National Institutes of Health (NIH)
K (Career Development)
Guidelines and Template

Template begins on page 11

Important: Information contained in this document is designed to be helpful and does not guarantee funding.

Please refer to the following Web site for current information:
K Kiosk - Information about NIH Career Development Awards

http://grants.nih.gov/training/careerdevelopmentawards.htm

We welcome your feedback. Please contact
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Helpful Guidelines

Please refer to the following links for helpful information about writing, reviewing and scoring R01 applications.

K Kiosk: Information about NIH Career Development Awards

http://grants.nih.gov/training/careerdevelopmentawards.htm

Table of Page Limits

http://grants.nih.gov/grants/forms_page_limits.htm#train

Guidelines and Fill-able Templates for Reviewers


Review Criteria and Considerations

https://grants.nih.gov/grants/peer/critiques/k.htm

Writing Your Application

http://grants.nih.gov/grants/writing_application.htm

Scoring Key

http://enhancing-peer-review.nih.gov/scoring&reviewchanges.html

NIH Glossary & Acronym List

http://grants.nih.gov/Grants/glossary.htm

Standard Due Dates for Competing Applications

http://grants.nih.gov/grants/funding/submissionschedule.htm

Sample Biosketch

http://grants.nih.gov/grants/funding/424/index.htm#biosketch

Other Helpful Resources – NIAID, Write the Research Strategy

http://www.niaid.nih.gov/researchfunding/grant/strategy/pages/3researchstrategy.aspx#instrstrat

NIH Peer Review Process

http://grants.nih.gov/grants/peer_review_process.htm#Criteria
Important Writing Tips

Source: [http://grants.nih.gov/grants/writing_application.htm#tips](http://grants.nih.gov/grants/writing_application.htm#tips)

NIH encourages applicants to describe their research in terms that are easily understood by peer reviewers, scientists, Congress, and the public.

Titles, abstracts and statements of public health relevance should:

1. Convey the value of the research in plain language – clear, succinct, and professional
2. Be comprehensible to both scientists and the public
3. Relay the potential impact of the research on health

For more information and writing examples, see [Communicating Research Intent and Value in NIH Applications](http://grants.nih.gov/grants/writing_application.htm#tips).

- The instructions require that materials be organized in a particular format. Reviewers are accustomed to finding information in specific sections of the application. Organize your application to effortlessly guide reviewers through it. This creates an efficient evaluation process and saves reviewers from hunting for required information.
- Think like a reviewer. A reviewer must often read 10 to 15 applications in great detail and form an opinion about each of them. Your application has a better chance at being successful, if it is easy to read and follows the usual format. Make a good impression by submitting a clear, well-written, properly organized application.
- Start with an outline following the suggested organization of the application.
- Be complete and include all pertinent information.
- Be organized and logical. The thought process of the application should be easy to follow. The parts of the application should fit together.
- Write one sentence summarizing the topic sentence of each main section. Do the same for each main point in the outline.
- Make one point in each paragraph. This is key for readability. Keep sentences to 20 words or less. Write simple, clear sentences.
- Before you start writing the application, think about the budget and how it is related to your research plan. Remember that everything in the budget must be justified by the work you've proposed to do.
- Be realistic. Don't propose more work than can be reasonably done during the proposed project period. Make sure that the personnel have appropriate scientific expertise and training. Make sure that the budget is reasonable and well justified.
- Capture the reviewers' attention by making the case for why NIH should fund your research. Tell reviewers why testing your hypothesis is worth NIH's money, why you are the person to do it, and how your institution can give you the support you'll need to get it done. Be persuasive.
- Include enough background information to enable an intelligent reader to understand your proposed work.
- Although though not a requirement for assignment purposes, a cover letter can help the Division of Receipt and Referral in the Center for Scientific Review assign your application for initial peer review and to an IC for possible funding.
Use the active, rather than passive, voice. For example, write "We will develop an experiment," not "An experiment will be developed."

Use a clear and concise writing style so that a non-expert may understand the proposed research. Make your points as directly as possible. Use basic English, avoiding jargon or excessive language. Be consistent with terms, references and writing style.

Spell out all acronyms on first reference.

Remember the Details! Below are tips to assist you in meeting the requirements on font, font size, margins and spacing. Be sure to follow the format in the instructions and label sections as requested.

- Use an Arial, Helvetica, Palatino Linotype, or Georgia typeface, a black font color, and a font size of 11 points or larger. (A Symbol font may be used to insert Greek letters or special characters; the font size requirement still applies.)
- Type density, including characters and spaces, must be no more than 15 characters per inch. Type may be no more than six lines per inch. Use standard paper size (8 ½” x 11). Use at least one-half inch margins (top, bottom, left, and right) for all pages. No information should appear in the margins.

Use sub-headings, short paragraphs, and other techniques to make the application as easy to navigate as possible. Be specific and informative, and avoid redundancies.

Use diagrams, figures and tables, and include appropriate legends, to assist the reviewers to understand complex information. These should complement the text and be appropriately inserted. Make sure the figures and labels are readable in the size they will appear in the application.

Use bullets and numbered lists for effective organization. Indents and bold print add readability. Bolding highlights key concepts and allows reviewers to scan the pages and retrieve information quickly. Do not use headers or footers.

Identify weak links in your application so the application you submit is solid, making a strong case for your project.

If writing is not your forte, seek help!

Proofreading and Final Edits

- Allow sufficient time to put the completed application aside, and then edit it from a fresh vantage point. Try proofreading by reading the application aloud.
- Allow time for an internal review by collaborators, colleagues, mentors and make revisions/edits from that review. If possible, have both experts in your field and those who are less familiar with your science provide feedback. The application should be easy to understand by all.
- It is a good idea to have an independent expert provide an objective critique of your application. If possible, arrange for neutral third-party reviewers.
- If more than one investigator is contributing to the writing, it would be helpful to have one overall editor.
- Have zero tolerance for typographical errors, misspellings, grammatical mistakes or sloppy formatting. A sloppy or disorganized application may lead the reviewers to conclude that your research may be conducted in the same manner.
- Prior to submission, perform a final proofread of the entire grant application.
Tips on Good Presentation

Presented by
Anthony M. Coelho, Jr., PhD
Former Review Policy Officer
Office of the Director, NIH
Office of Extramural Research

- Develop a logical outline with good use of transition phrases (“First…. ” “Second…. ” “Finally…. ”; “As indicated earlier…. ”; “As explained earlier…. ”; “To achieve this goal…. ”; “Previous studies have shown… ”)

- Use section headings to help reviewers “find things”

- Use major and minor section headings. Reviewers should understand your work simply by reading only the headings.

- Write clearly and concisely

- Make it easy for reviewers. Don’t make them work hard.

Top Ten Reasons for Application Failure
Source: NIAID Peer Reviewers

1. Poorly formatted, typographical errors, grammatical errors, lack of proofreading, or unappealing presentation.
2. Insufficient preliminary data, or preliminary data do not support project’s feasibility.
3. Overly ambitious Specific Aims or Research Strategy.
4. Unimportant question; lack of significance to the field or public health.
5. Lack of investigator expertise or collaborators on the team.
6. Lack of innovation or new ideas.
7. Lack of a strong, original hypothesis and Specific Aims.
8. Failure to identify potential pitfalls and lack of alternative approaches.
9. Failure to demonstrate knowledge of the field (didn’t cite relevant papers or account for alternative viewpoints)
10. Failure to request a study section or get advice on study section choice (so the application ended up in the wrong study section).
**K01/K02/K07/K08/K23/K24/K25/K99 Review**

If you cannot access the hyperlinks below, visit [http://grants.nih.gov/grants/peer/critiques/k.htm](http://grants.nih.gov/grants/peer/critiques/k.htm).

Application #:

Principal Investigator(s):

**Overall Impact**

Reviewers will provide an overall impact score to reflect their assessment of the likelihood for the candidate to maintain a strong research program, in consideration of the following five scored review criteria, and additional review criteria. An application does not need to be strong in all categories to have a major impact.

<table>
<thead>
<tr>
<th>Overall Impact</th>
<th>Write a paragraph summarizing the factors that informed your Overall Impact score.</th>
</tr>
</thead>
</table>

**Scored Review Criteria**

Reviewers will consider each of the five review criteria below in the determination of scientific and technical merit, and give a separate score for each.

<table>
<thead>
<tr>
<th>1. <strong>Candidate</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths</strong></td>
<td>•</td>
</tr>
<tr>
<td><strong>Weaknesses</strong></td>
<td>•</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. <strong>Career Development Plan/Career Goals &amp; Objectives/Plan to Provide Mentoring</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths</strong></td>
<td>•</td>
</tr>
<tr>
<td><strong>Weaknesses</strong></td>
<td>•</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. <strong>Research Plan</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths</strong></td>
<td></td>
</tr>
</tbody>
</table>

- Weaknesses
- 

<table>
<thead>
<tr>
<th>4. Mentor(s), Co-Mentor(s), Consultant(s), Collaborator(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths</strong></td>
</tr>
<tr>
<td>•</td>
</tr>
<tr>
<td><strong>Weaknesses</strong></td>
</tr>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>5. Environment and Institutional Commitment to the Candidate</th>
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</thead>
<tbody>
<tr>
<td><strong>Strengths</strong></td>
</tr>
<tr>
<td>•</td>
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<tr>
<td><strong>Weaknesses</strong></td>
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</table>

For Additional Review Criteria, visit https://grants.nih.gov/grants/peer/reviewer_guidelines.htm, locate the K award table and click on "Review Critique Fill-able Templates"
Biosketch Instructions
(NEW FORMAT AS OF MAY 25, 2015)

For a sample of the biosketch format, go to the NIH Training & Communications Resource Page at:
http://grants.nih.gov/grants/funding/424/index.htm#biosketch

NOTE: The Biographical Sketch may not exceed five pages. Follow the formats and instructions below.

A. Personal Statement
Briefly describe why you are well-suited for your role in the project described in this application. The relevant factors may include aspects of your training; your previous experimental work on this specific topic or related topics; your technical expertise; your collaborators or scientific environment; and your past performance in this or related fields (you may mention specific contributions to science that are not included in Section C). Also, you may identify up to four peer reviewed publications that specifically highlight your experience and qualifications for this project. If you wish to explain impediments to your past productivity, you may include a description of factors such as family care responsibilities, illness, disability, and active duty military service.

B. Positions and Honors
List in chronological order previous positions, concluding with the present position. List any honors. Include present membership on any Federal Government public advisory committee.

C. Contribution to Science
Briefly describe up to five of your most significant contributions to science. For each contribution, indicate the historical background that frames the scientific problem; the central finding(s); the influence of the finding(s) on the progress of science or the application of those finding(s) to health or technology; and your specific role in the described work. For each of these contributions, reference up to four peer-reviewed publications or other non-publication research products (can include audio or video products; patents; data and research materials; databases; educational aids or curricula; instruments or equipment; models; protocols; and software or netware) that are relevant to the described contribution. The description of each contribution should be no longer than one half page including figures and citations. Also provide a URL to a full list of your published work as found in a publicly available digital database such as SciENcv or My Bibliography, which are maintained by the US National Library of Medicine.

D. Research Support
List both selected ongoing and completed research projects for the past three years (Federal or non-Federally-supported). Begin with the projects that are most relevant to the research proposed in the application. Briefly indicate the overall goals of the projects and responsibilities of the key person identified on the Biographical Sketch. Do not include number of person months or direct costs.
K Review Criteria

Overall Impact: Assessment of the likelihood for the project to exert a sustained, powerful influence on the research field(s) involved, in consideration of the following five core review criteria (as applicable for the project proposed). (Scored 1 [Exceptional]-9 [Poor])

Core Review Criteria. Reviewers will consider each of the five review criteria below in the determination of scientific and technical merit, and give a separate score for each

Core Criteria (Score 1 [Exceptional]-9 [Poor])

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?

Investigator(s)
Are the PD/PIs, collaborators, and other researchers well suited to the project? If Early Stage Investigators or New Investigators, or in the early stages of independent careers, 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 or multi-PD/PI, do the investigators have complementary and integrated expertise; are their leadership approach, governance and organizational structure appropriate for the project?

Innovation
Does the application 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?

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 human subjects and/or NIH-defined clinical research, are the plans to address 1) the protection of human subjects from research risks, and 2) the inclusion (or exclusion) of individuals on the basis of sex/gender, race, and ethnicity, as well as the inclusion (exclusion) of children, justified in terms of the scientific goals and research strategy 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?
K Template

(12-page limit includes Research Strategy plus 1 page for Specific Aims)

How to Use this Template: Fill in the blank areas beneath each of the sections and delete the template as you write, leaving the bold-faced headings. Important Note: This template is to serve as a guideline only and does not guarantee funding. It should be modified as needed based on the specific research project and NIH funding notice (e.g., funding opportunity announcement, request for application or request for proposal). Though this template reflects the general formatting guidelines, please ensure that you have correctly formatted your own application before submitting it.

This template is formatted in 11-point Arial font

***Begin Candidate Template Below. See first page of this document for changes.***

Candidate's Background

Use this section to provide any additional information not described in the Biographical Sketch Format Page such as research and/or clinical training experience.

Career Goals and Objectives

Describe your past scientific history, indicating how the award fits into past and future research career development. If there are consistent themes or issues that have guided previous work, these should be made clear; if your work has changed direction, the reasons for the change should be indicated. It is important to justify the award and how it will enable you to develop or expand your research career. You may include a timeline, including plans to apply for subsequent grant support.

Candidate's Plan for Career Development/Training Activities during Award Period

Stress the new enhanced research skills and knowledge you will acquire as a result of the proposed award. If you have considerable research experience in the same areas as the proposed research, reviewers may determine that the application lacks potential to enhance your research career. For mentored awards, describe structured activities, such as course work or technique workshops, which are part of the developmental plan. If course work is included, provide course numbers and descriptive titles. Briefly discuss each of the activities, except research, in which you expect to participate. Include a percentage of time involvement for each activity by year, and explain how the activity is related to the proposed research and the career development plan. Note that recipients of mentored K awards may receive concurrent support from an NIH research grant award or cooperative agreement only under certain conditions (see NIH Notice NOT-OD-08-065).

***End Candidate Template***
**Specific Aims (1-Page Limit)**

**Important note to investigators**: This template was developed by funded investigators at Washington University School of Medicine in St. Louis, Missouri and was not developed by the National Institutes of Health. The template is a helpful guideline only and does not guarantee funding. You do not need to answer all of the questions and should only answer the questions that are relevant to your research study.

***Begin Specific Aims Template Below***

**Specific Aims**

- What is your project about? State your goal/objective/outcome.

- Why is it important? State the significance and overall impact.
  - Medical significance
  - Long-terms goal/objective of the project

- What is known? Provide background related to your research question.
  - This could include data from your lab as part of this background

- What is unknown? What do you hope to accomplish?

- Why is the gap in this knowledge a problem and how do you propose to address it?
  - Rationale of this study – why are you doing THIS project
  - What have you accomplished to date that suggests this approach? (Preliminary Data)

- What is your hypothesis (hypotheses)?
  - Objective of this application

- Explain how you will address your hypothesis (hypotheses) using your **Specific Aims**. (Suggested transition sentence to this section: “We proposed to address this (these) hypothesis (hypotheses) using the following specific aims:”). You may also list a hypothesis for each aim here.
  - Address “why” questions rather than “what”: no “demonstrate” or “describe” words should lead the aims, which should be very succinct and include expected outcomes
  - If you can briefly include an indication of the expected outcome/significance here, do so
  - KEEP THE AIMS SHORT – a full paragraph/aim is too much

- Summary paragraph: what you propose to do,
  - Why it is relevant/SIGNIFICANT to medical science and the field
  - Why your research team is the best team for the project
  - INNOVATION
  - Other salient features (e.g., multidisciplinary investigative team, outstanding clinical and/or laboratory environments)

***End Specific Aims Template***
Research Strategy (Note: This is included in the 12-page limit)

Organize the Research Strategy in the specified order using the instructions provided below. Start each section with the appropriate section headings: (a) Significance, (b) Innovation, (c) Approach. Cite published experimental details and provide the full reference in the Bibliography and References cited section of the application. Note: This template is meant to be a helpful guideline and does not guarantee funding. For specific instructions regarding your specific K mechanism, visit http://grants.nih.gov/grants/peer/critiques/k.htm.

***Begin Research Strategy Template Below***

(a) Significance

Explain the importance of the problem or critical barrier to progress in the field that the proposed project addresses.

Explain how the proposed project will improve scientific knowledge, technical capability, and/or clinical practice in one or more broad fields.

Describe how the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field will be changed if the proposed aims are achieved.

(b) Innovation

Explain how the application challenges and seeks to shift current research or clinical practice paradigms.

Describe any novel theoretical concepts, approaches or methodologies, instrumentation or intervention(s) to be developed or used, and any advantage over existing methodologies, instrumentation or intervention(s).

Explain any refinements, improvements, or new applications of theoretical concepts, approaches or methodologies, instrumentation or interventions.

(c) Approach (Include Preliminary Studies in this section)

Describe the overall strategy, methodology, and analyses to be used to accomplish the specific aims of the project. Tip: make it clear what tasks are related to each specific aim.

Discuss potential problems, alternative strategies, and benchmarks for success anticipated to achieve the aims.

If the project is in the early stages of development, describe any strategy to establish feasibility, and address the management of any high-risk aspects of the proposed work.

Point out any procedures, situations, or materials that may be hazardous to personnel and precautions to be exercised.

***End Research Strategy Template***