GUIDELINES FOR REVIEWERS' WRITTEN COMMENTS
SMALL GRANT PROGRAM FOR NIDDK K08/K23 RECIPIENTS (R03)

The NIH R03 small grant is a mechanism for supporting discrete, well-defined projects that realistically can be completed in two years and that require limited levels of funding. Because the research plan is restricted to 10 pages, an R03 grant application will not have the same level of detail or extensive discussion found in an R01 application. Accordingly, reviewers should evaluate the conceptual framework and general approach to the problem, placing less emphasis on methodological details and certain indicators traditionally used in evaluating the scientific merit of R01 applications including supportive preliminary data. Appropriate justification for the proposed work can be provided through literature citations, data from other sources, or from investigator-generated data. Preliminary data are not required, particularly in applications proposing pilot or feasibility studies.

This R03 award is intended to provide additional research support as the K08 or K23 recipient transitions to independent investigator status. The scientific directions of the proposed project may not have been anticipated by the project originally outlined in the K08 or K23 application, but instead may reflect the emerging research focus of the investigator as a consequence of that research. Include additional headings when they seem appropriate to the review. Refer to the NIH program announcement on the enclosed CD for more detail about the award. The format outlined below should be followed in preparing your comments for each R03 application assigned to you. Include additional headings when they seem appropriate to the review. If this is an amended application, address progress, changes, and responses to the critique from the previous review, indicating whether the application is improved, the same as, or worse than the previous submission. However, you are not constrained to address only the points identified in the previous review. These comments on progress and/or responsiveness to previous critiques may be provided either in a separate paragraph and/or under the appropriate criteria.

The Primary (1) and Secondary (1) reviewers should each address all of the review criteria outlined below. The Secondary (2) or Discussant reviewer will prepare a brief written critique. A short paragraph highlighting the strengths and weaknesses of the application or bulleted lists of strengths and weaknesses are both examples of acceptable critiques written by the Secondary (2) or Discussant reviewer. If you prefer to prepare a full critique equivalent to a Primary (1) or Secondary (1) reviewer, you also have that option. The scientific review group will address and consider each of the following criteria in assigning the application's overall score, weighting them as appropriate for each application. The application does not need to be strong in all categories to receive a high priority score. These criteria are listed in logical order and not in order of priority.

Overall Evaluation: In a brief paragraph, indicate the major strengths and weaknesses of the proposed program as a means of enhancing the candidate's research career and how these factors determine your overall merit rating of the application.

Significance: Does this study address an important problem? If the aims of the application are achieved, how will scientific knowledge or clinical practice be advanced? What will be the effect of these studies on the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field? Is there an adequate explanation and justification included that documents how the proposed R03 support will affect plans and enhance the progress of the K08/K23 awardee? **How likely is it that the proposed work will lead to an independent line of investigation for the applicant, distinct from that of his/her mentor?**

Approach: Are the conceptual or clinical framework, design, methods, and analyses adequately developed, well integrated, well reasoned, and appropriate to the aims of the project? Does the applicant acknowledge potential problem areas and consider alternative tactics? **How feasible is the research plan for two years of work?**

Innovation: Is the project original and innovative? For example: Does the project challenge existing paradigms or clinical practice; address an innovative hypothesis or critical barrier to progress in the field? Does the project develop or employ novel concepts, approaches, methodologies, tools, or technologies for this area? **Have the research goals of the current application diverged from the original K08/K23 aims? If the original "K" award goals have been modified, is an explanation of the changes and reasons satisfactory?**

Investigators: Are the investigators appropriately trained and well suited to carry out this work? Is the work proposed appropriate to the experience level of the principal investigator and other researchers? Does the investigative team bring complementary and integrated expertise to the project (if applicable)? What has the

applicant accomplished to date toward the goals of the awarded K08/K23? What is the potential of this mechanism to successfully prepare the applicant to be competitive for funding opportunities at the end of the award? Does the mentor's letter adequately discuss the applicant's progress and potential to become an independent investigator? What is the continuing relationship between the applicant and the mentor?

Environment: Does the scientific environment in which the work will be done contribute to the probability of success? Do the proposed studies benefit from unique features of the scientific environment, or subject populations, or employ useful collaborative arrangements? Is there evidence of institutional support? Is there evidence of continued commitment by the sponsoring institution to the applicant via available and adequate facilities, educational resources and opportunities, as well as continued mentorship?

Protection of Human Subjects from Research Risks: Explain concerns regarding the proposed use of human subjects, including any possible physical, psychological, or social injury individuals might experience while participating as subjects in the research. Indicate whether their rights and welfare will be protected adequately or whether they may be subjected to ethically questionable procedures. For additional information, refer to the "NIH Instructions to Reviewers for Evaluating Research Involving Human Subjects in Grant and Cooperative Agreement Applications" which is included on the CD.

Data Safety Monitoring Plan: If a data and safety monitoring plan is required, indicate if it is adequate.

Inclusion of Women, Children, and Minorities Plans: Determine if an appropriate balance of gender and minority representation in the study population will be sought, if this is scientifically acceptable, and justify the gender and minority codes to be assigned. Determine whether children **(individuals under 21 years of age)** have been included in the research and if their inclusion or exclusion has been explained adequately to justify the code to be assigned.

Vertebrate Animal Welfare: If animals are to be used in the project, discuss if their use is justified and if they will be given proper care and humane treatment so that they will not suffer unnecessary discomfort, pain, or injury. The five items described under Section F of the PHS Form 398 research grant application instructions should have been addressed by the candidate. This includes (a) a detailed description of the use of animals in the proposed research including the identification of the species, strains, ages, sex, and numbers of animals required; (b) the rationale for using animals and the appropriateness of the species and numbers of animals to be used for the proposed research; (c) a complete description of the veterinary care of the animals being used; (d) an assurance that discomfort, distress, pain, and injury to animals will be limited to that which is unavoidable in the conduct of scientifically sound research and that analgesic, anesthetic, and tranquilizing drugs will be employed where appropriate to minimize discomfort, distress, pain, and injury; and (e) a description of any euthanasia method to be applied. Express any comments or concerns about the appropriateness of the responses to the five required points, especially whether the procedures will be limited to those that are unavoidable in the conduct of scientifically sound research.

Biohazards: Describe any potentially hazardous materials and procedures and whether the protection to be provided will be adequate.

Budget: Comment on the reasonableness of the proposed budget and the requested period of support in relation to the proposed research. Is the percent effort listed for the PD/PI appropriate for the work proposed? Is each budget category realistic and justified in terms of the aims and methods? Up to $50,000 per year is allowed for salary, tuition, fees, and books related to career development; research expenses such as supplies, equipment, and technical personnel; travel to research meetings or training; and statistical services including personnel and computer time.

Model Organism Sharing Plan: All NIH applications that plan to produce new, genetically modified variants of model organisms and related resources are expected to include a sharing plan or to state why such sharing is restricted or not possible. Please comment on the adequacy of the sharing plan, taking into consideration the organism, the timeline, and the applicant's decision to distribute the resource or deposit it in a repository. Your assessment of the sharing plan will not be factored into the priority score of the application. Your comments will be captured in an administrative note.