROPOSED TRAINING AND MENTORING (PAGE 8.1)

In 3 pages or less, describe the training and mentoring plan proposed for the applicant covering the full period of training requested, including all phases of training, research, and didactic. Describe how this plan is tailored for the applicant. Mentors are encouraged to include a timeline for the training plan. The primary mentor should describe the roles of all additional mentors in the training plan, if applicable.

This information will be used to evaluate the quality of the training experience and is an integral part of the overall assessment of the application. To aid in this evaluation, consider including the following information:

- The number of postdoctoral fellows and graduate students in the research team, and, if applicable, indicate approximately how many graduate students and fellows have completed their training in the mentor's research team during the past 3-5 years, and their career outcomes.
- The importance of the proposed research to cancer.
- Whether the proposed research plan was prepared independently by the applicant or in collaboration with you.

14. MENTOR COMMITMENT LETTER (PAGE 9.1)

A letter of commitment must be provided from the primary mentor. The letter should include an assessment of the Candidate's research, ability and potential, motivation, ability to plan and conduct research, knowledge of the field of study, and ability to work as a member of a research team. Letters may also include other attributes of the Candidate such as character or motivation. Additional mentors can provide a separate letter of support. All letters should be combined into a single PDF and uploaded as the designated attachment type with the primary mentor's letter appearing first.

15. FACILITIES AVAILABLE (PAGE 10.1)

In 3 pages or less, describe the facilities available for the training program proposed.

16. BIOGRAPHICAL SKETCH OF MENTOR(S) (PAGE 11.1)

All mentors must complete the NIH Biosketch template, following the formats and instructions provided by the NIH. The Biographical Sketch **may not exceed 5 pages**. Biosketches of any additional mentors should be placed after the biosketch of the primary mentor, combined into one PDF, and uploaded.

Note: If the NIH has modified the NIH Biosketch, applicants may use the newly modified template, or the template provided in ProposalCentral

17. RESEARCH SUPPORT OF MENTOR (PAGE 12.1)

For the primary mentor only, list all active and pending grant support, including granting agency, title of project, direct costs (clearly indicate whether the amount reflects per year or total), and term of the award.

18. COMPLIANCE STATEMENTS (PAGE 13.1)

See the Compliance Statement section of the Research Scholar Grant (RSG) instructions for guidance on completing this template.

19. APPENDIX TO APPLICATION

In addition to the application templates, other key documents may be uploaded and submitted as part of the application. However, applicants are encouraged to include only highly relevant supporting documents. Appended materials may include:

- Correspondence with ACS confirming eligibility (if applicable)
- Recent reprints or preprints (optional)
- Clinical protocols (if applicable)

It is not necessary to number the pages of the Appendix, but list in order by category, (i.e., reprints, preprints, etc.), at the bottom of the Table of Contents.

REVIEWER GUIDELINE CRITERIA

Provided below are the guidelines used by reviewers to evaluate Postdoctoral Fellowship applications. These are meant as general guidelines and are provided here as an aid for preparing your application.

1. CANDIDATE

Critically evaluate the qualifications of the applicant considering the following items: goals and commitment to cancer research; past education; past training (board-eligible or board-certified); past research experience; number and impact of previous publications; and overall suitability of the candidate for this award. Assess whether the fellowship broadens the training and experience of the applicant beyond what was obtained in their graduate work and aligns with the applicant's stated career goals.

Provide an assessment of the confidential letters of recommendation, including research ability and potential, ability to plan and conduct research, knowledge of the field relevant to the proposed work, ability to work as part of a team, and personal characteristics. To maintain confidentiality, the evaluation of the recommendation letters is not shared with the applicant.

2. REPLY TO PREVIOUS REVIEWS [IF APPLICABLE]

Note whether this is a resubmission and evaluate the adequacy of the response to the prior critiques.

3. OVERVIEW OF FELLOWSHIP RESEARCH PLAN

Provide a brief overview of the project. A postdoctoral fellow's research is not expected to reflect the breadth and depth of a senior scientist; nevertheless, the research plan must be fundamentally sound and well-justified.

4. RESEARCH PLAN – SIGNIFICANCE AND CANCER RELEVANCE

Does the project address an important problem or a critical barrier in the field? How will successful completion of the aims change the concepts, methods, technologies, treatments, services, or interventions that drive this field? Is the proposed research important to cancer research? If appropriate, describe how the project contributes to promoting cancer health equity? How is this research relevant to persons at risk for, or living with, cancer or their family members/caregivers? The relevance to cancer may be indirect, but the connection must be clearly articulated by the applicant.

5. RESEARCH PLAN – APPROACH

Are the hypothesis and aims appropriate for answering the research question(s)? Is the overall strategy, methodology, analyses and timeline well-reasoned and appropriate to accomplish the specific aims? Are potential problems, alternative strategies, and benchmarks for success presented? If the project is in the early stages of development, will the strategy establish feasibility? How will particularly risky aspects be managed?

6. RESEARCH PLAN – CANDIDATE/RESEARCH TEAM

Does the PI and research team (including mentors) have the training and experience needed to carry out the proposed research? Do team members have complementary skills and qualifications needed for successful implementation and analysis of the proposed research? Has the research team previously collaborated on research or publications? If not, are members of the proposed study team appropriate to carry-out the research?

7. RESEARCH PLAN – ENVIRONMENT AND RESOURCES

Will the scientific environment in which the work will be done contribute to the probability of success? Are the institutional support, equipment and other physical resources available to the investigators adequate for the project proposed? Will the project benefit from unique features of the scientific environment, populations studied, or collaborative arrangements?

8. PROPOSED TRAINING AND MENTORING PLAN AND RESOURCES FOR TRAINING

Evaluate the appropriateness of the training activities, including didactic and non-didactic, in enhancing the research training of the applicant, and their relevance to the applicant's career objectives. Assess the suitability of the academic and research environment for the proposed training program. Consider departmental and other institutional personnel, ongoing research and other relevant activities, facilities, resources, access to any populations or individuals to be studied, relevant collaborative relationships, etc.

9. TRAINING EXPERIENCE, BIOSKETCH(ES), SUPPORT, AND COMMITMENT LETTER(S) OF MENTOR(S)

Evaluate the appropriateness of the mentor's(s') experiences for their respective roles in the proposed training and mentoring plans. Consider the qualifications and reputation of the mentor(s) in cancer research and in training cancer researchers, the commitment of the mentor(s) to the plan, and the overall appropriateness of the mentor(s) and mentor(s) qualifications for the proposed research project. Consider the funding support of the mentor. This is critical because the budget for a PF award is predominantly stipend support.

10. COMPLIANCE STATEMENTS

NOT TO BE CONSIDERED IN SCORING

- **Human Subjects.** If applicable, evaluate the plans for protection of human subjects from research risks justified in terms of the scientific goals and research strategy proposed. For example, are the potential benefits and risks to subjects articulated reasonable and appropriate given the study design? Are the plans for conducting sub-analysis by group, data security and confidentiality, biohazards, and data and safety monitoring adequate?
- **Inclusion of Women, Minorities, and Children.** When the proposed project involves human subjects, evaluate the adequacy of the proposed plans for inclusion or exclusion of minorities, male and female genders, as well as children.
- **Vertebrate Animals.** Evaluate the involvement of live, vertebrate animals as part of the scientific assessment according to the following points: 1) necessity for the use of the animals and species proposed; 2) appropriateness of the strains, ages, and gender of the animals; 3) justifications for, and appropriateness of, the numbers of animals proposed.
- **Hazards.** Assess whether materials or procedures proposed are potentially hazardous to research personnel and/or the environment, and if needed, determine whether adequate protection is proposed.

ACS PROFESSOR AWARD
INSTRUCTIONS

Note: In 2024, the Research Professor and Clinical Research Professor Awards were combined into the ACS Professor Award. All applications are reviewed together once annually by a standing peer review committee.

Program Contact: Kathy Goss, PhD, Senior Scientific Director (kathleen.goss@cancer.org)

LETTER OF INTENT (LOI)

Interested applicants for the Professor Awards must first submit a 2-3-page letter of intent (LOI), a biographical table, and a *curriculum vitae* via ProposalCentral. The LOI should briefly describe the candidate's seminal contributions to cancer research, their leadership roles in the cancer research community, their track record of mentoring individuals who have become successful in cancer research. The biographical table should highlight scholarly achievement.

The LOI for the ACS Professor Award must be submitted between June 1 and September 1.

Candidates will be notified by email if their LOI is accepted or rejected. If the LOI is accepted, the candidate will then have access to all application materials in ProposalCentral.

NEW APPLICATION

ACS Professor candidates whose LOI was approved must submit their application by the December 1 deadline. **New applications** must provide all the information requested in Templates 1.1 through 8.1.

1. APPLICATION TEMPLATES

An application consists of several sections that must be uploaded before the application is submitted. Templates for these sections are available once an application is started on ProposalCentral.

The templates must be downloaded to a computer and completed offline. Detailed below are the instructions for completing the individual sections. *Once complete each template must be converted into .pdf documents before being uploaded. Please see ProposalCentral's FAQ or call support at 1-800-875-2562 if you need assistance.*

PART I

2. TABLE OF CONTENTS (PAGE 1.1)

The Table of Contents is pre-numbered and should be limited to 2 pages, including an itemized list of contents in the Appendix.

3. BIOGRAPHICAL INFORMATION OF APPLICANT (PAGE 2.1)

A. Personal Statement *(not to exceed 2 pages)*

Describe why you are well suited to be named an American Cancer Society Professor. Relevant factors include how you have been a demonstrated thought leader in cancer research, directing a well-funded, collaborative, and innovative cancer research program, and your commitment to serving as an ACS champion. If relevant, include experiences and impact engaging with patient advocates and organizations.

B. Mentorship and Leadership *(not to exceed 2 pages)*

Describe how you have enhanced your field in your role as a mentor and leader. Leadership and service activities should include those at the community, institutional, national, and international levels. For mentorship, provide specific individuals you have trained directly, their current positions, and describe how your training or mentorship facilitated and advanced their cancer research career growth, noting how any have gone on to become leaders of their fields themselves. Also note those

who you have had a more indirect role in their training but have significantly impacted their careers and fields.

C. Key Scientific Contributions *(not to exceed 4 pages)*

Describe your seminal research contribution(s) that you and your research program have made to cancer research. Note: A **seminal cancer research contribution** is defined as work led by the applicant that has created a new field, transformed a field, shifted a scientific paradigm, or dramatically altered the understanding of the causes, prevention, detection, diagnosis, or treatment of cancer, or its clinical application For each seminal contribution, provide: the historical context that frames the scientific problem, the key finding(s) of your research, the impact of those finding(s) on progress within the field or their application to medicine or technology, and your specific role in the described work. Provide up to four peer-reviewed publication references relevant to each contribution.

4. RESEARCH SUPPORT (PAGE 3.1)

List all sources of research support, federal, non-federal or institutional, available to you through research grants, cooperative agreements, contracts, fellowships, and other means. Describe all awards, active support, and all applications pending review. Provide the name of the granting agency, grant number, project title, award amount and term, your role (e.g., principal investigator, co-investigator, collaborator), and your percent effort.

5. STRATEGIC PLAN (PAGE 4.1)

This section should not exceed 6 pages.

Describe your strategic plan for the term of this award, and the impact your future research and clinical (if applicable) activities will have on your research field. This could also include plans to enhance research, mentoring, and/or patient care or support but, importantly*, should reflect your vision for the field, how your research program contributes to that vision, and the specific work supported by an ACS Professor Award.*

The research or research-related clinical activities proposed **should not** simply be a continuation of your current work. The strategic plan should describe an overview of strategies to advance your program of research and mentorship in novel but feasible ways that represent a creative and innovative use of funds leading to broader impact to move your research field forward. You are encouraged to identify the gaps and challenges in your field and concisely summarize and critically evaluate related work done by your team and others. Specifically state how you plan to strategically fill this void to advance scientific knowledge or aspects of clinical practice that are important for a better understanding of cancer or benefiting cancer patients. Articulate your vision for how you will advance your research discipline in the next five years, acknowledging top challenges in the field.

Describe the impact the ACS Professor Award would have on your research program and outline how it will enable you to advance your research program and the field in ways that would not be possible otherwise. This strategic plan should clearly illustrate your thought leadership and address the proposed project's innovation, novelty, and feasibility.

6. REFERENCES (PAGE 5.1)

The list of references should correspond to the citations listed in the sections starting on Page 4.1. References should be listed numerically in order of their appearance in the text. Each literature citation should include the names of all authors, year of publication, the title of the article, the name of the book or journal, volume number, and inclusive page numbers. There is **no page limit** for the list of references.

7. LETTERS OF RECOMMENDATION (PAGE 6.1)

A total of five letters of recommendation are required. List the name, title, and current institution and department of the five individuals from whom you have requested letters of recommendation. Two letters must be from mentees, ideally one current and one former; lease designate the mentees on the template.

Applicants may also include up to an additional two letters from individuals in the non-scientific community who could speak to contributions in outreach, engagement and/or advocacy.

You must email each referee through ProposalCentral so that they can access the site to upload their letters. There are specific instructions on the site for applicants and designated recommenders. You will see when the letters have been sent in, but they are submitted blindly, and **you will not be able to submit the application** until all the letters have been provided to the site. Please impress upon your referees the importance of personalizing their letters.

PART II

Pages 7.1 and 8.1 must be prepared by the department head, dean, or equivalent official.

8. INSTITUTIONAL AND/OR DEPARTMENTAL COMMITMENT (PAGE 7.1)

Using the template provided, describe the institution's commitment to the applicant and their research program.

9. ENVIRONMENT (PAGE 8.1)

Briefly describe the environment available as it relates to the research program and proposed strategic plan of the candidate.

10. APPENDIX

All supplementary materials (C.V., biographical table, key reprints, preprints, etc.) included in the Appendix should be listed in the Table of Contents (Page 1.1 of the application).

- **Biographical Table (Required)**
  Include the Biographical Table that was submitted with your Letter of Intent in the Appendix of your full application, plus any noteworthy updates. The template is provided in the application materials.
- **Curriculum Vitae (Required)**
  Your complete and updated curriculum vitae, which includes leadership roles, mentorship, honors, awards, and all publications/citations.

ACS PROFESSOR RENEWAL APPLICATIONS ONLY

ACS Professors who are in the final year of their award will submit their renewal application in ProposalCentral, using the ACS Professor Renewal Application grant mechanism.

Renewals are due December 1.

Required Templates for Renewal Applications:

1. TABLE OF CONTENTS (PAGE 1.1)

The Table of Contents is pre-numbered and should be limited to 2 pages, including an itemized list of the contents of the Appendix.

2. STRATEGIC PLAN (PAGE 2.1)

This section should not exceed 6 pages.

- Articulate your strategic vision of how you will continue to advance your research field for the next five years.

- Identify the top gaps or challenges in the field and describe the innovative and feasible approaches you will use to address them.
- Describe how you will maximize productivity and overcome any real or perceived barriers that might impact the continued success of your research program (e.g., changes in institution, research directions, collaborators, grant support, other responsibilities, etc.).
- Indicate how you will continue to be a highly visible leader through mentoring and service to both the American Cancer Society and your communities to move your proposed work forward.

3. REFERENCES (PAGE 3.1)

The list of references should correspond to the citations listed in the sections starting on Page 2.1. References should be listed numerically in order of their appearance in the text. Each literature citation should include the names of all authors, year of publication, the title of the article, the name of the book or journal, volume number, and inclusive page numbers. There is **no page limit** for the list of references.

4. ACS PROFESSOR AWARD PROGRESS REPORT (PAGE 4.1)

The renewal should focus on both the success of the funded project along with accomplishments of your entire research program during the 5 years of support through the ACS Professor Award.

A. Non-technical Progress Report *(250-word limit)*

The non-technical progress report is provided to American Cancer Society staff and may be given to donors or other Society supporters who do not have a scientific or oncology background. Therefore, please ensure the non-technical progress report is written in lay language. Start your report with one or two sentences stating the relevance of the project to cancer or to specific cancer type(s). Then briefly describe your major research accomplishments to date with particular emphasis on discoveries you believe are novel or are seminal contributions to the understanding or treatment of cancer. Explain how the successful outcome of your ACS Professor project has impacted or could impact cancer patients, treatment, prevention, early detection, and/or understanding of the disease.

Information submitted as part of the non-technical progress report may be made available to the general public; therefore, do not include proprietary/confidential information.

B. Technical Progress Report *(3-page limit)*

Summarize the specific aims and your project progress to date, including significant scientific advances, clinical translation or implementation, and describe how they are moving your research program and the field forward.

C. Scholarship and Research Outputs

Provide the following types of scholarship and research outputs over the last five years, both those related to your specific funded ACS Professor project and overall research program **over the last five years.** *Please **bold** those outputs that are a direct result of the funded ACS project.*

1. Oral presentations: Provide the conference title, location, date and indicate if the presentation was in a plenary session.
2. Publications: Provide full citation of published or in press journal articles, reviews, book chapters, etc. (do not include abstracts). *Please **bold** the publications in which ACS was acknowledged.*
3. Patents granted or applied for
4. New drugs, diagnostics, prognostics, devices, etc.

5. Adoption of new protocols/policies/clinical practices by community/agency/institutions.
6. Other (specify)

D. Training and Mentorship *(3-page limit)*

Describe how you have enhanced the field in your role as a mentor. Indicate the number of individuals you have trained **in the last five years** and their current job titles. If trainees are in academic positions, include their institutions and academic rank. For all trainees, briefly describe how your mentorship has facilitated and advanced their cancer research career development.

E. Leadership and Service *(3-page limit)*

Provide specific examples of service to the national and international scientific and/or patient communities **from the past five years.**

F. Engagement with the American Cancer Society *(3-page limit)*

Describe ACS activities you have been involved in at the local and national levels, your role, the audience, and when you participated.

Examples of specific engagement activities include but are not limited to:

- Participation in ACS events/programs such as ACS-sponsored scientific conferences, annual grantee meetings, ACS national roundtable membership or meetings, local community or distinguished fundraising events, etc.
- Serving as an advisor or thought leader for specific ACS programs or initiatives.
- Collaboration with ACS intramural researchers or patient support teams for program and services implementation.
- Engagement of ACS staff or volunteers in events at your institution.
- Presentations to donors or ACS staff or volunteers.
- Hosting tours of your research facilities for ACS staff, volunteers, and/or donors.
- Supporting ACS Cancer Action Network (CAN) advocacy efforts through membership, speaking engagements, legislator visits, etc.
- Participation in other community events and programs through other partners or organizations.

G. Other Funding

Describe research funding received subsequent to being awarded the ACS Professor Award noting those that are specifically a result of the funded project. For each grant, provide the title, number, granting institution, award amount, and award term.

H. Honors and Awards

List any honors, awards or special recognition you have received for your research or related activities **in the last 5 years**.

5. APPENDIX

All supplementary materials (C.V., key reprints, preprints, etc.) included in the Appendix should be listed in the Table of Contents (Page 1.1 of the application).

Renewal applications must include the following required appendices:

- Updated biographical table, the template for which is provided in the application materials.
- Updated curriculum vitae, which includes leadership roles, mentorship, honors, awards, and all publications/citations.

REVIEWER CRITERIA

Evaluation of New ACS Professor Award Applications

These are meant as general guidelines and are provided here as an aid for preparing your application. Each application is reviewed by three scientific reviewers and a Community Research Partner, who evaluates the general audience summary and cancer relevance. Note: Critiques are not shared with the applicant. Upon request, the Program Office will schedule a call to discuss the strengths and opportunities for improvement identified by the reviewers with the applicant.

1. INVESTIGATOR

Has the applicant made significant seminal cancer research contributions to their field (a key requirement for consideration of this award)? If so, assess the impact, to date, of the contributions. Is the investigator regarded as a thought leader? Is the applicant continuing to be a leader in their area(s) of expertise? Does the investigator have a strong track record of high-impact publications, accomplishments, and prestigious awards and honors? Is the investigator a leader in the cancer research community? Consider the content of the Letters of Recommendation and the summary table of scholarship in the Appendix when critically evaluating the applicant.

2. RESEARCH PROGRAM

Evaluate the significance, cancer relevance, innovation, and novelty of the investigator's overall research program. Does the research program have impressive and sustained extramural funding? Has the applicant identified and adequately described the seminal research contribution(s) that their research program has made to cancer research? In what innovative way(s) is the applicant's cancer research program addressing a critical unmet need? Does this program have a likelihood of continued high-impact discoveries for cancer research?

3. STRATEGIC PLAN

The research plan is not intended to be as specific or detailed as a typical research grant, but it must be scientifically sound, justified, and include a novel aspect of work for the investigator. The award is intended to support the testing of innovative ideas, not simply to supplement ongoing projects. Evaluate the significance, cancer relevance, innovation, and novelty of the proposed strategic plan. Has the applicant identified an unmet need or gap in the field, and described how their strategic plan aims to fill the void? Is the applicant proposing a creative and well-justified use of the discretionary funding for this award? Has the applicant adequately articulated their vision for advancing their research discipline in the next 5 years? Will this vision clearly advance scientific knowledge, translation or clinical practice for cancer and cancer patients? Does the plan adequately balance a visionary plan and some specific details on how the resources of this award will be used to support the vision?

4. TRAINING AND MENTORSHIP

Evaluate the evidence that the applicant has successfully mentored trainees, colleagues, etc. and remains committed to mentoring. This may include:

- The numbers of graduate students/residents and postdoctoral fellows currently mentoring and that have gone on to successful positions in cancer research.
- The number of junior faculty members who have been promoted and/or tenured.
- The number of clinician-scientists who have been able to move between the laboratory and the bedside or community to improve cancer interventions.
- Developing educational and training activities to support individuals pursuing cancer research and care.

5. SERVICE

Evaluate the applicant's commitment to service in the scientific and broader communities. This could be demonstrated in many ways including scientific leadership at an institutional, national or international level, community outreach and engagement, and advocacy. While this could be demonstrated through service to the American Cancer Society, this is not required. A lack of prior participation in Society-sponsored activities should not be viewed as a weakness. Will the applicant be a strong representative of and spokesperson for the American Cancer Society?

Evaluation of Renewal ACS Professor Award Applications:

These are meant as general guidelines and are provided here as an aid for preparing your application. Note: Critiques are not shared with the applicant. Upon request, the program office will schedule a call to discuss the review with the applicant.

1. PROFESSOR, RESEARCH PROGRAM, AND PROPOSED STRATEGIC PLAN

Briefly describe the Professor's major research accomplishments over the past 5 years. Evaluate the Professor's strategic vision for how they will continue to advance their research discipline for the **next five years.** How well do they identify the top challenges in the field and what novel and innovative approaches will they use to address them? Evaluate their productivity and their continued leadership in their field. Do they continue to be a thought leader in the field of study?

2. MENTORSHIP AND SERVICE

Evaluate the ACS Professor's continued commitment to training and mentorship. Assess the ACS Professor's service to the scientific and broader cancer community, including their role as a champion and spokesperson for the ACS and Extramural Discovery Science over the **past five years.**

APPENDIX A: EXAMPLES OF GENERAL AUDIENCE SUMMARIES

Note: Some grant mechanisms do not require General Audience Summaries. If required for the application, there will be a field for the General Audience Summary on ProposalCentral.

1. Clinical and Epidemiology Research

Title: Characterization of Early Breast Cancer by Contrast-Enhanced MRI

Magnetic resonance imaging (MRI) shows great promise as a supplementary tool to mammography and clinical exam for diagnosis and staging of breast cancer. Most research in this area has focused on diagnosis of invasive breast cancer. We have been interested in improving the ability of MRI to characterize early cancer, particularly at the pre-invasive stage. At the present time, the accuracy of MRI to for diagnosing pre-invasive breast disease, or ductal carcinoma in situ (DCIS) is low, mainly because the pattern of contrast enhancement for DCIS is difficult to distinguish from that of benign proliferative disease in the breast. An important emerging application for MRI is screening and surveillance in women at increased risk of developing breast cancer. There are now genetic tests and statistical models that can accurately predict a woman's risk. However, there are few effective options for prevention and early detection. Women with a genetic risk of developing cancer are also likely to develop cancer at an early age when breast tissue is dense and mammography effectiveness is limited. MRI is very sensitive to small cancers and not limited by breast density. The studies we propose will address the specificity of MRI for early cancer and will have direct application to MRI screening and surveillance methods. We believe that in the future, a better understanding of the biological basis of patterns on MRI may lead to new methods for identifying breast tissue that is at risk for developing cancer.

2. Cancer Control and Prevention Research

Title: Distrust as a Barrier to Cancer Screening and Prevention

Over the past 40 years technological advancements have had a major impact on medicine in the United States. These advancements have led to the development of effective methods in cancer screening and, most recently, cancer prevention. These methods have the potential to greatly reduce the burden of cancer but are being threatened by the rising levels of distrust of physicians and the health care system. This project will investigate the issue of distrust with the goals of increasing understanding of health care related distrust in the US today and investigating the relationship between health care related distrust and attitudes, intentions, and behaviors regarding cancer screening and prevention.

We will focus on a population composed of African American, Caucasian, and Hispanic women to elucidate the relationship between health care related distrust and historically disadvantaged ethnic/racial minorities. These women will be between the ages of 40 and 70, a group for whom effective cancer screening is available and recommended. In order to determine the patterns of health care related distrust and association between distrust and attitudes towards cancer screening and prevention, we will conduct a population-based telephone survey in the United States. We will examine several types of cancer related health behaviors and investigate how distrust may act as a barrier to adopting these behaviors. These behaviors will include adherence with current cancer screening recommendations for breast, cervical and colon cancer as well as willingness to use new interventions for cancer screening and prevention.

This project builds upon our prior work that has provided a more in-depth understanding of health care related distrust and established the association between health care related distrust and use of Pap smear, clinical breast examination, and influenza vaccination in the City of Philadelphia. This grant will allow us to identify the factors and beliefs the population may have about health care and physicians and determine what role distrust plays as a barrier to cancer screening and prevention.

These findings will have the direct potential to improve the delivery of effective cancer screening and prevention behaviors.

3. Developmental Research

Title: Regulation of Chromosome Segregation in Human Cells

The information which controls all the operations of a cell is contained within its DNA, which is packaged into units called chromosomes. When a cell divides, these chromosomes must be duplicated. During duplication each chromosome is connected to its copy, therefore, the duplicated chromosomes must be properly unlinked from one another, so that each new cell receives or inherits exactly the same genetic information as all of the other cells. Errors in this process, known as chromosome segregation, result in extra chromosomes in some cells and too few chromosomes in others. Such errors are widespread among most cancer cells and are believed to promote the growth and progression of disease. Our long-term goal is to understand the molecules and mechanisms that control chromosome segregation in human cells. Towards this aim, we have begun to analyze a critical enzyme, appropriately named separase, which functions like a “molecular scissors” to split apart linked chromosomes as cells prepare to divide. Separase acts irreversibly in this process and thus needs to be controlled very precisely, to avoid potentially catastrophic errors. In this proposal, we will investigate the ways in which separase is turned on and turned off during cell division. Using a series of complementary approaches, including a novel method we invented several years ago for manipulating genes inside human cells, we will define how the chromosome-splitting process is controlled at the molecular level, and how that control ensures the high level of accuracy of chromosome segregation. Ultimately, we hope to translate this knowledge into new strategies for detecting and eliminating cells that cannot segregate their chromosomes accurately, before they have the opportunity to develop into cancers.

APPENDIX B: EXAMPLE OF STRUCTURED TECHNICAL ABSTRACT

Title: Structure and Function of DNA Replication Origins in Yeast

Background: The initiation of DNA replication marks a crucial step in the eukaryotic cell cycle. Entering S phase commits the cell to a full round of cell division. Studies in the budding yeast, *Saccharomyces cerevisiae*, have driven the field during the past decade, although our data and work by others suggest that many aspects of DNA replication are highly conserved in all eukaryotes, including humans. Origin structure has been best described for autonomously replicating sequence (ARS) function. Different origins have a different domain organization, and it is unclear how these differences impact the initiation of DNA replication. Recently, we have shown that initiation events occur at distinct nucleotide positions in yeast, a feature that appears to be conserved in humans.

Objective/Hypothesis: Our preliminary studies indicate that origin organization dictates where replication initiates. Therefore, we propose to define how features of ARS elements contribute to the precise initiation mechanism.

Specific Aims: (1) To determine whether chromosomal origins other than ARS1 initiate DNA replication at a distinct site; (2) to identify what determines the replication start point within origins; and (3) to determine if chromatin structure affects the initiation pattern at ARS elements.

Study design: Using a technique that we have recently developed, replication initiation point mapping, we will first map the nucleotide positions at which replication initiates in wild-type and mutant ARS elements. To address the issue of what role chromatin configuration plays in origin activation, we will analyze the nucleosome organization of different ARS loci in relation to those regions where the parental DNA double-strand unwinds first. We will correlate the sites of initiation with sites of unwinding and place those into context with the overall chromatin structure at a given chromosomal ARS locus.

These studies will contribute to our understanding of the mechanism underlying origin activation in yeast and will aid us in understanding origin function in more complex, higher eukaryotes. Since uncontrolled origin activity directly translates into uncontrolled growth, the long-term goal of our studies is to apply our knowledge and techniques to human DNA replication in order to inhibit proliferation of cancerous cells.

APPENDIX C: EXAMPLES OF PROJECT ALIGNMENT TO RESEARCH PRIORITIES

Example 1

Epiluminescent microscopy is used for the clinical evaluation of pigmented skin lesions, including early-stage melanoma. However, several common benign skin conditions can sometimes exhibit hyperpigmentation leading to unnecessary surgical excision. We have recently discovered that amplification of gene X is associated with early-stage melanoma. Based on encouraging preclinical validation, we propose to develop a non-invasive, light-based companion diagnostic assay to identify early-stage melanoma (i.e., during an annual skin exam). This concept, which is technically and conceptually innovative, highly aligns with the ACS priority area screening and early detection.

Selection of Priorities
Screening and Diagnosis: 100%

Example 2

The focus of this investigation is to elucidate how cancer stem cells in triple negative breast cancers resist chemotherapies with the goal of developing new strategies for anti-cancer drug design (Treatment as the primary priority). The mechanistic insights we glean from the ability of cancer stem cells to continuously self-renew could also lead to the development of improved prognostic and diagnostic markers (Screening and Diagnosis) as well as a better understanding of the cells that drive tumorigenesis and disease recurrence (Etiology).

Selection of Priorities
Etiology: 25%
Screening and Diagnosis: 25%
Treatment: 50%

Example 3

Underlying genetic mutations in leukemia cells are a significant factor in the risk and outcomes in childhood acute leukemia. One specific type of genetic mutation is found in multiple subtypes of acute leukemia associated with a poor prognosis. In this project, we will characterize this and other mutations in blood samples from acute leukemia patients in a large-scale study to identify potential markers that can be used to diagnose acute leukemia (Screening and Diagnosis). This analysis will also be used to identify proteins specific to acute leukemia that may be targeted therapeutically (Treatment).

Selection of Priorities
Screening and Diagnosis: 85%
Treatment: 15%

Example 4

Children with refractory or relapsed solid tumors remain essentially incurable with conventional chemotherapy and radiation, and the effects of these treatments are life threatening. Current “tumor-specific” treatments, such as infusion of natural killer immune cells, have had limited success. This project will use several approaches to improve refractory solid tumor by testing an antibody recognized neuroblastoma and osteosarcoma tumor cells. Success of any of these approaches will be a breakthrough for children with refractory or relapsed neuroblastoma and osteosarcoma.

Selection of Priorities
Treatment: 100%

Example 5

Prostate cancer (PCa) diagnosis and mortality rates are higher in African American (AA) men compared to Caucasian-American (CA) men. AA patients respond poorly to treatments, and the PCa tumors are more aggressive than those in CA patients. We have identified a cellular dysfunction in tumors from AA PCa patients that may contribute to treatment in AA patients. In this project we will screen AA PCa tumors for this dysfunction (Etiology) and determine if treatments that target the cellular dysfunction in AA PCa cells can help improve treatment outcomes for AA patients (Treatment).

Selection of Priorities
Etiology: 20%
Treatment: 80%

Example 6

Lung cancer survivors have a high symptom burden. Prior research has demonstrated that early palliative care improves quality of life. Cancer rehabilitation plays an important role in survivorship care by facilitating participation in daily living. This study involves collaboration between palliative care and cancer rehabilitation teams. We will compare a novel home-based intervention to in-person ambulatory rehabilitation and evaluate objective measures of pulmonary functioning, physical functioning, and health related quality of life. This aligns with the ACS survivorship priority.

Selection of Priorities
Survivorship: 100%

Example 7

ACS believes that everyone should have a fair and just opportunity to prevent, find, treat and survive cancer. Where you live and your income may impact the ability to receive high quality cancer care. Our preliminary data reveal that distance from a primary care provider impacts screening rates for breast, lung and colorectal cancer. To increase screening rates in a diverse group of low wage workers, we will test a culturally tailored worksite intervention for farm and poultry workers and use a waitlist control group. The social determinants of health we believe are drivers of differential screening outcomes include low socioeconomic status, inadequate health insurance coverage and low health literacy.

Selection of Priorities
Health Equity: 100%

Example 8

According to the ACS Facts and Figures, colorectal cancer (CRC) is the third most common cancer and third leading cause of death among men and women in the US. Trend data, especially over the last decade, reveals increased CRC incidence for individuals under the age of 50. This study aims to better understand the birth cohort effect and involves mixed methods to better understand factors associated with early onset CRC. Our findings will be used to inform a larger tailored intervention to improve early diagnosis of CRC under the age of 50 years. This aligns with the ACS research priority for screening and diagnosis.

Selection of Priorities
Screening and Diagnosis: 100%

APPENDIX D: CLASSIFICATION CATEGORIES - AREAS OF RESEARCH

The areas of research are based on seven broad categories called the Common Scientific Outline (CSO) developed by the International Cancer Research Partnership (ICRP):

1. Biology
2. Etiology
3. Prevention
4. Early Detection, Diagnosis and Prognosis
5. Treatment
6. Cancer Control, Survivorship and Outcomes Research

Applicants are asked to select from the following codes:

1 – BIOLOGY

Research included in this category looks at the biology of how cancer starts and progresses as well as normal biology relevant to these processes.

1.1 **Normal Functioning**

Examples of science that would fit:

- Developmental biology (from conception to adulthood) and the biology of aging
- Normal functioning of genes, including their identification and expression, and the normal function of gene products, such as hormones and growth factors
- Normal formation of the extracellular matrix
- Normal cell-to-cell interactions
- Normal functioning of apoptotic pathways
- Characterization of pluripotent progenitor cells (e.g., normal stem cells)

1.2 Cancer Initiation: Alterations in Chromosomes

Examples of science that would fit:

- Abnormal chromosome number
- Aberration in chromosomes and genes (e.g., in chronic myelogenous leukemia)
- Damage to chromosomes and mutation in genes
- Failures in DNA repair
- Aberrant gene expression
- Epigenetics
- Genes and proteins involved in aberrant cell cycles

1.3 Cancer Initiation: Oncogenes and Tumor Suppressor Genes

Examples of science that would fit:

- Genes and signals involved in growth stimulation or repression, including oncogenes (Ras, etc.), and tumor suppressor genes (p53, etc.)

- Effects of hormones and growth factors and their receptors such as estrogens, androgens, TGF-beta, GM-CSF, etc.
- Research into the biology of stem cell tumor initiation

1.4 Cancer Progression and Metastasis

Examples of science that would fit:

- Latency, promotion, and regression
- Expansion of malignant cells
- Interaction of malignant cells with the immune system or extracellular matrix
- Cell mobility, including detachment, motility, and migration in the circulation
- Invasion
- Malignant cells in the circulation, including penetration of the vascular system and extravasation
- Systemic and cellular effects of malignancy
- Tumor angiogenesis and growth of metastases
- Role of hormone or growth factor dependence/independence in cancer progression
- Research into cancer stem cells supporting or maintaining cancer progression
- Interaction of immune system and microbiome in cancer progression

1.5 Resources and Infrastructure

Examples of science that would fit:

- Informatics and informatics networks
- Specimen resources
- Epidemiological resources pertaining to biology
- Reagents, chemical standards
- Development and characterization of new model systems for biology, distribution of models to scientific community or research into novel ways of applying model systems, including but not limited to computer-simulation systems, software development, in vitro/cell culture models, organ/tissue models or animal model systems. Guidance note: this should only be used where the focus of the award is creating a model. If it is only a tool or a methodology, code to the research instead.
- Education and training of investigators at all levels (including clinicians and other health professionals), such as participation in training workshops, conferences, advanced research technique courses, and Master's course attendance. This does not include longer-term research-based training, such as Ph.D. or post-doctoral fellowships.

2 – ETIOLOGY

Research included in this category aims to identify the causes or origins of cancer - genetic, environmental, and lifestyle, and the interactions between these factors.

2.1 Exogenous Factors in the Origin and Cause of Cancer

Examples of science that would fit:

- Research into the role of lifestyle factors such as smoking, chewing tobacco, alcohol consumption, parity, diet, sunbathing, and exercise in the origin and cause of cancer or increasing the risk of cancer
- Research into the social determinants of cancer such as crime, housing dilapidation, (poor housing), neighborhood level, socio-economic status, and services and their relationship to cancer incidence and mortality, etc.
- Studies on the effect(s) of nutrients or nutritional status on cancer incidence
- Development, characterization, validation, and use of dietary/nutritional assessment instruments in epidemiological studies and to evaluate cancer risk
- 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 viral regulatory genes associated with cancer causation
- Contextual Factors Contributing to Cancer Incidence (e.g., race/ethnicity, socioeconomic status, neighborhood factors, community factors, built environment)

2.2 Endogenous Factors in the Origin and Cause of Cancer

Examples of science that would fit:

- Free radicals such as superoxide and hydroxide radicals
- Identification /confirmation of genes suspected of being mechanistically involved in familial cancer syndromes; for example, BRCA1, Ataxia Telangiectasia, and APC
- Identification/confirmation of 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.)
- Investigating a role for stem cells in the etiology of tumors

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

Examples of science that would fit:

- Gene-environment interactions, including research into the role of the microbiome
- 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

Examples of science that would fit:

- Informatics and informatics networks; for example, patient databanks
- Specimen resources (serum, tissue, etc.)
- Reagents and chemical standards
- Epidemiological resources pertaining to etiology
- Statistical methodology or biostatistical methods
- Centers, consortia, and/or networks
- Development, characterization and validation of new model systems for etiology, distribution of models to the scientific community or research into novel ways of applying model systems, including but not limited to computer-simulation systems, software development, in vitro/cell culture models, organ/tissue models or animal model systems. Guidance note: this should only be used where the focus of the award is creating a model. If it is only a tool or a methodology, code to the research instead.
- Education and training of investigators at all levels (including clinicians and other health professionals), such as participation in training workshops, conferences, advanced research technique courses, and Master's course attendance. This does not include longer term research-based training, such as Ph.D. or post-doctoral fellowships.

3 – PREVENTION

Research included in this category looks at identifying individual and population-based primary prevention interventions, which reduce cancer risk by reducing exposure to cancer risks and increasing protective factors.

3.1 Interventions to Prevent Cancer: Personal Behaviors (Non-Dietary) that Affect Cancer Risk

Examples of science that would fit:

- Research on determinants of personal behaviors, such as physical activity, sun exposure, and tobacco use, known to affect cancer risk and interventions (including educational and behavioral interventions directed at individuals as well as population-based interventions including social marketing campaigns, environmental supports, and regulatory, policy and legislative changes), to change determinants or to target health inequalities.
- Directed education to specified populations of patients, health care providers, and at-risk groups about cancer risk and prevention and relevant interventions with the intent of promoting increased awareness and behavioral change. This includes communication of lifestyle models that reduce cancer risk, such as communicating smoking and tobacco cessation interventions, genetic counselling, or targeting/addressing health inequalities.

3.2 Dietary Interventions to Reduce Cancer Risk and Nutritional Science in Cancer Prevention

Examples of science that would fit:

- Quantification of nutrients, micronutrients, and purified nutritional compounds in cancer prevention studies
- Development, characterization, validation, and use of dietary/nutritional assessment instruments to evaluate cancer prevention interventions
- Research on determinants of dietary behavior and interventions to change diet, including educational and behavioral interventions directed at individuals as well as population-based

interventions including social marketing campaigns, environmental supports, and regulatory and legislative changes, to change diet

- Education of patients, health care providers, at-risk populations, and the general population about cancer risk and diet
- Communicating cancer risk of diet to underserved populations, at-risk populations, and the general public
- Communication of nutritional interventions that reduce cancer risk
- Nutritional manipulation of the microbiome for cancer prevention

3.3 Chemoprevention

Examples of science that would fit:

- Chemopreventive agents and their discovery, mechanism of action, development, testing in model systems, and clinical testing
- Other non-vaccine, preventive measures such as prophylactic surgery (e.g., mastectomy, oophorectomy, prostatectomy etc.), use of antibiotics, immune modulators/stimulators or other biological agents
- Manipulation of the microbiome for cancer prevention (e.g. fecal transplant)

3.4 Vaccines

Examples of science that would fit:

- Vaccines for prevention, their discovery, mechanism of action, development, testing in model systems, and clinical testing (e.g., HPV vaccines)

3.5 Complementary and Alternative Prevention Approaches

Examples of science that would fit:

- Discovery, development, and testing of complementary/alternative medicine (CAM) approaches or other primary prevention interventions that are not widely used in conventional medicine or are being applied in different ways as compared to conventional medical uses
- Mind and body medicine (e.g., meditation, acupuncture, hypnotherapy), manipulative and body-based practices (e.g., spinal manipulation, massage therapy), and other practices (e.g., light therapy, traditional healing) used as preventive measures

3.6 Resources and Infrastructure Related to Prevention

Examples of science that would fit:

- Informatics and informatics networks; for example, patient databanks
- Specimen resources (serum, tissue, etc.)
- Epidemiological resources pertaining to prevention
- Clinical trials infrastructure
- Statistical methodology or biostatistical methods
- Centers, consortia, and/or networks

- Development and characterization of new model systems for prevention, distribution of models to scientific community or research into novel ways of applying model systems, including but not limited to computer-simulation systems, software development, in vitro/cell culture models, organ/tissue models or animal model systems. Guidance note: this should only be used where the focus of the award is creating a model. If it is only a tool or a methodology, code to the research instead.
- Education and training of investigators at all levels (including clinicians and other health professionals), such as participation in training workshops, conferences, advanced research technique courses, and Master's course attendance. This does not include longer term research-based training, such as Ph.D. or post-doctoral fellowships.

4 – EARLY DETECTION, DIAGNOSIS, AND PROGNOSIS

Research included in this category focuses on identifying and testing cancer markers and imaging methods that are helpful in detecting and/or diagnosing cancer as well as predicting the outcome or chance of recurrence or to support treatment decision making in stratified/personalized medicine.

4.1 Technology Development and/or Marker Discovery

Examples of science that would fit:

- Discovery or identification and characterization of markers (e.g., proteins, genes, epigenetic), and/or technologies (such as fluorescence, nanotechnology, etc.) that are potential candidates for use in cancer detection, staging, diagnosis, and/or prognosis
- Use of proteomics, genomics, expression assays, or other technologies in the discovery or identification of markers
- Defining molecular signatures of cancer cells, including cancer stem cells (e.g., for the purposes of diagnosis/prognosis and to enable treatment decision planning in personalized/stratified/precision medicine)

4.2 Technology and/or Marker Evaluation with Respect to Fundamental Parameters of Method

Examples of science that would fit:

- Development, refinement, and preliminary evaluation (e.g., animal trials, preclinical, and Phase I human trials) of identified markers or technologies such as genetic/protein biomarkers (prospective or retrospective) or imaging methods (optical probes, PET, MRI, etc.)
- Preliminary evaluation with respect to laboratory sensitivity, laboratory specificity, reproducibility, and accuracy
- Research into mechanisms assessing tumor response to therapy at a molecular or cellular level

4.3 Technology and/or Marker Testing in a Clinical Setting

Examples of science that would fit:

- Evaluation of clinical sensitivity, clinical specificity, and predictive value (Phase II or III clinical trials), including theranostics and prediction of late/adverse events
- 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, and receiver-operator characteristics. Includes education, communication (e.g., genetic counselling and advice on screening behavior based on cancer risk factors), behavioral and complementary/alternative approaches to improve compliance, acceptability or to reduce anxiety/discomfort, and evaluation of new methods to improve screening in healthcare settings.
- Research into improvements in techniques to assess clinical response to therapy

4.4 Resources and Infrastructure Related to Detection, Diagnosis, or Prognosis

Examples of science that would fit:

- Informatics and informatics networks; for example, patient databanks
- Specimen resources (serum, tissue, images, etc.)
- Clinical trials infrastructure
- Epidemiological resources pertaining to risk assessment, detection, diagnosis, or prognosis
- Statistical methodology or biostatistical methods
- Centers, consortia, and/or networks
- Development, characterization and validation of new model systems for detection, diagnosis or prognosis, distribution of models to the scientific community or research into novel ways of applying model systems, including but not limited to computer-simulation systems, software development, in vitro/cell culture models, organ/tissue models or animal model systems. Guidance note: this should only be used where the focus of the award is creating a model. If it is only a tool or a methodology, code to the research instead.
- Education and training of investigators at all levels (including clinicians and other health professionals), such as participation in training workshops, conferences, advanced research technique courses, and Master's course attendance. This does not include longer term research-based training, such as Ph.D. or post-doctoral fellowships.

5 – TREATMENT

Research included in this category focuses on identifying and testing treatments administered locally (such as radiotherapy and surgery) and systemically (treatments like chemotherapy which are administered throughout the body) as well as non-traditional (complementary/alternative) treatments (such as supplements, herbs). Research into the prevention of recurrence and treatment of metastases are also included here.

5.1 Localized Therapies - Discovery and Development

Examples of science that would fit:

- Discovery and development of treatments administered locally that target the organ and/or neighboring tissue directly, including but not limited to surgical interventions, cryotherapy, local/regional hyperthermia, high-intensity, focused ultrasound, radiotherapy, and brachytherapy

- Therapies with a component administered systemically but that act locally (e.g., photodynamic therapy, radioimmunotherapy, radiosensitizers and theranostics)
- Development of methods of localized drug delivery of systemic therapies e.g., Pressurized Intraperitoneal Aerosol Chemotherapy (PIPAC), direct intratumoral polymers/gels/nanoparticles/microsomes etc.
- Research into the development of localized therapies to prevent recurrence
- Guidance note: localized therapies are considered to be localized when the site of action is the same as the site of administration.

5.2 Localized Therapies - Clinical Applications

Examples of science that would fit:

- Clinical testing and application of treatments administered locally that target the organ and/or neighboring tissue directly, including but not limited to surgical interventions, cryotherapy, local/regional hyperthermia, radiotherapy, and brachytherapy.
- Clinical testing and application of therapies with a component administered systemically but that act locally (e.g., photodynamic therapy, radiosensitizers and theranostics, Pressurized Intraperitoneal Aerosol Chemotherapy (PIPAC), direct intratumoral polymers/gels/nanoparticles/microsomes etc.)
- Phase I, II, or III clinical trials of promising therapies that are administered locally
- Side effects, toxicity, and pharmacodynamics
- Clinical testing of localized therapies to prevent recurrence and prevent and treat metastases

5.3 Systemic Therapies - Discovery and Development

Examples of science that would fit:

- Discovery and development of treatments administered systemically such as cytotoxic or hormonal agents, novel systemic therapies such as immunologically directed therapies (treatment vaccines, antibodies), gene therapy, angiogenesis inhibitors, apoptosis inhibitors, whole body hyperthermia, bone marrow/stem cell transplantation, differentiating agents, adjuvant and neo-adjuvant treatments, systemically-delivered nanoparticles/microsomes, cell-based therapies, manipulation of the microbiome etc.
- Identifying mechanisms of action of existing cancer drugs and novel drug targets, including cancer stem cells for the purposes of treatment/identifying drug targets
- Drug discovery and development, including drug metabolism, pharmacokinetics, pharmacodynamics, combinatorial chemical synthesis, drug screening, development of high throughput assays, and testing in model systems, including that which may aid treatment planning in stratified/personalized medicine
- Investigating the molecular mechanisms of drug resistance (including the role of cancer stem cells) and pre-clinical evaluation of therapies to circumvent resistance
- Development of methods of drug delivery
- Research into the development of systemic therapies to prevent recurrence

5.4 Systemic Therapies - Clinical Applications

Examples of science that would fit:

- Clinical testing and application of treatments administered systemically such as cytotoxic or hormonal agents, novel systemic therapies such as immunologically directed therapies (treatment vaccines, antibodies, antibiotics, theranostics or other biologics), gene therapy, angiogenesis inhibitors, apoptosis inhibitors, whole body hyperthermia, bone marrow/stem cell transplantation, and differentiating agents, adjuvant and neo-adjuvant treatments, systematically-delivered nanoparticles/microsomes, cell-based therapies, manipulation of the microbiome etc.
- Phase I, II, or III clinical trials of promising therapies administered systemically
- Side effects, toxicity, and pharmacodynamics
- Clinical testing of systemic therapies to prevent recurrence and prevent and treat metastases

5.5 Combinations of Localized and Systemic Therapies

Examples of science that would fit:

- Development and testing of combined local and systemic approaches to treatment (e.g., radiotherapy and chemotherapy, or surgery and chemotherapy)
- Clinical application of combined approaches to treatment such as systemic cytotoxic therapy and radiation therapy
- Development and clinical application of combined localized and systemic therapies to prevent recurrence and prevent and treat metastases

5.6 Complementary and Alternative Treatment Approaches

Examples of science that would fit:

- Discovery, development, and clinical application of complementary/alternative medicine (CAM) treatment approaches such as diet, herbs, supplements, natural substances, or other interventions that are not widely used in conventional medicine or are being applied in different ways as compared to conventional medical uses
- Complementary/alternative or non-pharmaceutical approaches to prevent recurrence and prevent and treat metastases

5.7 Resources and Infrastructure Related to Treatment and the Prevention of Recurrence

Examples of science that would fit:

- Informatics and informatics networks; for example, clinical trials networks and databanks
- Mathematical and computer simulations
- Specimen resources (serum, tissue, etc.)
- Clinical trial groups
- Clinical treatment trials infrastructure
- Epidemiological resources pertaining to treatment
- Statistical methodology or biostatistical methods
- Drugs and reagents for distribution and drug screening infrastructures
- Centers, consortia, and/or networks

- Development and characterization of new model systems for treatment, distribution of models to scientific community or research into novel ways of applying model systems, including but not limited to computer-simulation systems, software development, in vitro/cell culture models, organ/tissue models or animal model systems. Note: this should only be used where the focus of the award is creating a model. If it is only a tool or a methodology, code to the research instead.
- Reviews/meta-analyses of clinical effectiveness of therapeutics/treatments
- Education and training of investigators at all levels (including clinicians and other health professionals), such as participation in training workshops, conferences, advanced research technique courses, and Master's course attendance. This does not include longer term research-based training, such as Ph.D. or post-doctoral fellowships.

6 - CANCER CONTROL, SURVIVORSHIP, AND OUTCOMES RESEARCH

Research included in this category includes a broad range of areas: patient care and pain management; tracking cancer cases in the population; beliefs and attitudes that affect behavior regarding cancer control; ethics; education and communication approaches for patients, family/caregivers, and health care professionals; supportive and end-of-life care; and health care delivery in terms of quality and cost effectiveness.

6.1 Patient Care and Survivorship Issues

Examples of science that would fit:

- Research into patient-centered outcomes
- Quality of life
- Pain management
- Psychological impacts of cancer survivorship
- Rehabilitation, including reconstruction and replacement
- Economic sequelae, including research on employment, return to work, and vocational/educational impacts on survivors and their families/caregivers
- Reproductive issues
- Long-term issues (morbidity, health status, social and psychological pathways)
- Symptom management, including nausea, vomiting, lymphedema, neuropathies, etc.
- Prevention and management of long-term treatment-related toxicities and sequelae, including symptom management (e.g., physical activity or other interventions), prevention of mucosities, prevention of cardiotoxicities, opportunistic infections, cachexia etc.
- Psychological, educational or complementary/alternative (e.g., hypnotherapy, relaxation, transcendental meditation, imagery, spiritual healing, massage, biofeedback, herbs, spinal manipulation, yoga, acupuncture) interventions/approaches 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/caregivers and interventions to assist family members/caregivers
- Educational interventions to promote self-care and symptom management

- Research into peer support, self-help, and other support groups
- Behavioral factors in treatment compliance

6.2 Surveillance

Examples of science that would fit:

- Epidemiology and end results reporting (e.g., SEER)
- Registries that track incidence, morbidity, co-morbidities/symptoms, long-term effects and/or mortality related to cancer
- Surveillance of established cancer risk factors in populations such as diet, body weight, physical activity, sun exposure, and tobacco use, including method development
- Analysis of variations in established cancer risk factor exposure in populations by demographic, geographic, economic, or other factors
- Trends in use of interventional strategies in populations (e.g., geographic variation)

6.3 Population-based Behavioral Factors

Examples of science that would fit:

- Research into populations' attitudes and belief systems (including cultural beliefs) and their influence on behaviors related to cancer control, outcomes and treatment. For example, how populations' beliefs can affect compliance/interaction with all aspects of the health care/service provision
- Research into the psychological effects of genetic counselling
- Research into behavioral barriers to improving cancer care/survivorship clinical trial enrollment

6.4 Health Services, Economic and Health Policy Analyses

Examples of science that would fit:

- Development and testing of health service delivery methods
- Interventions to increase the quality of health care delivery
- Impact of organizational, social, and cultural factors on access to care and quality of care, including studies on variations or inequalities in access among racial, ethnic, geographical or socio-economic groups
- Studies of providers such as geographical or care-setting variations in outcomes
- Effect of reimbursement and/or insurance on cancer control, outcomes, and survivorship support
- Health services research, including health policy and practice and development of guidelines/best practice for healthcare delivery across the diagnostic/preventive/treatment spectrum
- Analysis of health service provision, including the interaction of primary and secondary care
- Analyses of the cost effectiveness of methods used in cancer prevention, detection, diagnosis, prognosis, treatment, and survivor care/support

- Ethical, legal or social implications of research/health service delivery (e.g. genetic counselling)
- Research into systemic or operational barriers to trial enrollment

6.5 Education and Communication Research

Examples of science that would fit:

- Development of generic health provider-patient communication tools and methods (e.g., telemedicine/health)
- Tailoring educational approaches or communication to different populations (e.g., social, racial, geographical, or linguistic groups)
- Research into new educational and communication methods and approaches, including special approaches and considerations for underserved and at-risk populations
- Research on new methods and strategies to disseminate cancer information/innovation to healthcare providers (e.g., web-based information, telemedicine, smartphone apps, etc.) and the effectiveness of these approaches
- Research on new communication processes and/or media and information technologies within the health care system and the effectiveness of these approaches
- Media studies focused on the nature and ways in which information on cancer and cancer research findings are communicated to the general public
- Education, information, and assessment systems for the general public, primary care professionals, or policy makers
- Research into barriers to successful health communication

6.6 End-of-Life Care

Examples of science that would fit:

- Hospice/end-of-life patient care focused on managing pain and other symptoms (e.g., respiratory distress, delirium) and the provision of psychological, social, spiritual and practical support through either conventional or complementary/alternative interventions/approaches throughout the last phase of life and into bereavement
- Quality of life and quality of death for terminally-ill patients
- Provision of psychological, social, spiritual and practical support to families/caregivers through either conventional or complementary/alternative interventions/approaches
- Research into the delivery of hospice care

6.7 Research on Ethics and Confidentiality

Examples of science that would fit:

- Informed consent modeling/framing and development
- Quality of Institutional Review Boards (IRBs)
- Protecting patient confidentiality and privacy
- Research ethics
- Research on publication bias within the cancer research field

6.8 – Historical code [no longer used]

6.9 Resources and Infrastructure Related to Cancer Control, Survivorship, and Outcomes Research

Examples of science that would fit:

- Informatics and informatics networks
- Clinical trial groups related to cancer control, survivorship, and outcomes research
- Epidemiological resources pertaining to cancer control, survivorship, and outcomes research
- Statistical methodology or biostatistical methods pertaining to cancer control, survivorship and outcomes research
- Surveillance infrastructures
- Centers, consortia, and/or networks pertaining to cancer control, survivorship and outcomes research
- Development and characterization of new model systems for cancer control, outcomes or survivorship, distribution of models to scientific community or research into novel ways of applying model systems, including but not limited to computer-simulation systems, software development, in vitro/cell culture models, organ/tissue models or animal model systems. Guidance note: this should only be used where the focus of the award is creating a model. If it is only a tool or a methodology, code to the research instead.
- Psychosocial, economic, political and health services research frameworks and models
- Education and training of investigators at all levels (including clinicians and other health professionals), such as participation in training workshops, conferences, advanced research technique courses, and Master's course attendance. This does not include longer-term research-based training, such as Ph.D. or post-doctoral fellowships.