Career Development Plan-1

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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

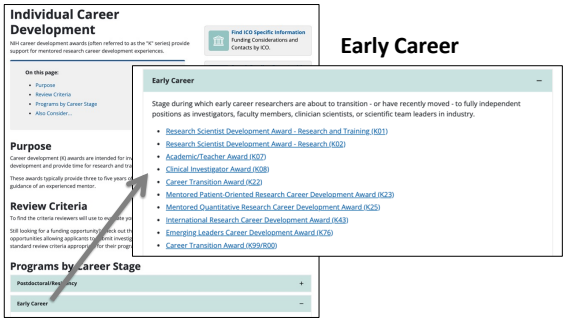
Common features of K Awards

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

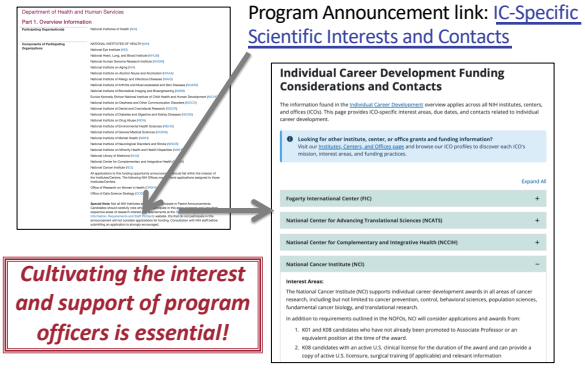
Effort: minimum 75% (but can be 100%)

NIH has information about Career Development (K) Awards



https://researchtraining.nih.gov/programs/career-development

Institutes supporting K Awards have Program Officials dedicated to these awards



Program Announcement link: IC-Specific Scientific Interests and Contacts

Cultivating the interest and support of program officers is essential!

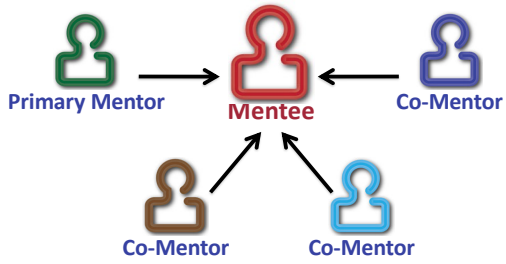
Application for a K award should be a collaboration between you & your mentors

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 advisors/mentors are the **Mentors**
- they must write sections of the application

You must involve your advisors/mentors early & often in crafting the application!

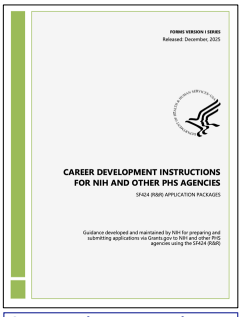
Candidates are encouraged to identify more than one mentor, i.e., a mentoring team



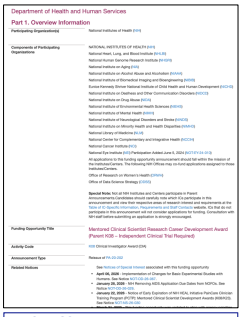
Use your mentoring team to complement the expertise of you and your primary mentor

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Follow the instructions for Career Development Awards and the relevant Program Announcement



Career Development Awards:
https://grants.nih.gov/grants/how-to-apply-application-guide/forms-i/career-forms-i.pdf



PA-24-182:
https://grants.nih.gov/grants/guide/pa-files/PA-24-182.html

Career Development applications have three parts

"Front Pages"	The Proposal	Support Statements
		
SF 424 (R&R) Form Other Project Information Key Persons	Developmental Award Supplemental Form	References Mentors Consultants Collaborators

As the applicant you have three tasks

Complete the Front Pages	Write the Proposal	Manage Colleagues
		
Work with your Grants Office	Draft with input from mentors & colleagues	Contact References Collaborators

The key components of a K proposal are in the "Supplemental Form" & have page limits



Candidate Information (item 2) **4–6 pages**

+

Research Strategy (item 4) **6–8 pages**

= 12 pages total

+ 1 page for Specific Aims (item 3)

Mentored K awards are reviewed by 5 criteria



1. **Candidate**



2. **Career Development Plan**
   Career Goals & Objectives



3. **Research Plan**



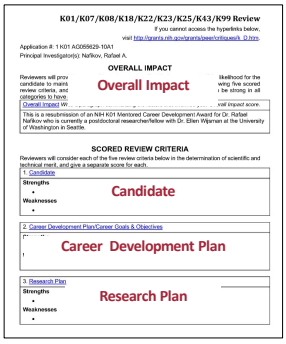
4. **Mentor(s)**, Consultant(s), Collaborator(s)

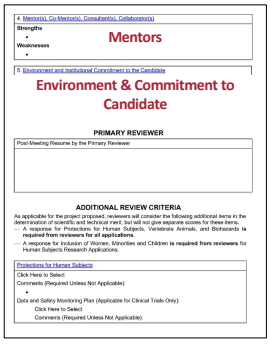


5. **Environment** and Institutional Commitment to the Candidate

Write to the review criteria!

NIH uses a template for reviewer comments & scores





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Key sections of Career Development applications match the review criteria

Sections	Criteria
Candidate & Career Plan	**Candidate**
	Training Potential
Research Training Plan	**Research Training Plan**
Sponsor(s), Collaborator(s) and Consultant(s) Section	**Mentor**
Environment & Institutional Commitment	**Environment**

Your story begins with the Candidate & Career Plan in the Candidate Information Section



The Candidate Information Section covers three critical areas

Candidate's Background — **1 page**

— describe your past scientific history: how the award fits into past and future research career development

Career Goals and Objectives — **½ page**

— 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: — **3½ pages**

— describe the new or enhanced research skills and knowledge you will acquire as a result of the award

— describe activities planned during the award

Use these three areas to describe your career story



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

The Candidate's Background provides an introduction to your Career Plan

- Introduces you to the reviewer
- Describes what you have done to date & makes the case for additional career development
- End this section with a statement justifying your need for a K Award at this stage of your career

~1 page

The NIH asks for specific information in the the Candidate's Background

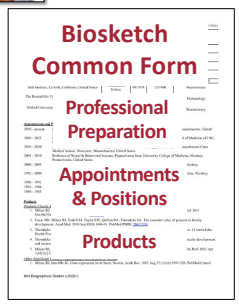
- Describe the candidate's commitment to a health-related research career. Describe all the candidate's professional responsibilities in the recipient institution and elsewhere and describe their relationship to the proposed activities on the career award.
- Describe prior training and how it relates to the objectives and long-term career plans of the candidate.
- Describe the candidate's research efforts to this point in their research career, including any publications, prior research interests and experience.
- Provide evidence of the candidate's potential to develop into an independent investigator.

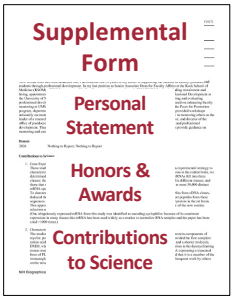
PA-24-182: https://grants.nih.gov/grants/guide/pa-files/PA-24-182.html

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Your achievements and potential are also documented in your biosketch





Instructions: https://grants.nih.gov/grants-process/write-application/forms-directory/biographical-sketch-common-form



NIH asks reviewers to consider these questions for the *Candidate . . .*

- Does the candidate have the **potential** to develop as an **independent and productive researcher**?
- Are the candidate's **prior training and research experience** appropriate for this award?
- Is the candidate's academic, clinical (if relevant), and research **record of high quality?**
- Is there evidence of the **candidate's commitment** to meeting the program objectives to become an independent investigator in research?
- Do the **reference letters** address the above review criteria, and do they provide evidence that the candidate has a high potential for becoming an independent investigator?

PA-24-182: https://grants.nih.gov/grants/guide/pa-files/PA-24-182.html



Goals & Objectives summarize what you want to achieve with your Career Plan

What is your long-term career goal?

— *How will a K Award help you become an independent investigator?*

— *What do you do well (strengths)?*

What do you still need to learn in order to achieve that goal?

— *2–4 areas for development ("weaknesses")*

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

~ ½ page



The NIH asks for specific information in Goals & Objectives

Describe a systematic plan that

1. shows a logical progression from prior research and training experiences to the research and career development experiences that will occur during the career award period and then to independent investigator status
2. justifies the need for further career development to become an independent investigator

PA-24-182: https://grants.nih.gov/grants/guide/pa-files/PA-24-182.html



Consider linking training objectives to each of your Specific Aims

Your Research Plan is a vehicle for you to acquire new techniques & approaches

Specific Aims	Training Objectives
Aim 1	1. Learn a new technique for this aim
Aim 2	2. Learn a new method of data analysis
Aim 3	3. Learn how to integrate data

Include Training Objectives for Professional Development

- managing a research group
- grant-writing
- mentoring, etc

Consider the following areas . . .

Technical: techniques or technical methods, quantitative/computational approaches

Operational: practices that promote rigorous and reproducible science, research safety, animal, or human welfare

Professional: management, leadership, communication, teamwork skills.

At least one from each area for current characteristics & areas for development

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Discussion . . .

What is your long term career goal?
—how will a K Award help you achieve that goal?

What are your Career Plan Objectives?
—identify a Training Objective for each of your Specific Aims



Career Development & Training Activities is your detailed plan to achieve your goals

Expand each of your Training Objectives and describe in detail how these will be accomplished

- tap into expertise (preferably local)
- describe the role of your mentors in your learning
- can include didactic programs or courses
- link with your Specific Aims and research proposal
- describe how your institutional environment will enhance your success in achieving your goals
- include a **timeline** of activities

~ 3½ pages



The NIH asks for specific information in Career Development & Training Activities

- The candidate and the mentor(s) are jointly responsible for the preparation of the career development plan. A career development timeline is often helpful.
- The didactic (if any) and the research aspects of the plan must be designed to develop the necessary knowledge and research skills in scientific areas relevant to the candidate's career goals.
- Describe the professional responsibilities/activities including other research projects beyond the minimum required 9 person months (75% full-time professional effort) commitment to the career award. Explain how these responsibilities/activities will help ensure career progression to achieve independence as an investigator.

PA-24-182: https://grants.nih.gov/grants/guide/pa-files/PA-24-182.html



NIH asks reviewers to consider these questions for the *Career Development Plan, Goals and Objectives*

- What is the likelihood that the plan will contribute substantially to the **scientific development** of the candidate and lead to **scientific independence**?
- Are the candidate's **prior training and research experience** appropriate for this award?
- Are the **content, scope, phasing, and duration of the career development plan appropriate** when considered in the context of prior training/research experience and the stated training and research objectives for achieving research independence?
- Are there adequate **plans for monitoring and evaluating** the candidate's research and career development progress?

PA-24-182: https://grants.nih.gov/grants/guide/pa-files/PA-24-182.html



Describe why you selected the mentor in the Career Development Plan

Describe your mentor(s), their expertise, and what they can provide to help you achieve your training goals (1-2 sentences each).

Describe your plan for meeting **weekly with your Primary mentor**, regularly with other mentors and bringing them together to review your progress, assist with resources, and alternative strategies - to create synergy! State communication plans for keeping your mentor(s) up-to-date.

If you form an Advisory Committee, do the same but keep it brief – their role is as experts and a safety net.



Use a table to describe your mentoring team

Role	Research Interests	Areas of Expertise	Training Activity
Primary Mentor: Dr. XYZ My University			
Co-Mentor: Dr. ABC Distant University			

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In their section, 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

Your description of mentoring must match your mentors' description!



You may include other individuals who will contribute to your project

Collaborators — resources and/or expertise

Consultants — fee-for-service

Advisory Committee — additional advice & guidance

- must provide signed statements agreeing to participate and describing role (biosketch not required)
- **6 page limit** for all letters of support from collaborators, contributors & consultants
- cannot provide letters of reference



You need to account for any of your effort that is not covered by the K Award

K Awards require a minimum of 75 % effort (can be negotiated down to 50% for surgical specialties)

The remainder of your effort may be devoted to clinical practice, education or other activities

You must include a description & justification of any effort that is NOT covered by the K Award funding



Include a Timeline of Career Development Plan Activities and Milestones

Training Activities	Year 1	Year 2	Year 3
Courses			
Workshops			
Seminars & Conferences			
Mentor Meetings			
Advisory Board Meetings			
Milestones	Publish 1 manuscript	Publish 2 manuscripts	Submit R01



You will also need Letters of Reference to support your proposal

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

see: http://grants.nih.gov/grants/how-to-apply-application-guide/submission-process/reference-letter.htm



Plan now for Reference Letters

- Review and confirm your list (mentors are excluded)
- Check that they are available, willing and excited to support you for your K application
- Make their job easy – provide them with updates on your research, your goals, Specific Aims
- Show respect and appreciation

Reference Letters are due to the NIH eRA Commons by the K submission deadline!

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Discussion . . .

Selection of your

- Mentors
- Collaborators & Consultants
- Advisory Board
- References

NIH asks reviewers to consider these questions for the *Research Plan . . .*

- Are the proposed research questions, design, and methodology of significant scientific and technical merit?
- Is the prior research that serves as the key support for the proposed project rigorous?
- Has the candidate included plans to address weaknesses in the rigor of prior research that serves as the key support for the proposed project?
- Has the candidate presented strategies to ensure a robust and unbiased approach, as appropriate for the work proposed?
- Has the candidate presented adequate plans to address relevant biological variables, such as sex, for studies in vertebrate animals or human subjects?
- **Is the research plan relevant to the candidate's research career objectives?**
- **Is the research plan appropriate to the candidate's stage of research development and as a vehicle for developing the research skills described in the career development plan?**

PA-24-182: https://grants.nih.gov/grants/guide/pa-files/PA-24-182.html

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

6–8 pages
Career Awards

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

NIH has specific requirements for RCR instruction

Instruction must recur at each career stage (student, postdoc, faculty)

Face-to-face instruction is required (min. 8 hours) (online courses alone are not sufficient)

You must address **5 Instructional Components:**

1. Format of Instruction
2. Subject Matter
3. Faculty Participation
4. Duration
5. Frequency

New NIH RCR Guidelines include new topics!

Limited to 1 page (item 6)

see: NIH Notice NOT-OD-22-055

Write to the review criteria!


Candidate


Career development plan


Research strategy


Mentor


Environment & Institutional Commitment

A strong response for each criterion!

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