GUIDELINES
FOR
NATIONAL CANCER INSTITUTE
PROGRAM PROJECT (P01) GRANTS

December 2008

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FORWARD

These Guidelines for National Cancer Institute (NCI) Program Project (P01) Grants are intended as a resource for prospective applicants and for reviewers of NCI P01 applications.

Beginning in January 2009, ALL NCI P01 APPLICATIONS MUST BE SUBMITTED UNDER NIH FUNDING OPPORTUNITY ANNOUNCEMENT http://grants.nih.gov/grants/guide/PA-files/PAR-09-025.html, (PAR-09-025) National Cancer Institute Program Project (P01) Applications. This PAR has NEW due dates for NCI P01 applications that are slightly different from the standard NIH receipt dates for P01 applications. The first application due date for NCI P01s under PAR-09-025 is January 28, 2009.

Program Projects constitute one of the major extramural research portfolios supported by the National Cancer Institute (NCI). The NCI has found P01 grants to be particularly effective and highly productive, especially in areas where interdisciplinary collaboration and specialized core resources are needed to achieve a larger objective than can be supported through the traditional single project (R01) research grant.

Submitting and reviewing a P01 application requires a substantial investment of effort by applicants, applicant organizations, NCI staff, and peer reviewers. To maximize the potential of this effort, prospective applicants are strongly encouraged to discuss their ideas with relevant NCI program staff prior to the submission of a formal application. Individuals should contact the NCI Referral Officer in the Division of Extramural Activities (DEA), NCI (e-mail: ncirefof@dea.nci.nih.gov or 301-496-3428) for assistance in identifying appropriate NCI program areas and program staff.

Applicants must obtain approval from the NCI at least 6 weeks before the anticipated submission of a P01 application (including resubmitted/amended applications and requests for supplemental funds) requesting $500,000 or more in direct costs in any single year [NIH Guide to Grants and Contracts, dated October 16, 2001 (http://grants.nih.gov/grants/guide/notice-files/NOT-OD-02-004.html).

The process for obtaining approval to submit a P01 application begins with submission of a letter of intent to the NCI Referral Officer (See Section VIII of these Guidelines).

In addition, for renewal applications, direct cost budget requests for the first requested year must not exceed an increase of 10 percent over the direct costs awarded in the last noncompeting (Type 5) year. Details of the restrictions on budget requests are provided at http://grants.nih.gov/grants/guide/notice-files/NOT-CA-08-026.html.

To determine the base for calculation of the maximum allowed increase in the first renewal year, the Principal Investigator is strongly advised to contact appropriate NCI program staff for assistance.

National Cancer Institute P01 applications must be prepared according to the instructions described in PAR-09-025 and these Guidelines. The instructions for NCI application formatting refer to current procedures outlined in the Application for a Public Health Service Grant, PHS 398 (Rev. 11/2007) (see http://grants1.nih.gov/grants/funding/phs398/phs398.html) as well as the most recent policies governing the submission, review, and award of NCI P01s. Applications not prepared using the current version of the PHS 398 application kit or not adhering to the instructions for preparation contained in these PAR-09-025 and these NCI P01 Guidelines may be returned without review.

Applications involving clinical research must meet the NIH requirement for addressing the protection of human subjects from research risk; the inclusion of women, minorities, and children in the study populations; and plans for data and safety monitoring (for research involving clinical trials). Expected accruals must be presented in tabular form for each clinical study proposed. All applications should include plans for sharing of model-organism(s). Applicants should refer to the information in these

Guidelines and the PHS 398 instructions. Failure to provide such information will result in the application being returned as nonresponsive or deferral of review until adequate information is provided. Investigators submitting an NIH application requesting research support of $500,000 or more in direct costs in any single year are expected to include a plan for data sharing or state why data sharing is not possible. This requirement is a reaffirmation of the NIH policy endorsing expedited translation of research results into knowledge, products, and procedures to improve human health. Applicants should refer to the policy statements provided by the NIH Office of Extramural Research (http://grants2.nih.gov/grants/policy/data_sharing/index.htm).

The NIH continues to evolve policies governing all extramural awards, including NCI Program Projects. Applicants are strongly encouraged, therefore, to obtain the latest policy and procedure information as the first step in preparing a new or renewal P01 application. Updated information and additional copies of the Guidelines for P01s may be obtained by accessing the Home Page of the National Cancer Institute Division of Extramural Activities at http://deainfo.nci.nih.gov/awards/p01.htm. Further information and guidance may also be obtained from the NCI Referral Officer (see contact information below). For current grantees, information may be obtained from your NCI Program Director.

Referral Officer
Program Coordination and Referral Branchy
Office of Referral, Review, and Program Coordination
Division of Extramural Activities
National Cancer Institute
6116 Executive Blvd., Room 8040, MSC 8329
BETHESDA, MD 20892-8329 (for U.S. Postal Service Express or Regular Mail)
Rockville, MD 20852 (for non-USPS delivery)
301-496-3428
301-402-0275 (FAX)
ncirefof@dea.nci.nih.gov

The process for submitting an NCI P01 application is different from that for other grant applications. All NCI P01 applications, including new, renewal, resubmitted, and revised applications, must be submitted on or before the receipt dates shown in PAR-09-025. The process to submit an application is described in Section VIII of this Guideline. The original application and three copies must be sent to the NIH Center for Scientific Review (CSR) at the address provided in the PHS 398 form. Two copies of the application must be sent directly to the NCI Referral Office at the address above.

The NCI uses a single-stage process for the initial peer review of P01 applications. Applications will be grouped based on the scientific areas of the proposed research and the general technical approaches involved in the proposed work. NCI will convene Special Emphasis Panels (SEPs) with appropriate expertise to review and score the applications according to a standardized procedure. Appendix D shows areas of science that are typically grouped together for review by different SEPs.

SUMMARY OF CHANGES IN THIS REVISION OF THE GUIDELINES

This page is only a summary of the changes and revisions in these updated Guidelines for NCI P01s. Detailed information is presented in the appropriate section and in PAR-09-025 National Cancer Institute Program Project (P01) Applications.

New Policy on Multiple PDs/PIs
More than one Principal Investigator, or multiple PDs/PIs, may be appropriate for "team science" approaches (see http://grants.nih.gov/grants/multi%5Fpi/overview.htm). Multiple PDs/PIs may be designated for the application as a whole for NCI P01s submitted for the January 28, 2009 receipt date or later. If this option is used, it is expected that one of the PDs/PIs will be identified as the "lead" PD/PI who will be responsible for coordinating the entire program project. However, each project should still have a single designated Project Leader and each shared resource core should still have a single designated Core Director.

New Policy on Resubmission (Amended) Applications
A new NIH policy limits to one the number of resubmission/amendment applications for new and competing renewal applications first submitted on or after January 25, 2009. Please refer to the following URL for full information regarding this new policy:
http://grants.nih.gov/grants/guide/notice-files/NOT-OD-09-003.html

Budget Cap for Renewal and Resubmitted Program Project Applications Submitted after October 1, 2008
NCI has changed the budget cap for all renewal applications 10 percent of the last award for the funded program. For complete information, see http://grants.nih.gov/grants/guide/notice-files/NOT-CA-08-026.html. This change is effective for all applications submitted on or after October 1, 2008.

Receipt Dates for NCI P01 Applications
All NCI P01 applications will now be submitted under a new Funding Opportunity Announcement, PAR-09-025, which has specific receipt dates which are close to but different from the general NIH receipt date for P01 applications.

Page Limit for Shared Resource Cores
Items 2-5 of the Core Services Plan are now limited to **10 (ten)** pages.

New NIH Scoring System
In compliance with NIH policy, all P01 applications submitted to NCI on or after January 28, 2009 for potential funding in FY 2010 (i.e., for review for the September 2009 council round) or later will be scored by the new 1 – 9 point scoring system (see **NIH Guide Notice NOT-OD-09-024,** Enhancing Peer Review: The NIH Announces New Scoring Procedures for Evaluation of Research Applications Received for Potential FY2010 Funding at http://grants.nih.gov/grants/guide/notice-files/NOT-OD-09-024.html.)

Enhanced Review Criteria and Overall Impact Score
In compliance with NIH policy, all P01 applications submitted to NCI on or after January 28, 2009 for potential funding in FY 2010 (i.e., for review for the September 2009 council round) or later will be evaluated using the enhanced review criteria announced in **NIH Guide Notice NOT-OD-09-025**, Enhancing Peer Review: The NIH Announces Enhanced Review Criteria for Evaluation of Research Applications Received for Potential FY2010 Funding (http://grants.nih.gov/grants/guide/notice-files/NOT-OD-09-025.html). The overall impact score will reflect the reviewers' assessment of the likelihood that the program as a whole will exert a sustained, powerful influence on the research field(s) involved.

Policy Relating to Format and Submission of Appendix Materials

In compliance with NIH policy, all P01 applications submitted to NCI on the PHS 398 application form **must** provide appendix material on CDs only (see http://grants.nih.gov/grants/guide/notice-files/NOT-OD-08-031.html.) The CDs with the Appendix material should be prepared according to the current PHS 398 instructions. The CD with appendix materials should not be submitted on the application due date. The NCI SRO for the review will provide applicants with a specific deadline for appendix materials. See **Section V.J** of these Guidelines for more information on submitting appendix materials.

Submission of PDF Copies of Application.
Applicants are encouraged to submit CD with a PDF copy of the P01 application may be submitted along with the two copies of the application sent to the NCI Referral Office on the application due date. The format for this CD is described under Section V. J. Appendix Materials.

REMINDERS

Communication with the NCI Referral Office via a Letter of Intent is required at least 6 weeks before the projected submission date so that internal NCI approval can be obtained. This requirement also applies to resubmitted/amended applications. If the application is not submitted on the anticipated receipt date, a new Letter of Intent is required for the next receipt date.

The receipt dates for all NCI P01 applications, including revised/amended applications, have changed as shown in PAR-09-025. The original application and three copies must be sent to the NIH Center for Scientific Review. Two paper copies of the application and (optional) a CD with a PDF copy of the application should be sent to the NCI Referral Office on the receipt date. The NCI SRO for the review will give applicants a specific deadline for submission of all appendix materials.

I. INTRODUCTION

The Program Project (P01) grant is for support of an integrated, multi-project research program involving a number of independent investigators who share knowledge and common resources. This type of grant has a well-defined central research focus involving several disciplines or several aspects of one discipline.

The individual projects should be interrelated such that the research efforts are synergistic thereby allowing progress to occur at a greater rate and result in a greater contribution to program goals than if each project were pursued separately.

These Guidelines provide:

- Definitions, background, and review criteria for National Cancer Institute (NCI) P01 grant applications.
- Descriptions of the peer review process used for the evaluation of P01 grant applications.
- Instructions for the preparation of new, competing renewal, revised/supplemental, and resubmitted/amended P01 grant applications.

II. DEFINITIONS and IMPORTANT URLs for GRANT POLICIES

Awaiting Receipt of Application (ARA) – an internal NIH document submitted to the Receipt and Referral Office in the NIH Center for Scientific Review (CSR) by NCI staff to indicate willingness to accept an application (a) requesting $500,000 or more in direct costs in any year, or (b) for programmatic relevance.

Core – a separately budgeted component that provides essential facilities or services to two or more of the proposed research projects.

Grants Management Specialist – the NCI official who serves as the focal point for all business-related activities associated with the negotiation, award, and administration of grants.

Letter of Intent – a nonbinding notification submitted to NCI staff by a Principal Investigator indicating intent to submit an application.

Multiple PD/PI - More than one Program Director/Principal Investigator (PD/PI) may be designated by the applicant organization to direct the overall program project. If a multiple PD/PI management plan is elected, each PD/PI must have a designated role within the plan, and one of the PD/PIs should be designated as the “lead” PI to coordinate the overall program.

National Cancer Advisory Board (NCAB) – a Presidential-appointed chartered committee that advises the Secretary, Department of Health and Human Services (DHHS) and the Director, NCI. The NCAB is composed of both scientists and lay members, performs the second level of review of grant applications, and advises on matters of significance to the policies, mission, and goals of the NCI. The members include outstanding authorities knowledgeable in relevant programmatic areas that are especially concerned with the health needs of the American people.

P01 – the NIH activity code which identifies a Program Project application or grant.

Principal Investigator(s) – the person(s) designated by, and responsible to, the applicant/awardee institution for the scientific and administrative direction and proper conduct of all aspects of the P01.

Program Director – the NCI scientist administrator responsible for the development of initiatives and for the scientific management of research programs sponsored by the NCI. This person serves as the focal point for all science-related activities associated with the negotiation, award, and administration of grants.

Program Project Grant (P01) – an assistance award for the support of a broadly based multidisciplinary research program that has a well-defined central research focus or objective. It may also include support for common supporting resources (cores) required for the conduct of the component research projects. Interrelationships between projects are expected to result in a greater contribution to the program goals than if each project were pursued separately.

Project – a research component of the P01 application having a separate, detailed budget.

Project Leader/Core Director – the investigator responsible for the scientific direction and conduct of an individual research project or of a core component of a P01.

R01 – the NIH activity code that identifies an individual, investigator-initiated research project application or grant.

Scientific Review Officer (SRO) – the NCI scientist administrator responsible for the organization, management, and documentation of the initial peer review process for applications.

Special Emphasis Panel (SEP) – an advisory group of scientific experts convened for a specific review or collection of reviews.

Summary Statement – the official record of the evaluation and recommendations of the scientific review panel.

Important URLs for Grants Policy

- Updated Instructions Regarding Inclusion of Publications as Appendix Materials: http://grants2.nih.gov/grants/guide/notice-files/NOT-OD-06-051.html
- NCI Web Site: http://www.cancer.gov/
- Extramural Funding Opportunities: http://deainfo.nci.nih.gov/funding.htm
- NCI Notices Related to Initiatives: http://deainfo.nci.nih.gov/extra/notices/index.htm
- NIH Office of Extramural Research (OER) Peer Review Policy and Issues: http://grants.nih.gov/grants/peer/peer.htm
- PHS 398 Form and Instructions: http://grants2.nih.gov/grants/funding/phs398/phs398.html
- NIH Instructions to Reviewers for Evaluating Research Involving Human Subjects: http://grants.nih.gov/grants/peer/hs_review_inst.pdf
- Guidance on Research Involving Human Specimens: http://www.hhs.gov/ohrp/humansubjects/guidance/cdebiol.pdf
- NIH Data Sharing Policy and Implementation Guidance: http://grants1.nih.gov/grants/policy/data_sharing/data_sharing_guidance.htm
- NIH Guidance on Research Involving Human Embryonic Stem Cells: http://stemcells.nih.gov/policy/guidelines.asp
- NIH Policy on Resubmission (Amended) Applications http://grants.nih.gov/grants/guide/notice-files/NOT-OD-09-003.html

- NIH Funding Opportunity Announcement
  HTTP://GRANTS.NIH.GOV/GRANTS/GUIDE/PA-FILES/PAR-09-025.HTML
  http://grants.nih.gov/grants/guide/notice-files/
- DHHS/OER Policy on Multiple Principal Investigators
  http://grants.nih.gov/grants/multi_pi/

III. PROGRAM PROJECT (P01) FUNDING MECHANISM

The P01 grant is for support of multidisciplinary or multifaceted research programs having a strong central theme. There are several features that distinguish P01 grants from other assistance mechanisms: Each project within a P01 is similar to the traditional research grant application in the sense that each is reviewed for scientific merit compared to a standard of quality in a broad scientific discipline. However, a component project also is evaluated within the context of the special collaborative interrelationships and environment required for a P01. Interactions among projects should be such that the acquisition of knowledge and rate of research outcome is beyond that expected from the same projects conducted separately, without combined leadership and coordination. Individual investigators may apply their specialized research capabilities to basic science, clinical studies, cancer control and cancer prevention or combinations of such studies as they relate to the focused, central theme of the overall P01. Thus, the P01 funding mechanism offers a special way to achieve research synergy through the sharing of personnel, facilities, equipment, data, ideas, and concepts.

Each application should include a sufficient number of scientifically meritorious projects to promote an effective collaborative effort among the participating investigators. To be eligible for an award, a P01 must consist of a minimum of three scientifically meritorious projects. Conversely, the P01 should not be so large that it exceeds the scientific and administrative leadership capability of the Principal Investigator, or that it loses a tight focus. Applicants should realize that the larger the program, the greater the likelihood that some components will be of lower quality. The inclusion of projects of lower quality or of peripheral relationship to the central theme will have a negative impact on the overall evaluation. The maximum number of research projects recommended, therefore, is six. Plans to submit applications with more than six projects should be discussed with the appropriate NCI Program Director. Alternatively, investigators considering research programs with a larger number of projects should consider submission of separate more focused P01 applications each containing fewer projects. Please note that division of projects into subprojects in order to designate additional key investigators or to fragment the experimental approach is not permitted.

Research projects currently funded by other mechanisms should not be included in a newly proposed program. Such projects may, however, submit a letter of agreement to collaborate with the P01 group. Applications may include projects by NIH/NCI intramural investigators. However, a requested budget for such projects should not be requested since funds to support the research will come from the NCI intramural budget. If a project(s) that was previously part of an awarded P01 will now be supported by another award mechanism (such as an independent R01) but will continue to collaborate with the P01 applicant group, the Program Overview section of the renewal/competing continuation application should explicitly describe how that collaboration will occur. Letters of agreement to collaborate from the separately funded investigators should be included in the application.

Resubmitted P01 applications may include one or more projects that were in the original P01 application but have subsequently been awarded as an independent grant (i.e., an R01 grant) during the course of the P01 resubmission process. However, all resubmitted/amended P01 applications must include at least two unfunded projects and the Program Overview should explicitly indicate which project(s) have been awarded. In this case, NCI policy is that the funded

project(s) will not be individually discussed or scored during the review, but will be considered under the overall Environment and Program as Integrated Effort review criteria, and thus will contribute to the overall score for the application. In addition, the funded project(s) will be folded into the P01 award at the awarded budget levels and period of support. The application should contain a statement signed by all investigators agreeing to these stipulations.

Finally, P01 applications may not include requests for funds (seed money) for developmental projects or for training.

A P01 application may contain one or more core component(s), each with a separate budget, for administrative or research support services that are required for and shared solely within the P01. Core components should be important to the overall success of the program, and each core must serve at least two projects. Core components also may include research designed to improve core services. If a P01 grant application originates from an institution that is supported by an NCI Cancer Center Support Grant (P30), or there are Special Programs of Research Excellence (SPORE) (P50) on related research topics, a list of existing Cancer Center Shared Resources/Cores and SPORE Resources and Cores should be provided. Funds may be requested to supplement existing facilities in accordance with the needs of the P01. If Cores proposed within the P01 application duplicate existing institutional resources, clear and substantive justification should be provided for such duplication.

Central to the quality of a P01 is the leadership of the Principal Investigator(s) and the other senior participating investigators. The NCI encourages P01 program project applicants to take advantage of the multiple PDs/PIs option recently announced by the NIH (see http://grants.nih.gov/grants/multi_pi) The use of this option allows, for example, the designation of any (or all) of the leaders of the individual projects or cores as a PD/PI of the overall application. If this option is used, it is expected that one of the PDs/PIs will be identified as the "lead PD/PI" who will be responsible for coordinating the entire program project.

All designated Principal Investigator(s) of the P01 should be established scientists with strong records of accomplishment who are substantially committed to, and exercise responsibility for, the scientific leadership, integration, and administration of the entire P01. The Lead Principal Investigator need not serve as a project leader or core director. The component projects should be directed by investigators who are experienced in the conduct of independent research as evidenced by grant awards and publications and whose backgrounds and interests relate sufficiently to one another to allow for integrated group pursuit of the proposed P01 goals and objectives. There is one designated project leader for each project and one designated core director for each core who is responsible for overall management and coordination of the component.

IV. ADVANCE COMMUNICATIONS with NCI STAFF

A. Initial Communications with NCI Staff

Research groups planning to submit a P01 application have found it useful to establish advance communications with relevant NCI staff. Such communications should begin well before the submission date.

Specific issues for discussion might include:

- The theme or focus of the P01;
- The size and scope of the program and the optimal number of projects;
- The rationale for choosing the P01 mechanism for support of the planned research;

- Tentative projects: Title, name of the project leader, and a brief summary of goals and relationship to the central theme;
- Tentative core component(s) and how each one supports the overall program;
- Budget estimates for the program. NOTE: If the budget for a competitive renewal application exceeds 10 percent of the last budget period, the application may be returned if NCI approval has not been obtained and documented;
- The methods for communication and interaction among program participants and internal quality control;
- Other related support; and
- For competing renewal applications, an identification of components to be discontinued and new components that might be added to the P01.

B. Letter of Intent

PAR-09-025 lists specific dates for submission of Letters of Intent for each P01 due date. However, applicants must obtain approval from the NCI at least **six weeks** prior to the anticipated submission of any P01 grant application, including requests for supplemental funds, requesting $500,000 or more in direct costs in any one year (NIH Guide to Grants and Contracts, dated October 16, 2001 [http://grants.nih.gov/grants/guide/notice-files/NOT-OD-02-004.html]. **This rule also applies to resubmitted/amended applications and applications that have been delayed to a later submission date.**

Although the Letter of Intent is not binding either for the planned submission date or for final detailed research content, the information provided will allow NCI program staff to process an Awaiting for Receipt of Application (ARA) request. The Letter of Intent also is helpful to the NCI Division of Extramural Review Staff in estimating the potential review workload, to avoid conflict of interest in the review, and to plan for the number of Special Emphasis Panels that will need to be convened for the review cycle. Therefore, the Letter of Intent should include at a minimum:

- The names of the Principal Investigator(s) and key personnel;
- A descriptive title of the potential application and a list of titles for the anticipated components of the P01;
- Identification of all organization(s) involved; and
- Announcement (if any) to which the potential application is responding.

Descriptions for the program, projects, and core are also very helpful.

The Letter of Intent should be sent to:

Referral Officer
Program Coordination and Referral Branch
Office of Referral, Review, and Program Coordination
Division of Extramural Activities
National Cancer Institute
6116 Executive Blvd., Room 8040A
BETHESDA, MD 20892-8329
Rockville, MD 20852 (for courier delivery)
301-496-3428
301-402-0275 7(FAX)
ncirefof@dea.nci.nih.gov

Electronic transmission of the Letter of Intent is acceptable. The Referral Office will send a copy to the Chief, Research Programs Review Branch, and to the appropriate NCI program director. If you have previously been in communication with an NCI program director, please provide that person's name in the letter and forward him/her a copy of the letter.

V. SPECIAL INSTRUCTIONS for PREPARATION of NCI PROGRAM PROJECT APPLICATIONS

General instructions for the preparation of a grant application are contained in the U.S. Department of Health and Human Services Public Health Service Grant Application (PHS 398) (Rev. 11/2007).

Applications must be prepared using the most current PHS 398 research grant application instructions and forms. Applications must have a D&B Data Universal Numbering System (DUNS) number as the universal identifier when applying for Federal grants or cooperative agreements. The D&B number can be obtained by calling (866-705-5711 or through the web site at http://www.dnb.com/us. The DB number should be entered on line 11 of the face page of the PHS 398 form.

The title and number of this funding opportunity must be typed in Item (box) 2 of the face page of the application form and the YES box must be checked.

For all P01 applications submitted in response to this FOA, the standard PHS 398 instructions are modified as summarized below, and as described. These individual additional instructions are required because the PHS Form 398 is designed primarily for individual freestanding research project grant applications, and does not have specific instructions for multi-project applications. Page limitations for the sections relating to the Program Overview and other special sections of the application are noted under the specific categories. When submitting the application, attach a cover letter that includes the following information: the institute (NCI) which has agreed to accept the application (see NIH Policy), the name of the NCI program director, and response to PAR-09-07, NCI P01 Applications.

A. Face Page
(PHS 398 Form Page 1; Instructions for PHS 398, Part 1.Section 4.1).
Type "PROGRAM PROJECT" in the top left-hand corner of the face page immediately above the words "GRANT APPLICATION**." Check the "yes" box in Item 2 and enter /PAR-09-025, NCI P01 Applications for number and title of the announcement.** Complete all items on the face page of the application as in a traditional research grant application. This is page 1 of the application; all succeeding pages should be numbered consecutively.

When multiple PD/PIs are proposed, use the Face Page-Continued page to provide Items 3a – 3h for all PD/PIs. NIH requires one PD/PI be designated as the "contact PD/PI" for all communications between the PD/PIs and the agency. The contact PD/PI must meet all eligibility requirements for PD/PI status in the same was as other PD/PIs, but has no special roles or responsibilities within the project team beyond those mentioned above. The contact PD/PI may be changed during the project period. The contact PD/PI should be listed in block 3 of Form Page 1 (the Face Page), with all additional PD/PIs listed on Form Page 1-Continued. When inserting the name of the PD/PI in the header of each application page, use the name of the "Contact PD/PI, et.al." The contact PD/PI must be from the applicant organization if the PDs/PIs are from more than one institution.

B. Description/Project Summary, Performance Sites and Key Personnel
(PHS 398 Form Pages 2 and Form Page 2-continued; Instructions for PHS 398, Part 1. Section 4.2). Follow instructions in the PHS 398 instructions for completing the Project Summary, Performance Sites, Key Personnel, Other Significant Contributors, and Human Embryonic Stem Cells.

The Project Summary/Description serves as a succinct and accurate description of the proposed work when it is separated from the application. State the application's broad, long-term objectives and specific aims. State the contribution of each component to the overall theme and goals. The second component of the Description is **Relevance.** Using no more than two or three sentences, describe the relevance of this research to **public health**. Use plain language that can be understood by a general, lay audience.

Under Performance Sites, list the applicant institution and all other sites where work described in the research plan will be conducted. The names of involved institutions should be spelled out in full for the first mention with acronym in parenthesis. The acronym may be used subsequently. The Key Personnel list for the entire P01 should begin with the lead PD/PI, followed by any other Principal Investigator(s) in alphabetical order, followed alphabetically by all project and core leaders, co-leaders, co-investigators, and consultants and consortium collaborators, whether receiving salary or not, who will provide effort and/or significant intellectual input into the proposed research. List under "Other Significant Contributors" other personnel who will be other collaborators or consultants.

Summarize the distribution of effort of all key personnel on each project and core. This information can be presented in a tabular form such as that shown in Appendix B: Sample Table of Distribution of Professional Effort, NCI P01 Guidelines.

C. Table of Contents
(Use PHS 398 Continuation Pages to prepare the Table of Contents following the format as shown in Appendix A of this P01 Guidelines).
A detailed Table of Contents that enables reviewers to find specific information readily is very helpful. Identify projects by number, title, and project leader name. Identify cores by letter, title, and core director name. Do not include unnumbered pages, and do not use suffixes, such as 5a, 5b. For renewal/competing continuation or resubmitted/amended applications, renumber all projects and cores in sequence if an existing or previously reviewed project or core is discontinued or deleted. Deleted Component (s) should be identified in the Program Overview as described below.

D. Budget for Overall Program Project
(PHS 398 Instructions (Part 1, Sections 4.4 and 4.5)
Follow the instructions closely in preparing a detailed composite budget for all requested support for the first year. PHS Form Page 4: Detailed Budget for Initial Budget Period should be used for the first year requested budget. A summary budget for the entire proposed period of support should be prepared using Form Page 5. In each Form, the composite budgets should be summarized by project or core in the different expense categories, i.e., personnel, equipment, and supplies.

Budget requests for direct costs for renewal/competing continuation P01 grant applications must not exceed an increase of 10 percent over the direct costs to be awarded in the last noncompeting (Type 5) year. The Principal Investigator is encouraged to contact NCI program staff for assistance in preparing requested budgets.
http://grants.nih.gov/grants/guide/notice-files/NOT-OD-09-003.html

E. Biographical Sketch and Research Support Information
(PHS 398 Biographical Sketch Format Page; Instructions for PHS 398, Part 1, Section 4.6)
Follow the instructions on the "Biographical Sketch Format" page. Biographical sketches are required for all key personnel participating in individual projects and cores and for all consultants. Locate the Biographical sketches in one section following the overall budget for the program. In arranging the biographical sketches, the Principal Investigator should be listed first.

If a Multi-PI leadership plan is proposed, place those Biographical Sketches in alphabetical order next, followed by other key personnel in alphabetical order.

F. Program Overview
(PHS 398 Continuation Pages)
The Program Overview section summarizes the overall research plan for the multi-project application and is limited to 20 pages for Items 2 - 8. The multi-project application should be viewed as a confederation of interrelated research projects, each capable of standing on its own scientific merit, but complementary to others in the program such that the overall research is synergistic rather than additive.

1. **Introduction to Application:**
(PHS 398 Continuation Pages)
(Resubmission or Revision Applications only) **Three page limit.**

2. **Specific Aims:** Present the general scientific or medical area to be studied, the overall long-term objectives or goals of the research described in the application and any hypotheses to be tested.

3. **Background and Significance:** The global significance of the research effort should be described. In particular, the importance of the research to public health should be stated. Establish the programmatic theme and address the global background and significance of the proposed research. Provide Descriptions of prior collaborative efforts among investigators in the group, as well as the sequence of events leading to the current application. Discuss the advantages expected from a group effort: how the projects are mutually reinforcing and how collectively they further the goals of the proposed research. Detailed listing of specific aims should be presented only in the respective projects and cores.

4. **List of project and core components in tabular form (by title and investigator).** For renewal and resubmission applications, include new, continuing, completed, and discontinued projects, indicating the previous number/letter of each component, as a summary of changes in the program since the last review. Explain the decision to discontinue or substantially modify previous projects and/or to propose new projects. For competing renewal applications, discuss the impact of any changes in the scope of previously proposed projects/cores as a result of administrative reductions in the awarded budget.

5. **Preliminary Studies (For New and Renewal Applications)/Progress Report (Renewal Applications):**

- For new applications this section should summarize the overall ongoing research and current accomplishments relative to the proposed program studies. Details of the preliminary studies should be included separately under each individual project and core. If publications and manuscripts have been produced these should be listed under Item 9 below.

- The Overall Program Progress Report for a renewal application should describe general programmatic achievements in the current funding period. Publications attributed to the program should be summarized by number as primary publications, manuscripts accepted, abstracts, and reviews. This information should summarize overall P01 major achievements rather than reiterating detailed information provided in each project or core. Place this information under Item 9 below.

- Separate progress reports are included in the individual research projects, so the information in the program overview should summarize overall P01 major achievements rather than reiterating information provided in each project or core. Publications attributed to the program should be summarized by number as primary publications, manuscripts accepted, abstracts, and reviews. Using an asterisk, denote each publication that is a result of formal collaborations among different projects within the program. These citations should be listed under Item 9 below.

6. **Overall Research Design and Methods:** Delineate the global research effort and explain the strategic approach to the problem. Each project/core should be described in brief with specific examples of special opportunities for intra-project collaborations and/or core support. Provide brief descriptions of general and specific research methods to be used in the program.

7. **Organization, Administrative, and Program Management Structure:**

   - Describe in detail, and by diagram, the chain of authority for decision making and administration, beginning at the level of the Principal Investigator. Include investigators responsible for individual components (project leaders/core directors) and procedures for planning, coordinating, and evaluating the projects/cores. If internal or external advisory groups are to be used, list the membership and describe the role of each. If the applicants propose a Multiple PD/PI Leadership Plan, this information can be summarized briefly here and described in more detail in Item G. PD/PI Leadership Plan.
   - List in a separate table all paid and unpaid consultants and their institutional affiliations.
   - Describe relationships between the P01 and other research, academic, and administrative units of the applicant institution (such as centers, institutes, departments), and the central administration of the program.
   - Provide a plan for coordination of and communication among the different projects/cores and participating institutions.
   - Describe plans for monitoring and assessing research progress.

8. **Institutional Environment and Resources:** Briefly describe the institutional environment and resources that are relevant to effective implementation of the P01. This may include NCI-supported clinical and laboratory facilities, participating and affiliated units, patient population, geographic distribution of space and personnel, consultative resources, and relevant collaborations with investigators currently funded under other mechanisms. Detailed Resources for each project/core should be provided within those sections.

9. **Program Research Progress-Related Publications:** List all publications and accepted manuscripts which have resulted from the P01 grant. Using an asterisk, denote each publication that is a result of formal collaborations among different projects within the program. For publicly available citations, URLs or PMC submission identification numbers should accompany the full reference. Copies of these publications no longer may be included as appendix material.

10. **Literature Citations:** Each citation should include names of all authors, full title, name of book or journal, volume, pages and year of publication.

11. **Institutional Letters of Support:** Place all institutional and collaborative letters of support of a general nature after the Literature Cited.

G. Multiple PD/PI Leadership Plan (Optional):
(http://grants.nih.gov/grants/multi_pi)

For applications designating multiple PD/PIs, a leadership plan must be included. A rationale for choosing a multiple PD/PI approach should be described. The governance and organizational structure of the leadership team and the research program should be described, including communication plans, process for making decisions on scientific direction, and procedures for resolving conflicts. The roles and administrative, technical, and scientific responsibilities for the program should be delineated, including responsibilities for human or live vertebrate animal subject studies as appropriate. Within the multiple PD/PI Leadership Plan applicants should retain the use of Project Leader and Core Director as the titles for individuals responsible for project or core leadership in order to be consistent across all NCI P01 applications.

If a budget allocation is planned, the distribution of resources to specific components of the program or individual PD/PIs should be delineated in the leadership Plan. In the event of an award, the requested allocations may be reflected in a footnote on the Notice of Award.

H. Individual Research Projects (Research Plan, Instructions for PHS 398, Part I, Section 5.4 and following)

Describe each project **in sufficient detail to enable reviewers to judge the scientific merit based on information in the application**. Be explicit enough to enable experts in other areas to follow the main objective of the project. All projects are to have a single theme, project leader, and budget. Separately numbered subprojects (i.e., such as Subprojects 3A and 3B) are not allowed. Subcontract services or other activities should be included in the project or core they support, and should not be numbered as separate subprojects. A sample Table of Contents outline for a project is included in Appendix A.

- Title Page
  (PHS 398 Continuation Page). Clearly denote the project number, the title of the project, the project leader's name, and professional degrees.

- Description/List of Key Personnel
  (PHS 398 Form Page 2a and b). The title of "Principal Investigator" is reserved for the PD/PI(s) of the overall application. The leaders of individual projects should be referred to as "Project Leaders" and leaders of cores should be referred to as "Core Directors."

- Omit the PHS 398 Table of Contents form.

- Detailed Budget (PHS 398 Form Pages 4 and 5; Instructions for PHS 398 Part 1, Section 4.4). A detailed budget is required for the first year and a budget summary for the future years. The budget justifications should be explicit, including those for any increases or changes for future years.

  In the upper left–hand corner of the initial year and total budget forms, identify the project or core. The PHS 398 Instructions (Sections 4.4 and following) should be followed closely in preparing the budgets for individual projects and cores. If collaborative efforts or "purchased services" involving other institutions or organizations are anticipated, itemize all costs associated with such third-party participation, including any applicable indirect costs, on separate budget pages and enter the total under the "Consortium/ Contracted Costs" direct costs budget category. For details, refer to "Consortium Agreements," available on the Web at http://grants2.nih.gov/grants/policy/nihgps_2003/NIHGPS_Part12.htm.

The budget pages for subcontracts should be identified by project or core and the name of the subcontractual institution. They should be placed in the application in sequence after the main budget pages for the project or core.

- Do not include Biographical Sketches in the projects, since they are grouped following the Overall Budget for Program Project (see section V. E. of this guide).

- Resources: (PHS 398 Resources Format Page). Follow the instructions on the PHS 398 Resources Format Page. List only those resources specific to the individual project or core.

- Research Plan: (PHS 398 Continuation Page; Instructions for PHS 398, Part 1, Section 5.4.1 and following). Do not exceed **25 pages** for Items 2-5 listed below. All tables, graphs, figures, diagrams, and charts must be included within the 25-page limit. (Follow the Item numbering sequence as given in Part I, Section 5.5).

  1. Introduction to the Project (Resubmission or Revision Applications only - See Section VI of these Guidelines.) Do not exceed **three pages** for Resubmission applications and one page for Revision applications.
  2. Specific Aims. **One page** is recommended.
  3. Background and Significance. **Two to three** pages are recommended.
  4. Preliminary Studies/Progress Report. **Six to eight** pages are recommended.

     A progress report must be provided for renewal/competing renewal applications. Provide the beginning and ending dates for the period covered since the project was last reviewed competitively. Summarize the previous application's specific aims and their status relative to completion. Provide rationale for delay or change of specific aims. Discuss any changes in the specific aims as a result of budget reductions or outcome of research results. Discuss the importance of the findings. Include the complete references to appropriate publications and manuscripts accepted for publication in Item 7 below. For resubmitted/amended applications, include any progress made since the previous submission.
  5. Research Design and Methods. Be succinct. There is no requirement that all 25 total pages allotted for items 2-5 be used.
  6. Inclusion Enrollment Report (Renewal or Revision Application Only) (Include as appropriate.)

  The following specific categories of information are not part of the 25-page maximum but, nevertheless, should be written succinctly:

  7. Progress Report Publication List and Bibliography and References/Literature Cited (PHS 398 Continuation Pages: Instructions for PHS 398, Part 1, Section I-C7, Item g)(Rev. 11/07) For publicly available citations, URLs or PMC submission identification numbers should accompany the full reference. Copies of these publications may no longer be included as appendix material. In either case, the names of all authors, full title, name of book or journal, volume, pages, and year of publication should be listed.

     - Program Research Progress-Related Publications. List all publications and accepted manuscripts which have resulted from the P01 grant. Using an asterisk, denote each publication that is a result of formal collaborations among different projects within the program. Copies of these documents are not to be included in the Appendix material.

     - Bibliography and References/Literature citations. Each citation should include names of all authors, full title, name of book or journal, volume, pages and year of publication.

8. Protection of Human Subjects. (Refer to Part II of the PHS 398: Supplemental Instructions for Preparing the Protection of Human Subjects Section of the Research Plan) (Rev. 11/2007)

9. Inclusion of Women and Minorities (Refer to Part II of the PHS 398 Instructions Sections 4.2 and 5.6) (Rev. 11/2007)

10. Targeted/Planned Enrollment Table (Refer to Part II of the PHS 398 Instructions, Sections 4.3) (Rev. 11/2007)

11. Inclusion of Children (Refer to Part II of the PHS 398 Instructions, Sections 4.4 and 5.7) (Rev. 11/2007)

12. Vertebrate Animals (Refer to Instructions for PHS 398, Part 1, Section 5.5 Sub-Section 12). NIH policy no longer requires Institutional Animal Care and Use Committee (IACUC) approval of the proposed research before NIH peer review of an application. See PHS policy section on Vertebrate Animals and http://grants1.nih.gov/grants/guide/notice-files/NOT-OD-02-064.html. See also the Just-In-Time-Policy. Address all five points relating to vertebrate animal care and use.

13. Select Agent Research (Follow the Instructions for PHS 398, Part 1, Section 5.5, Sub-Section 13) http://www.cdc.gov/od/sap/docs/salist.pdf

14. Multiple PD/PI Leadership Plan: **Not applicable for individual projects and cores**. If the Multiple PD/PI option is used, the Multiple PI Leadership Plan for the program as a whole should be included after the Program Overview section as described above.

15. Consortium/Contractual Arrangements
Explain the programmatic, fiscal, and administrative arrangements to be made between the applicant organization and the consortium organization(s)

16. Letters of Support (eg. Consultants)
(PHS 398 Continuation Pages: Instructions for PHS 398, Part 1, Section 5.5 Sub-Section 16.)
Attach appropriate letters detailing the nature and extent of participation. Group Biographical Sketches for consultants or collaborators with the other key investigators just after the Overall Program Budget.

17. Resource Sharing Plans(s)
(PHS 398 Continuation Pages: Instructions in the PHS 398, Part 1, Section 5.5, Sub-Section 17.

a. Data Sharing Plan: Investigators seeking $500,000 or more in direct costs in any year must include a brief one-paragraph description of how final research data will be shared, or explain why data sharing is not possible. Applicants are encouraged to discuss their data sharing plan with their program contact at the time they negotiate an agreement with the Institute/Center (IC) staff to accept assignment of their application. See Data-Sharing Policy or http://grants1.nih.gov/grants/policy/data_sharing/index.htm.

b. Sharing Model Organisms: Regardless of the amount requested, all NIH applications proposing development of new, genetically modified variants of model

organisms and related resources are expected to include a specific plan for sharing these organisms or state why such sharing will be restricted or not possible. The term "model organism" includes mammalian models (such as the mouse and rat) and non-mammalian models (such as budding yeast, roundworm, Arabidopsis, fruit fly, zebrafish, frog, etc). Examples of model organisms for which sharing plans are expected when new, genetically modified organisms are developed are posted on the NIH Model Organisms for Biomedical Research Web site: http://www.nih.gov/science/models.

c. Genome-Wide Association Studies (GWAS): Regardless of the amount requested, applicants seeking funding for a genome-wide association study are expected to provide a plan for submission of GWAS data to the NIH-designated GWAS data repository, or provide an appropriate explanation why submission to the repository is not possible. GWAS is defined as any study of genetic variation across the entire genome that is designed to identify genetic associations with observable traits (such as blood pressure or weight) or the presence or absence of a disease or condition. For further information see Policy for Sharing of Data Obtained in NIH Supported or Conducted Genome-Wide Association Studies, NIH Guide NOT-OD-07-088, and http://grants.nih.gov/grants/gwas/.

CHECKLIST: Do not include a separate Checklist for each project. For multi-institutional projects, summarize checklist information on one Checklist page with components indicated. Place the Checklist at the end of the completed application.

Personnel Reports are not required for a renewal/competing continuation application.

I. Shared Resource Cores (PHS 398 Continuation Pages)

A Program Project application may include cores that provide for laboratory and clinical facilities, equipment, and/or services to be shared by two or more projects. Cores may contain non–hypothesis-driven research activities provided that the research is to improve core services. For each core component, follow instructions for the Individual Research Project, as described above and in the Instructions to the PHS 398, Part 1, Sections 4.2 through 5.5. The general format for a core component follows that of a project except for the Research Plan. A sample table of contents outline for sections of a core application is provided in Appendix A of these Guidelines.

- Title Page. (Form PHS 398 Continuation Page) Clearly denote the core letter, the title of the core, and the core director's name and educational degree(s). If there is to be more than one core component, prepare a separate section for each core (i.e., Core A, Core B, etc.).
- Description: Core Summary and Relevance
- Detailed Budget for Initial Budget Period
- Budget for Entire Proposed Period of Support
- Biographical Sketch (Do not include Biographical Sketches in the cores, since they are grouped following the Overall Budget for Program Project (see section V.E. of these Guidelines.)
- Resources: (PHS 398 Resources Format Page) Follow the instructions on the PHS 398 Resources Format Page. List only those resources specific to the core.
- Core Services Plan. (**Do not exceed 10 pages for Items 2 through 5.)**
  1. Introduction to the Core for resubmission (amended/revised) applications (one page)
  2. Specific Aims (**half page or less**)
  3. Background and Significance (**one page or less**)

4. Progress Report/Summary of Services in Current Funding Period (**half page**)
5. Methods and Services to be Provided (**remaining pages to a maximum of 10**)

The core service plan should include the rationale for the inclusion of the core in the Program along with a clear description of the methods and services to be provided and plans for prioritization of services (if necessary). The Methods and Services should be described in detail sufficient to characterize the quality and standards of services to be provided and to show how they meet the needs of the projects. Roles of the Core personnel and their qualifications should be described in the Budget Justification.

Include Items 6 through 13 and 15-17 in the PHS 398 instructions as appropriate. Item 14, Multiple PI Leadership Plan, is not applicable to individual cores. If the Multiple PI option is used, the Multiple PI leadership Plan for the program as a whole should be included after the Program Overview.

For competing renewal applications, include a progress report/summary of services in the current funding period. Publications in reference to completed research effort may be listed in Item 7, as described above for Projects.

For Administrative Cores (if included in the P01), the services to be provided may encompass such functions as fiscal management, clerical support, manuscript preparation, meeting organization, data management, and quality control and planning/evaluation. The latter may include plans to establish internal and/or external advisory committees. **NOTE:** Neither internal nor external advisory committees are required.

If an Administrative Core is not part of the P01, these issues must be discussed under "Organization and Administrative Structure" in the Program Overview. In all circumstances, there should be cross reference between the "Organization and Administrative Structure" and the "Administrative Core" so that reviewers can easily find complete information regarding plans for program administration (see Section V, F.7 of these Guidelines). In particular, the application should include a discussion of the decision-making processes involved in the program and the planned mechanisms for promoting communication and collaboration among program investigators. This information is relevant to the evaluation of Program Leadership and Program as an Integrated Effort.

To aid in the review process, it is suggested that a table showing the estimated or actual proportional use of core components by each project be included in the application. (See Appendix C: Sample Table of Distribution of Core Resources). The Program Overview should justify each core component by discussing ways in which these centralized services will provide consistent, high-quality services; produce an economy of effort; and/or save overall costs compared to their inclusion as part of each project in the program.

The shared resource cores within the P01 should not duplicate any available shared core facilities available to the research group. If duplication is necessary, justification should be provided along with an explanation about why these institutional resources cannot be used for the P01 activities. For a P01 application originating from an institution that is supported by an NCI Cancer Center Support Grant (P30), a list of existing Cancer Center Shared Resources/Cores should be included as part of the institutional resources in the Program Overview section. Funds can be requested to augment preexisting P30 Cancer Center or other such resources in order to direct these core support activities towards more effectively fulfilling the needs of the P01. Where practical, use should be made of the Internal Review Board, Data and Safety Monitoring Boards (s), as well as clinical resources available throughout the Cancer Center. Whenever there is dependence on Institute-wide Core Resources, a letter of agreement from the Core Manager/Director should be included.

J. Appendix Materials

Procedures for Submission of Appendix Material differ from the standard PHS 398 Instructions.

Follow the standard instructions in the PHS 398 form for limits on what may be submitted as Appendix materials for each project and core (http://grants1.nih.gov/grants/guide/notice-files/NOT-OD-07-018.html) and for preparing the Appendix materials. Each project and core in the P01 is equivalent to an R01-type application for the purposes of allowable Appendix materials.

All P01 applications submitted on paper on the PHS 398 form are scanned centrally at NIH to make black and white images that are uploaded to the NIH database and used to produce black and white copies for the reviewers. If the application contains color illustrations or charts and graphs that will not reproduce well as black and white images, pdf files of these items should also be included as part of the Appendix Material. However, a photocopy (may be reduced in size) must also be included within the 25-page limit of Items 2-5 of the Research Plan. No images may be included in the Appendix that are not also represented within the Research Plan.

If the application contains color images or small scale black and white images, applicants are encouraged to submit a **CD with a PDF file of the application** with the color images along with the two copies of the application sent to the NCI referral office on the due date. Such CDs will be accepted only at the time of application submission. Bookmark the PDF file at major subdivisions of the application so that reviewers can navigate through the file and find individual components easily.

All **Appendix Materials** for paper applications submitted on the PHS 398 form MUST be submitted on CDs. A summary listing of all the items included in the Appendix is encouraged, but not required. When including a summary, it should be the first file on the CD.

Collect all Appendix Materials for a particular project and core into ONE PDF file. Use a separate file for each project or core, and name the file with the project or core number. Follow the standard instructions for preparing the CDs:

- Use PDF format only. Where possible, applicants should avoid creating PDF files from scanned documents. NIH recommends producing the documents electronically using text or word-processing software and then converting the document to PDF format. Scanned documents generally are of poor quality and difficult to read.
- Label each disk with the Principal Investigator's Name, Grant Number (if available), grant title, and applicant institution.
- If burning CD-ROM disks on a Mac, select the ISO 9660 format.
- Do not use compression techniques for the electronic files.
- Do not use password protection, encryption, digital signature and/or digital certification in the PDF files.

For materials that cannot be submitted on CD (e.g., medical devices, prototypes, video tapes), applicants should contact the Scientific Review Officer for instructions.

Do not submit Appendix materials with the application on the due date. The NCI Scientific Review Officer will give applicants a specific receipt date for submission of Appendix materials.

VI. SPECIAL INSTRUCTIONS FOR PREPARATION OF RESUBMITTED/AMENDED APPLICATIONS

Beginning with new and competing renewal applications submitted for the first time on or after January 25, 2009, the NIH will allow only one resubmission/amendment (A1) (see http://grants.nih.gov/grants/guide/notice-files/NOT-OD-09-003.html).

The receipt dates for resubmission/amended applications are the same as for new and competing renewal applications (see PAR 09-025).

There is no longer a time limit for resubmission of an application. However, it is worth noting that a lengthy hiatus between the initial submission and resubmission may necessitate extensive modification of the research goals and research plan due to significant research advances in the intervening period, thus reducing the relevance of the previous review critiques. Principal Investigators and their institutions need to exercise their best judgment in determining the advisability of submitting a resubmitted/amended application after a significant amount of time has elapsed.

As described in Section III, a resubmitted/amended P01 may include one or more projects that were in the original P01 application but, subsequently, were awarded as a separate grant(s) (i.e., an R01 grant) during the course of the resubmission process. However, all resubmitted/amended P01 applications must include at least two unfunded projects to be accepted for review. Funded projects will be discussed only in terms of the Environment and Integration of the Overall Program. The funded project(s) will be folded into the P01 award at the awarded budget levels and period of support. The application should contain signed agreements from all investigators to these stipulations.

Prepare a resubmitted/amended application according to instructions provided in Section V of these Guidelines. A resubmitted/amended application will be returned without review if substantive changes are not clearly apparent and identified.

A. Each time an application of greater than $500,000 in first-year direct costs is submitted for review, a **new** Letter of Intent must be sent to the NCI Referral Officer 6 weeks in advance of the submission due date. See Section V – Advance Communication with NCI Staff.

B. The Table of Contents should be adjusted to include a listing for the “Introduction to the Resubmitted/Amended Application” before the Program Overview. Similarly, an “Introduction to the Resubmitted/Amended Application” should be inserted before the Research Plan for the individual projects and cores.

   1. The “Introduction to the Resubmitted/Amended Application” section within the Program Overview should not exceed three pages and should provide a general summary of the overall additions, deletions, and changes that have been made.

   2. In each project and core, preceding the Research Plan, Insert an “Introduction to the Resubmitted/Amended Application” that delineates in greater detail the changes made in the research plan. This new section should not exceed 3 pages for the individual component.

C. Incorporate in the Progress Report/Preliminary Results a discussion of any work done since the previous review.

E. Throughout the application text, amended portions or passages must be clearly identified to facilitate the review of the amended aspects of the application. The preferred method is to use a vertical line in the right margin to mark amended areas of the application. An easily differentiable font, such as italics, of the size required in the PHS 398 form, also may be used. Neither grayed background nor strikeout of the old text should be used because of reproduction

of the application and page limits. The application should be assessed for completeness of text updating, correctness of figure labeling, and other editorial details.

VII. SPECIAL INSTRUCTIONS for REVISION/COMPETING SUPPLEMENT APPLICATIONS

Requests for supplemental funds may be submitted only for grants with at least 2 years of support remaining in the current award. Conversely, a revision/supplemental application is not accepted before the original application is awarded funding. The request for supplemental funds needs to have a well-founded basis: unexpected costs and/or pursuance of an unanticipated scientific opportunity; continuation of a currently funded project/core; or inclusion of a new project/core relevant to the goals of the funded program. It should contain sufficient detail to permit an adequate evaluation of the requested expansion of the overall P01. A revision/supplemental application will not be accepted if (a) it is to restore administrative cuts or (b) it does not fit within the theme of the existing P01 or extend the program's scope.

The receipt dates for Revision/competing supplement applications are the same as those for full applications (see PAR-09-025).

If the request for supplemental funds exceeds $500,000, applicants must obtain approval from the NCI by sending a letter of intent to the NCI Referral Office at least 6 weeks prior to the anticipated submission date. Consultation with the program director of the original application may precede the submission of a revised/competing supplement application. (See Section IV – Advance Communication with NCI Staff.)

All the information requested in these Guidelines (Section V above) should be included in the application, but adjusted to the requirements of the supplement as follows:

A. Face Page (PHS 398 Form Page 1; Instructions for PHS 398, Part 1, Section 4.1)

Type "PROGRAM PROJECT" in the top left–hand corner of the face page immediately above the words "GRANT APPLICATION." Complete all items on the face page of the application as in a traditional research grant application. This is page 1 of the application; all succeeding pages should be numbered consecutively. The lead Principal Investigator of the funded P01 must be the lead Principal Investigator for the revised/supplemental application, and the applicant organization must be the awardee institution. The Title should include the grant number of the parent grant.

B. Description, Performance Sites and Key Personnel (PHS 398 Form Pages 2 and Form Page 2-continued; Instructions for PHS 398, Part 1. Sections 4 and 2.8)

The application Description, first, should state very concisely the overall goals of the entire P01and then emphasize the purpose and contribution that the proposed supplemental studies, services, or equipment/facilities will make to the overall theme and goals. Under Performance Sites, list the applicant institution and all other sites where work described in the research plan will be conducted. Key personnel for the entire P01, including consultants and consortium collaborators, if any, should be listed alphabetically. Investigators added specifically for the supplemental funds request should be identified by an asterisk (*).

C. Table of Contents (PHS 398 Research Grant Table of Contents Form Page 3; Instructions for PHS 398, Section I-C3) Follow the Table of Contents as instructed in the PHS 398 and construct the format as needed to reflect the complexity of the revision/supplemental application.

D. Detailed Budget Request Initial Budget Period (PHS 398 Form Page 5; Instructions for PHS 398, Section 4.5)

The PHS 398 Instructions (Part 1, Sections 4. and 2.8) should be followed closely in preparing a detailed composite budget for all requested support for the initial year and subsequent years of the requested supplemental funding. Form Page 4: Detailed Budget for Initial Budget Period should be used for the initial year requested budget. A summary budget for the entire proposed period of support should be prepared using Form Page 5: Budget for Entire Proposed Period of Support of the PHS 398 application. If the supplemental funds request is related to more than one project or core, each component should have separate budget requests and justifications. These secondary budgets should be associated with the specific component.
Immediately after the supplemental funds budget summary tables and justifications, present a detailed composite budget table for all years of the current P01 award (Form Page 5). Label the composite budget table page in the upper left hand corner: CURRENT PROGRAM BUDGET.

F. Biographical Sketch and Other Research Support Information (PHS 398 Biographical Sketch Format Page; Instructions for PHS 398, Part 1, Section I-C6) Follow the instructions on the "Biographical Sketch Format Page." Biographical sketches are required only for the P01 Principal Investigator and for individuals whose efforts are newly included in the request for supplemental funds. In arranging the biographical sketches, the Principal Investigator should be listed first, with other personnel in alphabetical order.

G. Program Overview: Currently Funded Program Project (PHS 398 Continuation Pages)

The Program Overview for a request for revision/supplemental funds application should summarize briefly the overall theme and research goals of the funded program; provide justification for requesting additional supplemental funds; and summarize the progress made in each funded project and core including numbers of publications and identification of completed aims. Typically, four or five pages are sufficient for the Program Overview.

H. Format for the Research Plan (PHS 398 Continuation Pages)

Requests for supplemental funds can be for a new project or core, continuation of a currently funded project/core, an opportunity to follow a new research lead, provision of additional core support, or special equipment to achieve certain program goals. The format for the Research Plan will vary depending on the purpose of the request for revision/supplemental funding.

For each application, at the beginning of the Research Plan, a one-page introduction should be inserted that describes the nature of the request; the relevance of the newly proposed research/new resources to the entire P01; and how the funds will influence the specific aims, research design, and methods of the current grant.

1. Request for new or continuing project/core. The Revision/Competing Supplement application format should follow the instructions as described for a project or core for a new P01 application (See Section V.G.1 or Section V.H.1). Note: A separate Description page is not needed. Instead, the one page Introduction should provide the information normally provided in the Description. If a new research project is proposed or if funds are sought for continuation of a currently funded project, the research plan should include rationale for how the new/continuing project will augment the funded program. The body of the application should contain sufficient information from the original grant application to allow evaluation of the proposed new or extended project in relation to the goals of the original application. Biographical Sketches and Other Support should be included only for newly added personnel.

If the request is for continuation of a project or core funded for a period less than the overall program, it is important to address those factors contributing to the recommendation for a reduced funding period are addressed. Progress reports and key preliminary data should be provided, as well as justification for the time extension.

2. Additional funds for existing project/core. Special requests for unique opportunity or additional resources should include a clear justification for the request based on recent research findings. Requests for funds to purchase equipment to support research effort should also include verification of the requested cost.

3. If the revision/supplemental application relates to a specific line of investigation presented in the original application that was not recommended for support by the previous review panel, the application must respond to the criticisms in the prior Summary Statement.

   Two copies of the application should be sent to the NCI Referral Office. The original document and three copies should be sent to the Center for Scientific Review. All CDs with Appendix material should be submitted with the copies sent to the NCI Referral Office.

VIII. APPLICATION SUBMISSION PROCESS

A. Specific Application Due Dates are given in PAR 09-025. The review schedules for all P01 applications submitted to the NCI, including all new, competing renewal, resubmitted/amended, and revised/supplemental applications, are presented in the table below. Incomplete applications will be deferred to the next review cycle or administratively withdrawn and returned to the applicant without review. All competing renewal applications should be submitted in a timely fashion to avoid a possible gap in support for the program. Please note that the NCI Executive Committee has reaffirmed that applicants must submit competing renewal applications only on the originally scheduled submission date (ordinarily 9 months prior to the end date of the award), to ensure applications are considered for funding with their proper cohort and to conserve NCI staff resources. Therefore, the Division of Extramural Activities will defer to the appropriate later round(s) the review of all renewal applications submitted prematurely.

Letter of Intent*	**Application Due Dates (see PAR-09-025 for specific date for each review cycle)****	**Initial Review**	**NCAB Review**	**Earliest Possible Start Date**
4 weeks before receipt date	January	May/June	September	December 1
4 weeks before receipt date	May	September/October	February	April 1
4 weeks before receipt date	September	January/February	June	July 1

***NOTE: Applicants must contact the NCI Referral Office at least SIX weeks prior to the Application Due Date if the requested budget will be in excess of $500,000 direct costs in any year. This notification must be repeated each time the application is submitted or if the application is delayed to a subsequent review cycle**.

**Request For Applications announcements for P01s may prescribe different Letter of Intent, receipt, and review dates.

B. General instructions for submission of an NCI P01 Grant Application are described in the PHS 398 (Part I Section 3). It is expected that a Cover Letter will be included with the original

application. The letter is only for internal agency use and will not be shared with peer reviewers. Place the letter at the beginning of the original application; do not copy it. The letter should include:

- Application title
- Funding Opportunity Announcement number and title.
- Request of an assignment (referral) to the National Cancer Institute and an NCI Special Emphasis Panel. While the requests are given careful consideration, the final decisions are made within the NCI.
- Expertise appropriate for review of the application.

C. Packing and Submission of the application and copies.

Mail the **original** and **three** identical, single-sided copies of the complete application to the NIH Center for Scientific Review (CSR) using the address label included in the PHS 398 application kit. DO NOT BUNDLE SECTIONS OF THE APPLICATION SEPARATELY since this will cause problems with processing the application in the CSR. Use rubber bands or string to package an individual application as one document. Applications must be sent by U.S. mail or by commercial carrier. Personally delivered packages will not be accepted by the CSR mailroom.

Center for Scientific Review
National Institutes of Health
6701 Rockledge Drive, Suite 1040
MSC 7710
Bethesda, MD 20892-7710 (for United States Postal Service (USPS) Express or Regular Mail
Or
Bethesda, MD 20817 (Express/Courier Non-USPS Service)

Send **Two** identical, single-sided copies of the original application and **One** CD with a PDF version of the application **(optional)** under separate cover to:

Referral Officer
Program Coordination and Referral Branch
Office of Referral, Review and Program Coordination
Division of Extramural Activities
National Cancer Institute
6116 Executive Blvd., Room 8040A, MSC 8329
BETHESDA, MD 20892-8329 (for U.S. Postal Service express or regular mail)
Rockville, MD 20852 (for non-USPS delivery)
301-496-3428
301-402-0275 (FAX)
ncirefof@dea.nci.nih.gov

IX. REVIEW PROCEDURES

A. Policies

The NCI Scientific Review Officer (SRO) serves as the Designated Federal Official (DFO) with legal responsibility for managing the review and ensuring that the review is conducted according to relevant laws, regulations, policies, and established NIH and NCI policies and procedures. The SRO provides guidance and direction with respect to review procedures and criteria; the need for a well-documented review; the functions of the NCI staff; conflict of interest policies; implications of the Privacy Act; the need for confidentiality of the proceedings; the necessity of addressing gender, minority, and children representation in clinical study

populations; and other policy and logistical matters. The NCI program director serves as a resource, as needed, concerning the history and development of the program, changes in program direction, and other relevant program matters.

- The NCI is committed to the conduct of impartial, high-quality peer review of grant applications submitted by the scientific community and to the maintenance of an objective review process.
- The Research Programs Review Branch, Division of Extramural Activities, which is responsible for managing the peer review of NCI P01 applications, is organizationally independent from the NCI extramural program units. The Research Programs Review Branch has responsibility for, and autonomy in, the conduct of initial review activities.
- The conduct of peer review shall be in all particulars consistent with, and subject to, NIH and PHS peer review practices and policies.
- Review staff members are responsible for managing the scientific and technical review of P01 applications, including the selection of reviewers; management of SEPs; and the documentation of review panel findings and recommendations.
- The responsibility for communications between the applicant and NCI staff changes during the various phases of the application process. Prior to submission of the application, NCI extramural program staff members are the appropriate contact. From submission of the application until the initial peer review has been completed, all contacts should be made through the SRO. Following the peer review, program staff members again become the contact for communications with the applicant.
- Efforts are made to avoid both real and apparent conflict of interest in review of P01 applications. In addition, the confidentiality of both review materials and reviewer deliberations is maintained. Direct contact between applicants and reviewers is prohibited. Instead, any questions or concerns should be brought to the attention of appropriate NCI staff as indicated above.
- To maintain the focus of the peer review process on scientific merit, current pay lines and funding policies are not discussed.

B. Application Receipt and Referral

Program Project applications, like all other PHS grant applications, are received and initially processed by the NIH Center for Scientific Review (CSR). Following the current National Cancer Institute referral guidelines, the application is assigned to NCI. The NCI referral office subsequently assigns the application to a program area. Finally, RPRB review staff assign the application to a particular SRO who convenes an appropriate SEP and manages the review. Applications that do not meet the referral guidelines for NCI programs are referred to another NIH institute.

C. Application Administrative Review

Upon receipt, the SRO reviews the application for conformance to NIH policies and NCI Guidelines. If the deficiencies can be resolved easily post-submission, then the contact Principal Investigator is notified and remedial action is taken. If the deficiencies are extensive or cannot be resolved quickly, the application will be returned to the applicant without further consideration.

D. Review Format

All review panels are constituted as Special Emphasis Panels. The SEP reviewers evaluate and score projects, cores, and program integration, and assign the overall priority score to each application.

Applications are grouped for review based on scientific research areas and general technical approaches. New, competing renewal, resubmitted/amended and revision/supplemental applications are therefore reviewed together. Areas of science typically grouped together for review are described in Appendix D.

The SEP membership will include senior investigators who can view the proposed science from a global perspective and specialists for specific scientific areas. Key members of the previous review panel will be included for continuity of review of resubmitted/amended applications. In organizing the review panel membership, conflicts of interest, either real or apparent, will be managed according to NIH policy on conflict of interest. Applicant investigators involved with program project applications submitted for the same review cycle are considered in conflict since they are competing for the same pool of funds.

The SEP meeting date will be determined by the NCI SRO according to the availability of a suitable Chairperson and senior investigators.

The SEP will convene in a face-to-face meeting in the Washington, DC, metropolitan area or elsewhere at the convenience of the reviewers. The SRO will provide an introductory orientation on NIH and NCI review policies and procedures and administrative and logistical matters relating to the review. Then, each application will be evaluated by the reviewers. The reviewers will have the option to streamline the review and unscore applications that fall in the bottom tier of all P01 applications normally seen for review by NCI. For applications that are discussed, the reviewers will discuss and rate each project and core component and program integration and then discuss the overall program. The review panel will assign the final overall priority score to the application.

NCI SROs will prepare the summary statement using the minimally edited reviewers' comments and summaries of discussion prepared by selected SEP members and/or the SRO.

E. Communications with the Lead Principal Investigator

The SRO will contact the Lead Principal Investigator to obtain background information relevant to the application and names of investigators in collaboration with the members of the applicant group and other investigators who may be in conflict with the group. Applicants may suggest types of expertise that are required to review the application properly. However, **NIH policy prohibits either the SRO or the program director assigned to the application from asking for or receiving names of potential reviewers from any member of the applicant group either directly or indirectly.**

Applicants may also submit a short list of investigators who should not be included as reviewers because they would not be objective about the proposed work and provide justification for the list. The final decision, however, rests with the SRO responsible for the review.

The SRO will provide a deadline for submission of a small amount of supplemental data that can be forwarded to the reviewers electronically. This deadline generally will be several weeks prior to the review so that all reviewers have adequate time to study and evaluate the information. Major changes in scope of the projects or cores cannot be accepted after submission of the application.

F. Communications with NCI Staff

Shortly after receipt of the application, the SRO contacts appropriate NCI program staff and other individuals for supplemental information and recommendations for prospective reviewers where appropriate. Program and/or grants management staff members discuss with the SRO any unusual features of the application which might require additional material for reviewers, or any special problems that they anticipate in the review of the application. All review-related communications with actual or potential reviewers are through the SRO.

G. Selection of Reviewers

The size and composition of each SEP review panel will be determined by the particular details of the applications to be reviewed. It is the responsibility of the SRO to make these determinations based upon thorough understanding of the work proposed in the applications and consultation with program and review staff. In identifying prospective qualified reviewers, the SRO takes full advantage of many available resources, including existing databases of experienced reviewers, lists of grantees and contractors, and consultation with recognized authorities in the scientific community. The SRO, as well as program staff, will identify reviewers who, because of collaboration, affiliation, or bias, should be excluded from the review. **As noted above, applicants are prohibited from suggesting names of prospective reviewers.** However, applicants may suggest expertise areas appropriate for inclusion in the review panel. Resubmitted/amended applications will have some of the previous reviewers but there also will be new reviewers assigned to the application.

The Chairperson of the review panel will generally be a senior investigator experienced in the review of complex multidisciplinary applications and generally knowledgeable in the broad scientific areas to be reviewed. The Chairperson will have the responsibility of seeing that each application receives a fair allocation of discussion time and that the scoring guidelines are given full consideration when assigning merit ratings to the rated sections of the application. Each application will have an assigned Discussion Leader who has the responsibility to introduce the application by listing research scope, goals and approach including brief descriptions of each project and core. The Discussion Leader will also draft a summary of the committee discussion of the overall program.

The review panel membership will reflect a balance in terms of experience, expertise, and specialty to afford peer review of each application. A consultant experienced in management and fiscal administration may be included if applications with complex consortium arrangements are to be reviewed. For applications including clinical or population-based studies, a patient advocate/consumer will be included in the review group. These individuals, who have full scoring privileges, will address issues related to protection, recruitment and retention of human subjects in the proposed research.

The SEP roster will be available on the NIH Web site (http://era.nih.gov/roster/#sep) approximately 30 days before the review meeting.

X. REVIEW CRITERIA

Peer review of NCI P01 applications emphasizes a synthesis of two major aspects of the P01 application: (1) review of the merit of each individual research project and core and (2) review of the overall program as an integrated research effort focused on a central theme.

The review criteria for both the overall program and the individual projects are Significance, Investigators, Approach, Innovation, and Environment (NIH Guide Notice **NOT-OD-09-025,** December 2, 2008 – see http://grants.nih.gov/grants/guide/notice-files/NOT-OD-09-024.html).

The sections below give more detail about how these review criteria are applied to the overall program and the individual projects.

The mission of the NIH is to support science in pursuit of knowledge about the biology and behavior of living systems and to apply that knowledge to extend healthy life and reduce the burdens of illness and disability. As part of this mission, applications submitted to the NIH for grants or cooperative agreements to support biomedical and behavioral research are evaluated for scientific and technical merit through the NIH peer review system.

Reviewers will consider each of the review criteria in the determination of scientific and technical merit of the program. A program does not need to be strong in all categories to be judged likely to have a major scientific impact. For example, a project or an overall program that by its nature is not innovative may be essential to advance a field.

A. Review Criteria for the Overall Program

The following criteria will be used to evaluate the likelihood that the program as a whole will exert a sustained, powerful influence on the research field(s) involved:

- **Significance:** Does the program as a whole address an important problem or a critical barrier to progress in the field? If the aims of the program are achieved, how will scientific knowledge, technical capability, and/or clinical practice be improved? How will successful completion of the program change the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field?
- **Investigators:** Are the qualifications of the PD(s)/PI(s) and other senior scientists appropriate to lead the P01 and coordinate all P01 activities? Do they provide effective scientific and administrative leadership, as demonstrated by selection of individual projects for scientific excellence and thematic relatedness? Is the commitment (percent effort) of the PD(s)/PI(s) and other senior investigators adequate?
- **Approach:** Is the overall design of the P01, including strategies, methodologies, and analyses, well-reasoned and appropriate to accomplish the specific aims of the program? What is the overall quality of the projects and the adequacy of services provided by the cores (if proposed)? For competing renewal applications, has there been adequate progress during the current funding period? For applications designating multiple PDs/PIs, is the leadership approach, including the designated roles and responsibilities, governance, and organizational structure, consistent with and justified by the aims of the program and the expertise of each of the PDs/PIs?

  If the program involves clinical research, are the plans for 1) protection of human subjects from research risks, and 2) inclusion of minorities and members of both sexes/genders, as well as the inclusion of children, justified in terms of the scientific goals and research strategy proposed?
- **Innovation:** To what degree does the overall program challenge and seek to shift current research or clinical practice paradigms by utilizing novel theoretical concepts, approaches or methodologies, instrumentation, or interventions? Are the concepts, approaches or methodologies, instrumentation, or interventions novel to one field of research or novel in a broad sense? Is a refinement, improvement, or new application of theoretical concepts, approaches or methodologies, instrumentation, or interventions proposed?
- **Environment:** 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 program adequate for the project proposed? Will the program

benefit from unique features of the scientific environment, subject populations, or collaborative arrangements?

- **Integration:** Is there evidence of scientific and administrative integration of the proposed Program? Is there evidence of coordination, interrelationships, and synergy among the individual research projects and core components? Are there clear advantages or "value added" by conducting the proposed research as a Program Project rather than through separate research efforts? For competing renewal applications, is there evidence of productive collaborations during the current funding period?

B. Review Criteria for Individual Research Projects. Before the review meeting, each reviewer and discussant assigned to an application will give a separate score for each of five core review criteria (Significance, Investigator(s), Innovation, Approach, and Environment). For all applications, even those not discussed by the full committee, the scores of the assigned reviewers and discussant(s) for these criteria will be reported individually on the summary statement.

- **Significance:** 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 be improved? How will successful completion of the aims change the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field?
- **Investigators:** Are the Project Leaders, collaborators, and other researchers well suited to the project? If Early Stage Investigators or New Investigators, do they have appropriate experience and training? If established, have they demonstrated an ongoing record of accomplishments that have advanced their field(s)? If the project is collaborative, do the investigators have complementary and integrated expertise; are their leadership approach, governance and organizational structure appropriate for the project?
- **Approach:** Are the overall strategy, methodology, and analyses 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?
  If the project involves clinical research, are the plans for (1) protection of human subjects from research risks and (2) inclusion of minorities and members of both sexes/genders, as well as the inclusion of children, justified in terms of the scientific goals and research strategy proposed?
- **Innovation:** Does the project challenge and seek to shift current research or clinical practice paradigms by utilizing novel theoretical concepts, approaches or methodologies, instrumentation, or interventions? Are the concepts, approaches or methodologies, instrumentation, or interventions novel to one field of research or novel in a broad sense? Is a refinement, improvement, or new application of theoretical concepts, approaches or methodologies, instrumentation, or interventions proposed?
- **Environment:** 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, subject populations, or collaborative arrangements?

C. Review Criteria for Shared Resource Core(s) (If Applicable)

Each Shared Resource Core must provide essential functions or services for at least **two** projects. The merit of each core will be assessed based on the following criteria:

- Is the proposed Shared Resource Core well matched to the needs of the overall program? Does it provide essential facilities or services for two or more scored research projects?

- Are there adequate quality control processes proposed for the facilities or services provided by the Shared Resource Core (including procedures, techniques, and quality control)? What are the criteria for prioritization and usage of Core products and/or services?

- Are the qualifications, experience, and commitment of the Shared Resource Core Director(s) and other key personnel adequate and appropriate for providing the proposed facilities or services?

- Will the proposed core(s) provide cost effective services to the Program? Are there adequate plans to augment and/or complement an existing shared resource supported by an NCI Cancer Center Support grant (P30), if applicable?

D. Progress (for renewal/competing continuation programs only)

- Has adequate progress been made in both projects and cores since the previous competitive review?

- Were the previous specific aims accomplished, and are the proposed research goals logical extensions of work during the current funding period?

- Has scientific synergy occurred, as indicated by joint publications and new collaborative aims and/or projects?

- Is there adequate justification for adding new projects and/or deleting previous components?

E. Additional Review Criteria

In addition to the above criteria, the following items will continue to be considered in the determination of scientific merit and the rating:

- Resubmission Applications (formerly “revised/amended” applications): When reviewing a Resubmission application (formerly called an amended application), the committee will evaluate the application as now presented, taking into consideration the responses to comments from the previous scientific review group and changes made to the projects, cores (if applicable), and the overall program.

- Protection of Human Subjects from Research Risk: For research that involves human subjects but does not involve one of the six categories of research that are exempt under 45 CFR Part 46, the committee will evaluate the justification for involvement of human subjects and the proposed protections from research risk relating to their participation according to the following five review criteria: (1) risk to subjects, (2) adequacy of protection against risks, (3) potential benefits to the subjects and others, (4) importance of the knowledge to be gained, and (5) data and safety monitoring for clinical trials. For research that involves human subjects and meets the criteria for one or more of the six categories of research that are exempt under 45 CFR Part 46, the committee will

evaluate: (1) the justification for the exemption, (2) human subjects involvement and characteristics, and (3) sources of materials.

- Inclusion of Women, Minorities and Children in Research: The adequacy of plans to include subjects from both genders, all racial and ethnic groups (and subgroups), and children as appropriate for the scientific goals of the research will be assessed. Plans for the recruitment and retention of subjects also will be evaluated (see the Research Plan section on Human Subjects in the PHS 398 instructions).

- Care and use of Vertebrate Animals in Research: The committee will evaluate the involvement of live vertebrate animals as part of the scientific assessment according to the following five points: (1) proposed use of the animals, and species, strains, ages, sex, and numbers to be used; (2) justifications for the use of animals and for the appropriateness of the species and numbers proposed; (3) adequacy of veterinary care; (4) procedures for limiting discomfort, distress, pain and injury to that which is unavoidable in the conduct of scientifically sound research including the use of analgesic, anesthetic, and tranquilizing drugs and/or comfortable restraining devices; and (5) methods of euthanasia and reason for selection if not consistent with the AVMA Guidelines on Euthanasia.

- Biohazards: If materials or procedures are proposed that are potentially hazardous to research personnel and/or the environment, determine if the proposed protection is adequate.

F. Additional Review Considerations

Budget: The reasonableness of the proposed budget and the requested period of support in relation to the proposed research. The priority score should not be affected by the evaluation of the budget

G. Scoring

Projects are scored numerically using the standard NIH 1 – 9 scoring scale. Cores are rated Superior, Satisfactory, Minimally Satisfactory, or Not Recommended for Further Consideration (NRFC).

For each application that is discussed, a final impact score will be given by each eligible committee member (without conflicts of interest). Each member's impact score will reflect his/her evaluation of the overall impact that the program as a whole is likely to have on the research field(s) involved, rather than a weighted average applied to the reviewer's scores given to each project or core.

Reviewers will focus on the meritorious projects and cores of the program, excluding any components not recommended for further consideration, in assigning the final overall impact score. However, inclusion of components of poor quality or unrelated to the main theme of the P01 will be considered evidence of poor judgment by the Principal Investigator(s) and the program senior leadership. Reviewers do not have the option to select only the better components of the program to improve the overall impact score.

If an application is found to have very low merit relative and thus unlikely to have impact relative to all P01 applications normally received by the NCI, the review panel may expedite the discussion or not discuss the application. An application can be not recommended for further consideration if it does not have three scored projects or poses serious risks to human subjects or lacks adequate plans for animal care and welfare.

XI. SUMMARY STATEMENT

The findings and recommendations of the reviewers are summarized in a written report called the summary statement that accurately conveys the evaluation of the P01 application. The summary statement for applications discussed fully during the review meeting will include a Resume and Summary of Discussion, an Overall Critique addressing the strengths and weaknesses of the Overall Program and summary paragraphs addressing the strengths and weaknesses of each project and core, and the essentially unedited critiques from reviewers assigned to each project and core. The individual reviewers' critiques, which were prepared prior to the review meeting, may not always be updated to reflect their final opinions after the discussion.

For applications that were not discussed during the meeting, the summary statement may not include an Overall Critique section, but it will include the individual reviewers' essentially unedited critiques for all projects and cores.

The summary statement will be transmitted to the NCAB for advisory review, to the NCI official file and to the appropriate NCI staff. The applicant can access the summary statement through the NIH eRA Commons (http://commons.era.nih.gov) shortly after it has been released by NCI review staff.

XII. AWARD

The award and administration of P01s are subject to the same policies and procedures as other research grants. These policies and cost principles are set forth in the current PHS Grants Policy Statement, other NIH and NCI issuances and Federal legislation and regulations.

Following review by the NCAB, scored applications are considered for funding by the NCI. When an award is made, it is the policy of NCI that meritorious projects reviewed as part of the P01 be funded as part of the P01 even though other funding may be available. Duplicate funding will not be awarded.

NCI program staff may administratively delete funding or reduce the duration of support for components of P01s that are judged by peer review to be less meritorious and/or nonessential to the conduct of the P01.

XIII. QUESTIONS

Questions related to NCI P01 review may be directed to:

Virginia P. Wray, Ph.D.
Deputy Chief
Research Programs Review Branch
Division of Extramural Activities
National Cancer Institute
6116 Executive Boulevard, Room 8125, MSC 8328
Bethesda, MD 20892-8328
Rockville, MD 20852 (Express Mail)
Telephone: (301) 496-9236
FAX: (301) 496-6497
E-mail: vw8z@nih.gov

APPENDIX A

SAMPLE TABLE OF CONTENTS

SECTION I

Face Page
Description, Project/Performance Sites, Senior/Key Personnel, Other Significant Contributors and Human Embryonic Stem Cells
Table of Contents
Detailed Summary Budget for Program Project Initial Budget Period
Budget for Entire Proposed Program Project Period Direct Costs Only
Biographical Sketches

SECTION II

Program Overview
- Introduction to Application
- Specific Aims
- Background and Significance
- List of Project and core components in tabular form (by title and investigator)
- Preliminary Studies (For New and Renewal Applications)/Progress Report (Renewal Applications)
- Overall Research Design and Methods
- Organization, Administrative, and Program Management Structure
- Institutional Environment and Resources
- Literature Cited with complete titles, authors, and electronic references
- Institutional Letters of Support

Multiple PD/PI Leadership Plan (Required if Multiple PD/PIs are proposed)

Individual Research Project 1
- Title Page (Title, Project Leader Name, Degree)
- Description, Performance Sites, Senior/Key Personnel, Other Significant Contributors, and Human Embryonic Stem Cells
- Detailed Budget for Initial Budget Period
- Budget for Entire Proposed Period of Support
- Resources and Environment
- Detailed Budget for First 12-Month Period for Any Included Consortium/Subcontract Arrangement
- Budget Estimate for Each Year of Any Included Consortium/Subcontract Arrangement
- Resources for Consortium/Subcontract Arrangement
- Research Plan
  1. Introduction to Resubmission Application (if applicable) or Introduction to Revision Application (if applicable)
  2. Specific Aims
  3. Background and Significance
  4. Preliminary Studies/Progress Report
  5. Research Design and Methods

6. Inclusion Enrollment Report (Renewal or Revision Applications Only)
7. Bibliography and References Cited/Progress Report Publication List
8. Protection of Human Subjects
9. Inclusion of Women and Minorities
10. Targeted/Planned Enrollment Table
11. Inclusion of Children
12. Vertebrate Animals
13. Select Agent Research
14. Multiple Project Director/Principal Investigator (PD/PI) Leadership Plan (Not applicable for individual projects)
15. Consortium/Contractual Arrangements
16. Letters of Support
17. Resource Sharing Plan (s)

Core Component A

Title Page (Title, Core Director Name, Degree)
Description of Core Service Plan, Performance Sites, and Key Personnel
Budget for the First 12-Month Period
Budget Estimate for Each Year of Requested Support
Core Services Plan

1. Introduction to Core (Resubmission or Revision Applications only)
2. Specific Aims
3. Background and Significance
4. Progress Report/Summary of Services in Current Funding Period
5. Methods and Services to be Provided
6. Inclusion Enrollment Report (Renewal or Revision Applications only) If appropriate
7. Bibliography and References Cited/Progress Report Publication list
8. Protection of Human Subjects
9. Inclusion of Women and Minorities
10. Targeted/Planned Enrollment Table
11. Inclusion of Children
12. Vertebrate Animals
13. Select Agent Research
14. Multiple Project Director/Principal Investigator (PD/PI) Leadership Plan (Not applicable for individual cores)
15. Consortium/Contractual Arrangements
16. Letters of Support
17. Resource Sharing Plan (s)

Checklist(s) For each participant institution

APPENDIX B

(SAMPLE TABLE)
DISTRIBUTION OF PROFESSIONAL EFFORT (%)
ON THIS APPLICATION

Participating Investigator	Project 1	Project 2	Project 3	Project 4	Core A	Core B	Core C	Application Total
Dr. A. (Principal Investigator)	20*		15		15*			50
Dr. B.						10*		10
Dr. C.		25*	10				20*	55
Dr. D.				30*				30
Dr. E.	30		30*					60
Dr. F.						30		30
Dr. G.		25					25	50
Dr. H.							25	25
Dr. I.				50				50

*Project Leader/Core Director
First lines should be reserved for project and core directors; other investigators should follow thereafter.

APPENDIX C

(SAMPLE TABLE)
PERCENTAGE DISTRIBUTION OF SCIENTIFIC CORE
RESEARCH RESOURCES TO PROJECTS

Project	Project 1	Project 2	Project 3	Project 4	Project 5	Total (100%)
Core A: Bioinformatics	20		40	40		100
Core B: Animal Maintenance	50			50		100
Core C: Administration		30	40		30	100

APPENDIX D

TOPICS TYPICALLY GROUPED FOR REVIEW BY NCI P01 SPECIAL EMPHASIS PANELS (SEPs)

MOLECULAR ONCOLOGY

- Biological, viral, physical, and chemical carcinogenesis;
- DNA replication, damage, and repair;
- Basic studies of radiation biology;
- Gene expression and regulation;
- Molecular genetics;
- Structural biology;
- Cell cycle and signaling pathways; and
- Cellular immortalization, senescence, and death pathways.

CELLULAR AND TISSUE BIOLOGY

- Tumor microenvironment;
- Angiogenesis;
- Tumor cell biology;
- Basic mechanisms of tumor progression, invasion, and metastasis;
- Cellular differentiation, hematopoiesis and stem cell biology;
- Cellular and tissue organization;
- Basic studies of immune mechanisms and vaccine development, and
- Viral and microbial-host interactions.

PREVENTION, CONTROL AND POPULATION SCIENCES

- Population-based studies in the areas of cancer prevention and control;
- Cancer epidemiology, risk analysis, genetic and environmental factors;
- Health services, delivery and outcomes;
- Surveillance;
- Geographic information systems, modeling and cancer trends;
- Nutrition, diet, and energy balance;
- Cancer survivorship and quality of life;
- Behavioral interventions; and
- Health informatics and cancer communications.

DISCOVERY AND DEVELOPMENT

- Clinical validation of biomarkers for risk, early detection, diagnostic, prognosis, and progression;
- Discovery, development, and delivery of new therapeutics through phase 0 studies;
- Validation of novel preclinical models for anticancer drug evaluation;
- Basic, applied, preclinical, and clinical aspects of medical imaging systems and related technologies; and
- Technology development including diagnostics, genomics, proteomics, and bioinformatics.

CLINICAL STUDIES

- Immunotherapy and vaccines,
- Cellular transplantation;
- Chemotherapy including chemoprevention;
- Gene therapy;
- Radiotherapy including hyperthermia and photodynamic therapy;
- Molecularly targeted therapy and
- Surgery