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

- ~2% NIH budget: $688 million (FY17)
- ~3,800 awards (FY17)
- Currently 15 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

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

NIH provides funding for career development at different stages

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**

- **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

**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** Research Career Enhancement Award for Established Investigators
- **K24** Midcareer Investigator Award in Patient-Oriented Research
- **K25** Mentored Quantitative Research Development Award
- **K26** Midcareer Investigator Award in Biomedical and Behavioral Research
- **K43** Emerging Global Leader Award
- **K76** Emerging Leaders Career 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 2016 (%)</th>
<th># awards</th>
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<tr>
<td>0</td>
<td>202</td>
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<tr>
<td>10</td>
<td>162</td>
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<td>30</td>
<td>207</td>
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<tr>
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New R01 Success Rate 2016 = 17.3%

Data from: http://report.nih.gov/DisplayRePORT.aspx?id=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/purpose_K01.html

Download spreadsheet: K award success rates for Institutes/Centers


NIH is changing policies on clinical trials

Depending on the FOA, you may request support for either:
• an independent clinical trial
• or propose to gain research experience in a clinical trial lead by another investigator (e.g., mentor/sponsor)

FOAs designated as Independent Clinical Trial Required will require applicants to propose to lead an independent clinical trial or an independent ancillary trial to an ongoing clinical trial with proper mentorship

FOAs designated as Independent Clinical Trial Not Allowed will not allow applicants to propose to lead an independent clinical trial, but will allow them to propose research experience in a clinical trial led by a mentor or co-mentor

see: NIH Notice NOT-OD-18-001

Watch for new Program Announcements!
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

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 Mentor
- she/he must write sections of the application

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

Key sections of Career Development Award applications match the review criteria

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<th>Sections</th>
<th>Criteria</th>
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<td>Candidate Information</td>
<td>Candidate</td>
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<td>Background</td>
<td>Career Goals &amp; Objectives</td>
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<tr>
<td>Career Development Plan</td>
<td>Development Plan</td>
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<tr>
<td>Planned Activities</td>
<td>Research Strategy</td>
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<tr>
<td>Mentor, Co-Mentor, Consultants, Collaborators</td>
<td>Mentor</td>
</tr>
<tr>
<td>Environment &amp; Institutional Commitment</td>
<td>Environment</td>
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</table>

Key sections have a page limit

Candidate Information (item 2)
+ Research Strategy (item 4)
= 12 pages total
+ 1 page for Specific Aims (item 3)
All parts of the proposal must be integrated into a coherent and compelling story

Your Story

A motivated applicant with great promise

Research plan is a vehicle for training

Mentors with the right skills and experience

Institutional support and commitment

Training plan will develop needed skills

Achievement of career & training goals


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)

The story continues in the Candidate Information Section

What have you done already?

How are you going to get there?

Where do you want to be?

past history

your proposal

future career

A. Background & Experience

B. Goals & Objectives

C. Career Development Plan & Activities

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

The Candidate Information Section covers three critical areas

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

Career/Training 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 activities planned during 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

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


The Research Plan is a major part of the career development plan

Relate the research plan to the applicant’s scientific career goals
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
Tailor the plan to the experience of the applicant
Mentors and colleagues should review the plan

Research Plan should enable the applicant to develop skills needed by a researcher

• should be hypothesis-driven
• not overly ambitious or routine
Specific Aims 1 page
Research Strategy
— organize by sections:
• Significance
• Innovation
• Approach

Career Award applications must document “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

Will be discussed in the next session

see: NIH Notice NOT-OD-16-012

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For Career Awards the Mentor statement must include key information

- plans for candidate’s career development
- source(s) of support for research project
- supervision & mentoring of candidate
- candidate’s teaching load (if any) and other responsibilities
- plan for transition of candidate to an independent investigator
- Mentors previous mentoring experience

Statement limited to 6 pages for all mentors/co-mentors!

Your Mentors 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

A strong statement of Institutional Commitment is essential for Career Awards

- 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!

Make sure that you complete the “Front Pages” and comply with regulations

- Cover Page (Cover Letter)
- Project Abstract
- Project Narrative
- Bibliography & References Cited
- Facilities & Other Resources
- Human Subjects (if applicable)
- Vertebrate Animals (if applicable)
- Budget
- Biosketches
- etc, etc, etc

Consult with your grants office for help in completing the forms

Complete the Cover Pages according to standard instructions

Title: limited to 200 characters & spaces

Cover letter attachment must include the list of Referees with complete contact information

Budget: allowable costs may differ by award type & institute

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

Write to the review criteria!

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

A strong response for each criterion!

There are three deadlines per year for submission of NIH Awards

K awards:

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<tr>
<td>Oct 12</td>
<td>Jan-Feb</td>
<td>May-June</td>
<td>July</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

Plan ahead for resubmission!

2018

Submit → Review → Council → Start → Resubmit

2019

18 months

Start → Review → Council → Start