NIH Career Development (K) Awards provide support for research careers

~2% NIH budget: $632 million (FY16)
3,700 awards (FY16)
Currently 14 different types (K01-K99)
• for clinicians & basic scientists
• for junior & senior faculty

Mentored K awards:
designed for postdocs & junior faculty
—> K01, K08, K23, K99/R00

The Goal of Mentored K Awards

To provide support and “protected time” (3-5 years)
for an intensive, supervised career development experience in the biomedical, behavioral, or clinical sciences leading to research independence.

A dedicated mentor is essential for
• successful application
• successful outcome

Candidates are encouraged to identify more than one mentor, i.e., a mentoring team

Primary Mentor → Mentee → Co-Mentor
Co-Mentor → Co-Mentor

Use your mentoring team to complement the expertise of you and your primary mentor

NIH provides funding for career development at different stages

post doc → resident → junior faculty → independent investigator

K08: Mentored Clinical Scientist Award

K23: Mentored Patient-Oriented Research Scientist Award

K01: Mentored Research Scientist Award

K22: Career Transition Award

K99/R00: Pathway to Independence Award

K01: Mentored Research Scientist Award

—to develop research independence or to foster career development in a new area

• for candidates with potential for productive independent research
• mentor with extensive research experience
• 75% effort over 3-5 years
• different Institutes use the K01 award for different purposes — contact the Program Officer!

K08: Mentored Clinical Scientist Award

—to develop clinician research scientists as independent investigators

Requires:
• clinical doctoral degree
• must have initiated postgraduate training
• mentor with extensive research experience
• 75% effort over 3-5 years

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**K23: Mentored Patient-Oriented Research Career Development Award**

To develop investigators committed to patient-oriented research

Requires:
- clinical or nursing doctoral degree
- completion of all clinical training
- mentor with extensive research experience
- 75% effort over 3-5 years

**K99/R00: Pathway to Independence Award**

To facilitate independent funding earlier in an investigator’s career

- for highly promising postdoctoral scientists
- established in response to increasing age of first independent support
- non-citizens are eligible

**K99/R00 Awards combine elements of K and R (research) awards**

student → post doc → resident → junior faculty → senior faculty

- K Awards
- F31
- F30
- F32

- K99/R00 Award

- R01

**K99/R00 Awards provide up to five years of support in two phases**

**K99 Phase:**
1-2 years of mentored support for highly promising postdoctoral research scientists

**R00 Phase:**
Up to 3 years of support contingent on securing an independent research position

**K22: Career Transition Award**

Support for postdoctoral fellows in transition to faculty positions

- for candidates with potential for productive independent research
- differences among Institutes: may involve training in intramural NIH programs

**Other individual K Awards**

- K02 Independent Scientist Award
- K05 Senior Scientist Research & Mentorship
- K07 Academic Career Award
- K18 Career Development Award in the Environmental Health Sciences / Career Enhancement Award for Stem Cell Research
- K24 Midcareer Investigator Award in Patient-Oriented Research
- K25 Mentored Quantitative Research Development Award

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Common features of K Awards

Eligibility:
- doctoral degree
- US Citizen, non-citizen national, or permanent resident (except K99/R00)
- not eligible if previous PI on R or K grants

Duration: 3–5 years
Effort: minimum 75% (but can be 100%)

K awards have high success rates

<table>
<thead>
<tr>
<th>Success Rate 2015 (%)</th>
<th># awards 2015</th>
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</table>

Data from: http://report.nih.gov/DisplayRePORT.aspx?rid=551
http://report.nih.gov/success_rates/Success_ByActivity.cfm

NIH has a newly-designed website for career development and training

https://researchtraining.nih.gov

The Institute/Program Matrix shows which awards are supported by each institute

https://researchtraining.nih.gov/institute

Information on K Awards by NIH Institute

NIH website:
K award information for each award for all Institutes/Centers
e.g., K01 Award
http://grants1.nih.gov/grants/guide/contacts/parent_K01.html

Download spreadsheet:
K award success rates for Institutes/Centers

Program Announcements for K awards (see K Kiosk *)

K01: Mentored Research Scientist Development Award
PA-16-190

K08: Mentored Clinical Scientist Research Career Development Award
PA-16-191

K22: see individual institutes on K Kiosk*

K23: Mentored Patient-Oriented Research Career Development Award
PA-16-198

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

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Read the Program Announcement (PA) — make sure you have the most current!

Use the “parent” program announcement only for unsolicited applications
Use the appropriate Funding Opportunity Announcement (FOA) for institute-specific awards

The application also includes “PHS398 Components”

Cover Page Component
Cover Letter Component
• required for mentored K awards
• must include list of references
Career Development Supplemental Form
Checklist
• follow general instructions

Complete the Cover Page Component according to standard instructions

Consult with your grants office for help in completing the forms

You sign the application by checking “I agree” (Page 2)

Remember that in submitting the application, you certify that the contents are “true, complete, and accurate”

Application for a K award should be a collaboration between you & your advisor

You (the “applicant”) are Principal Investigator
• you are responsible for submitting the application
• you write the research training plan in collaboration with your sponsor
Your advisor/mentor is the Sponsor
• she/he must write sections of the application

You must involve your advisor/mentor early & often in crafting the application!

Other Project Information Form

7. Project Summary/Abstract
• no more than 30 lines
• the abstract should include a description of your research project & your training plan

9. Bibliography
• for whole proposal

10. Facilities & Other Resources; 11. Equipment
• description of resources available to candidate
• establishes feasibility of proposal
Budget: allowable costs may differ by award type & institute

- consult your grants office &/or Program Officer
- modular budgets not used for K awards
- only a few budget categories used

The Career Development Supplemental Form contains the proposal itself

Important sections:
- Introduction (if applicable)
- Candidate Information
- Research Plan
- Mentors, Consultants, Collaborators
- Environment and Institutional Commitment
- Human Subjects, etc

Each component is attached as a separate pdf

Key sections have a page limit

Candidate Information (item 2)

+ Research Strategy (item 4)
= 12 pages total

+ 1 page for Specific Aims (item 3)

The supplemental sections correspond to the review criteria for K Awards

- Candidate
- Career development plan
- Research strategy
- Mentor
- Environment & Institutional Commitment

Remember the criteria as you write your proposal!

Your achievements and potential are documented first in your biosketch

A. Personal Statement
Briefly describe why you are well-suited for your role(s) in this project

B. Positions and Honors

C. Contributions to Science
Briefly describe up to five of your most significant contributions to science

D. Research Support
Include a link (URL) to a complete bibliography in a public database (SciENcv or My Bibliography)

see: SF424 Career Development Instructions page K-51

Mentored K Award applications require letters of reference

Required for K01, K08, K22, K23 & K99/R00 applications
- 3–5 letters from individuals other than those involved in the application
- i.e., not sponsor/mentor or collaborators

Letters should address candidate’s competence & potential as an independent investigator

The referees (name, department, institution) must be listed in the Cover Letter Attachment


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Candidate Information (item 2)

Candidate’s Background:
— describe your past scientific history, indicating how the award fits into past and future research career development

Career Goals and Objectives:
— describe your short-term and long-term career goals and objectives and how the award will enable you to develop and/or expand your research career

Candidate’s Plan for Career Development/Training Activities During Award Period:
— describe the new or enhanced research skills and knowledge you will acquire as a result of the award

Justify the proposal by describing how it fits into your career development

Candidate InformaKton (item 2)

Candidate’s Background:
— describe your past scientific history, indicating how the award fits into past and future research career development

Career Goals and Objectives:
— describe your short-term and long-term career goals and objectives and how the award will enable you to develop and/or expand your research career

Candidate’s Plan for Career Development/Training Activities During Award Period:
— describe the new or enhanced research skills and knowledge you will acquire as a result of the award

Describe what you will learn in the Career Development Plan

Describe new skills & knowledge
• provide details of courses & workshops
Define distribution of effort for activities (use timeline)
Relate activities to career development & research plans

Proposing to do what you already know will be viewed as having no training potential!

Items that you must include in a Career Development Plan

Describe your goals:
• what you hope to achieve . . .
• describe specific activities designed to achieve each goal
• include a specific aspect of advanced research training and professional skills (e.g., training in grant writing)
• describe how your institutional environment will enhance your success in achieving your goals

Include a Timeline for your Career Goals & Objectives

List:
• your distribution of effort
• specific objectives for each year
• plans for subsequent grant support

Your mentor(s) must describe detailed plans for mentoring

The specific expertise of your mentors and how their guidance will help you to achieve your goals

The specifics of mentoring, including frequency of meetings (e.g., weekly)
Consider adding an Advisory Committee to monitor your progress every 6 months

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The Research Plan should “develop skills needed by a researcher”
- should be hypothesis-driven
- not overly ambitious or routine

Format of the Research Plan:
Specific Aims (1 page)
Research Strategy:
  a) Significance
  b) Innovation
  c) Approach

The Research Plan is a major part of the research career development plan
Relate the research plan to the candidate’s scientific goals
Describe how the research plan will achieve the objectives of the career development plan
For most types of research the plan should include:
  • a specific hypothesis
  • specific aims to test the hypothesis
  • description of approach, methods, techniques
  • possible problems and alternative approaches

There are new NIH requirements on “Implementing Rigor and Transparency”
Four areas must be addressed:
1. the scientific premise forming the basis of the proposed research
2. rigorous experimental design for robust and unbiased results
3. consideration of relevant biological variables
4. authentication of key biological and/or chemical resources

Statements by Mentor must also explain how award will develop candidate’s career
Should include:
  • plans for candidate’s career development
  • source(s) of support for research project
  • supervision & mentoring of candidate
  • candidate’s teaching load (if any)
  • plan for transition of candidate to an independent investigator

Statement limited to 6 pages!

The Mentor must have a strong record of research and mentoring
Your mentor should meet these qualifications (& document them adequately!)
If not, provide a plan to correct any deficiencies:
  • co-mentor(s)
  • mentoring advisory team

Institutional Environment: document a strong research program
List names of key faculty members
Describe availability of necessary facilities and resources (refer to resources description)
Describe opportunities for intellectual interactions (journal clubs, seminars, presentations)

Statement limited to 1 page!

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A strong statement of Institutional Commitment is essential

- on institutional letterhead
- commitment to candidate independent of award
- agreement to provide protected time for candidate’s research & career development
- equipment, lab space, office, facilities, resources

Letter limited to 1 page!

There are three deadlines per year for submission of NIH Awards

K awards:

<table>
<thead>
<tr>
<th>Receipt</th>
<th>Review</th>
<th>Council</th>
<th>Start</th>
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<td>May-June</td>
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Applications must be received electronically at NIH on or before the receipt date.
Your Office of Research will require proposals to review before the NIH deadline.

Write to the review criteria!

- Candidate
- Career development plan
- Research strategy
- Mentor
- Environment & Institutional Commitment

A strong response for each criterion!

Plan ahead for resubmission!

18 months

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