

# Developing and Writing Grant Applications

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October 10, 2007

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## The Genesis of a Proposal

- Start with a good idea
- Do you think you'll remain enthusiastic about the research over a period of years?
- Systematically map out research plan, review related literature
- Find appropriate funding agency
- Select appropriate mechanism of support

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## Federal Grants

- Major source of support in medical school
- Highly formal application process, complex requirements
- University offers substantial help in preparing administrative components of applications
- Check with funding agencies about budget limits, and whether these limits apply to total or direct costs

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## Basic PHS Grant Info

- Grant forms available at <http://grants1.nih.gov/grants/forms.htm>
- Funding opportunities from NIH available at <http://grants1.nih.gov/grants/guide/index.html>
- Additional information at AHRQ web site <http://www.ahrq.gov/fund/funding.htm>
- AHRQ research funding opportunities <http://www.ahrq.gov/fund/ongoing.htm>

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## Other Important Links

- NIH Grants Policy Statement <http://grants1.nih.gov/grants/policy/policy.htm>
- Excellent tips/tutorial at NIAID <http://www.niaid.nih.gov/ncn/grants/default.htm>

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## Types of Grants

- Training (T Series) – Institutional training grant awards
  - Predoctoral and postdoctoral
- Fellowship (F Series)
  - Includes individual NRSA at postdoctoral (F32) and predoctoral (F31) levels
- Career Development (K series)
  - Details vary by institute

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## K Series

K01	<a href="#">Mentored Research Scientist Development Award</a> Career development in a new area of research. 3-5 yrs; Salary determined by the sponsoring Institute. MD or PhD
K02	<a href="#">Independent Scientist Award</a> Develop the career of the funded scientist. 5 yrs; 75% effort.
K05	<a href="#">Senior Scientist Award</a> For outstanding scientists with a sustained level of high productivity. 5 yrs; 75% effort; Funding determined by the sponsoring Institute. Established investigators only.
K07	<a href="#">Academic Career Award</a> Developmental/Leadership in academic instruction, research, administration. 2-5 yrs, 25-75% effort; requires institutional sponsorship.
K08	<a href="#">Mentored Clinical Scientist Development Award</a> Development of the independent clinical research scientist. 3-5 yrs; 75% effort. For clinicians doing basic research. AHRQ offers

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## K Series (More Senior)

K12	<a href="#">Mentored Clinical Scientist Development Program Award</a> Support to an institution for the development of independent clinical scientists. 5 yrs; 75% effort, initiated by the educational institution.
K22	<a href="#">Career Transition Award</a> Support to an individual postdoctoral fellow in transition to a faculty position. <ul style="list-style-type: none"> <li>• NIDA, NEI, NCI, NHGRI, NHLBI, NIAID</li> <li>• NICHD, NIDCR, NIEHS, NIINDS, NINR</li> </ul>
K23	<a href="#">Mentored Patient-Oriented Research Career Development Award</a> Development of the independent research scientist in the clinical arena. 3-5 yrs, 75% commitment. Clinicians doing clinical research.
K24	<a href="#">Midcareer Investigator Award In Patient-Oriented Research</a> Development of clinical mentors conducting funded research. 3-5 years, 25 to 50% effort

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## Research Project Grant Types

- R 01 Research Project
- R 03 Small Research Grants
- R 15 Academic Research Enhancement Awards (AREA)
- R 21 Exploratory/Developmental Grants
- R 37 Method to Extend Research in Time (MERIT) Award (you don't apply for these)
- R 41 Small Business Technology Transfer (STTR) Grants - Phase I
- R 42 Small Business Technology Transfer (STTR) Grants - Phase II

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## Funding Environment is More Competitive

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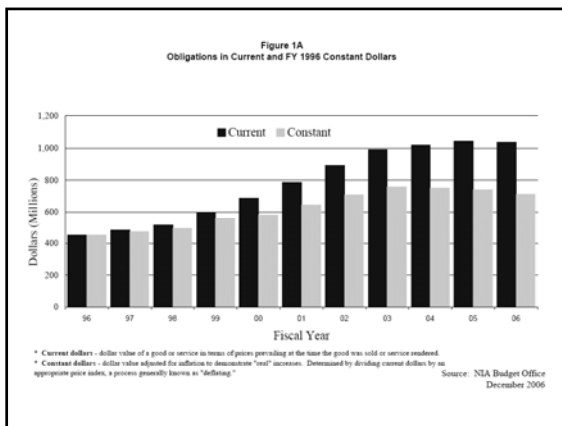
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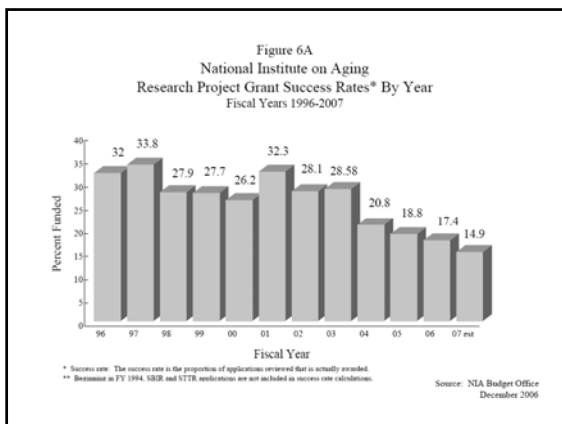
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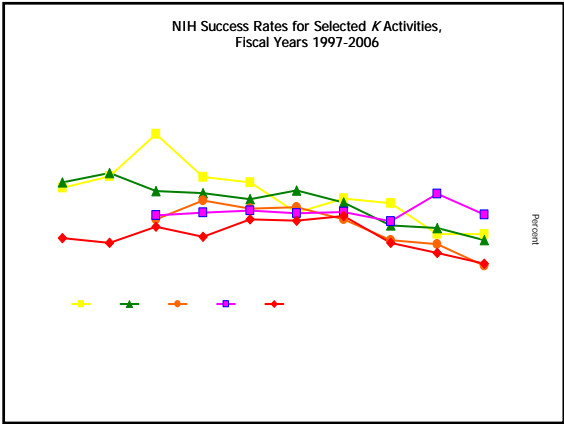
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### Application for Research Grant - Structure

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### Heart of the Proposal: Research Plan

- a. Specific Aims
  - Concise statement of goals of project. 1 page
- b. Background and Significance
  - Why is proposed research important? In what ways is it novel or creative? What is connection to literature? 2-3 pages
- c. Preliminary Studies/Progress Report
  - Demonstrate your experience & expertise in area of research 6-8 pages
- d. Research Design and Methods
  - Describe approaches that project will take Remainder

25 pages maximum for a-d

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- e. Human Subjects
  - Inclusion of women
  - Inclusion of minorities
  - Inclusion of children
- f. Vertebrate Animals
- g. Literature Cited
- h. Consortium/Contractual Arrangements
- i. Consultants

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**Review Criteria that NIH Uses to Evaluate R01 Proposals**

(1) **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?

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(4) **Investigator:** Are the PD/PI(s) and other key personnel appropriately trained and well suited to carry out this work? Is the work proposed appropriate to the experience level of the PD/PI(s) and other researchers? Do the PD/PI(s) and investigative team bring complementary and integrated expertise to the project (if applicable)?

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**(5) Environment:** Do(es) the scientific environment(s) 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?

Source: PHS 398 Instructions

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### Additional Criteria

- The adequacy of plans to include both genders, minorities, and their subgroups as appropriate for the scientific goals of the research. Plans for the recruitment and retention of subjects will also be evaluated

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- The reasonableness of the proposed budget and duration in relation to the proposed research
- The adequacy of the proposed protection for humans, animals or the environment, to the extent they may be adversely affected by the project proposed in the application.

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### General Tips

- Plan your research in detail
- Describe your plans clearly and precisely
- Pilot studies and prior data analyses are essential for federal grants
- References should be selected carefully to demonstrate your familiarity with key literature and to limit the text description of previous research, methods, etc.

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### Contact Funding Agency First

- Most funding agencies encourage you to contact project officer before preparing proposal
- Is general topic area of potential interest? Does it fit within existing program announcement?
- Which aspects of research of greatest interest?
- Is budget feasible?

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