

What are K-08 grants?

Created by virtually all NIH institutes to address critical shortage of physician-scientists -
Only physicians who are US citizens or permanent residents can apply

Provide most of an entry level salary and a small amount of supply costs to ease transition of physicians to careers in research

48 at UCSF in 2004

K-23 (for patient-based research)

39 at UCSF in 2004

What does a K-08 fund?

Up to \$75,000 salary, plus benefits
(most institutes)

\$25,000 - \$50,000 for supplies, travel, etc.

5 years for most institutes (3 for M.D./Ph.D
for some institutes, e.g. NIAID)

So doesn't really fund an independent research
program, but provides enough to give you the
time you need to establish independence

New Award - K99/R00 (Pathways to Independence)

\$90,000 for two years as post-doc (MD and/or PhD applicants eligible)

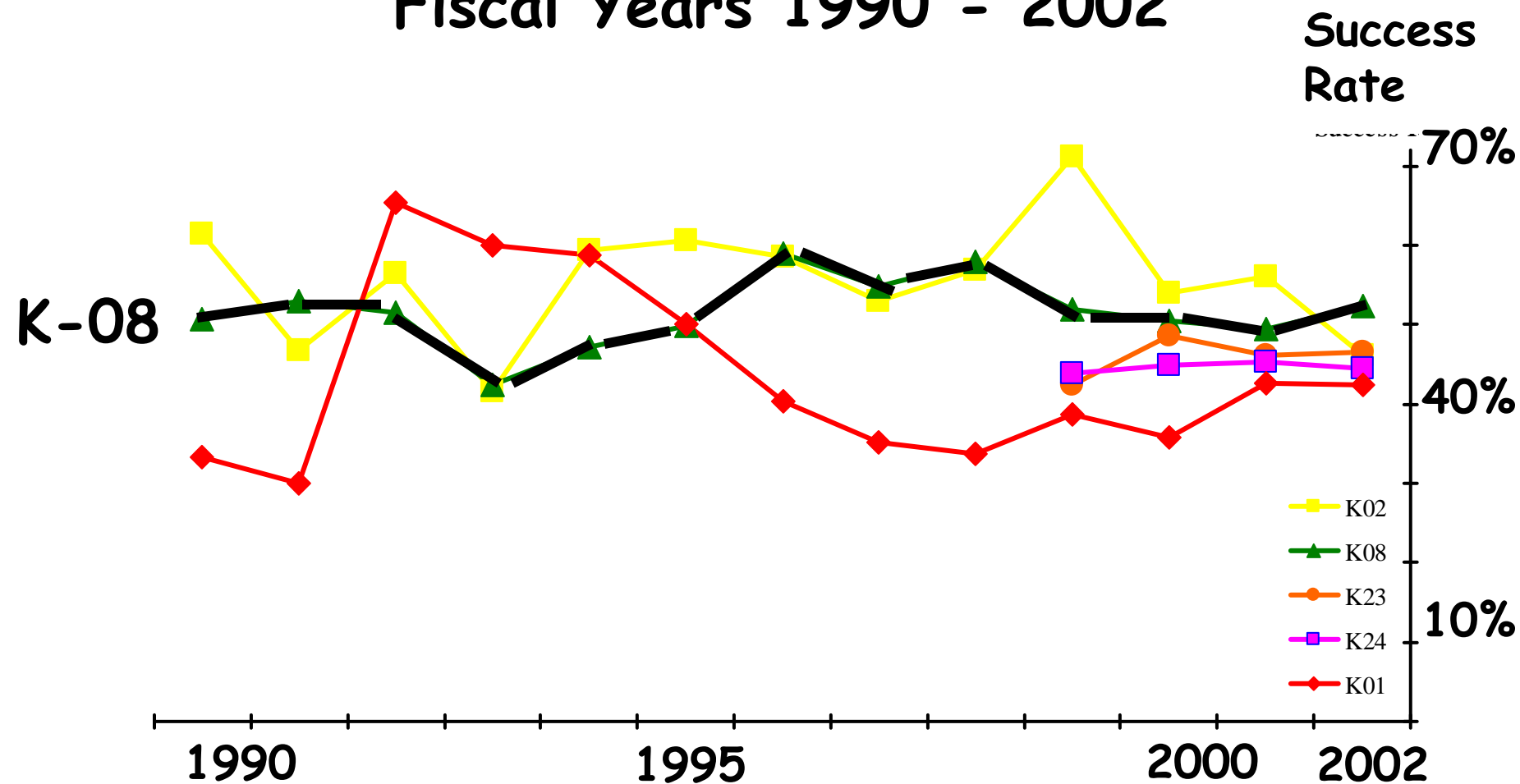
**Up to \$249,000/yr for 3 years as faculty
Requires new faculty appointment**

**Small number to be awarded by each institute
this year (150-200 total)**

**Not required to be US citizens/permanent
residents**

Success Rates for Selected *K* Activities

Fiscal Years 1990 - 2002



When should you apply?

Applicants with prior publications (especially high profile publications)

When you have enough data (post-doc) to support a focused 5-year research plan

No prior publications

Same as above, but generally do better with at least one paper in press by review time

Reasons to apply early (e.g. during second year of post-doc)

You can get paid more

If you are interested in competing for permanent faculty positions early, you make yourself more competitive with a K grant

Preparing the application helps you focus on the most important experiments that will lead to your own independence

Reasons to wait

Grant runs for 5 years. If you would benefit from more than 2 more years in mentor's lab, might not have enough time left to get own program going when move to permanent position

More you accomplish as a post-doc the stronger your application will be

Might take 3-4 years to establish track-record to successfully compete

How are K-08s reviewed (general)?

Special panels only for training grants
(expertise of reviewers decidedly mixed)

In contrast to RO-1s, scientific importance and experimental methods are not necessarily major focus of review

“Training plan”, training environment, and institutional commitment key issues to reviewers

Most failed K-08s from UCSF fail because of inadequate attention to training plan and/or institutional commitment

Planning the grant

Grants can be submitted on Feb 1, June 1 and October 1

Begin writing specific aims at least 6 months before your planned submission

Leave 1-2 months for mentor, colleagues not directly familiar with your research to provide feedback

Abstract

Perhaps most important part of grant

Reviewers read this first and often begin to rank grants based on abstracts

Spend many hours making this clear and exciting

Research plan

Ideally there should be some connection to your specialty/subspecialty

Don't propose more than 3 specific aims

All aims should be tightly focused on a unifying scientific theme

Address questions that are important but don't over-reach

Research plan - pitfalls

“Overly ambitious” - most common critique of failed K-08s

Remember, reviewers may not be terribly successful themselves - they often doubt a new investigator could accomplish more than they have

Once you get the grant, you can, and should, be as ambitious as you like

Research plan - pitfalls

Include letters from investigators who have promised critical reagents (e.g. mice, antibodies, cDNA constructs)

Try not to base multiple experiments on reagents that have not yet been developed (e.g. lines of mice)

Be thorough but don't provide unnecessary specific details

Research plan - pitfalls

Discuss potential problems of proposed plan and cite a variety of solutions

Avoid mentioning problems if you have no solutions

Training plan

As important as research plan

Describe a committee that you will meet with at least bi-annually (should be four faculty, including mentor)

Specify how each member will help with your research, training and career development

Include letter and Biosketch from each

Training plan

Describe courses you will take and why

Include research ethics training (required) and no more than two courses/year - most in first few years

Seminars, retreats and national meetings you will attend and present work at

Describe plans and timing for obtaining additional funding

Training plan -pitfalls

Inadequate attention to training plan most common reason for failure of K grants

Listing unrealistically large number of courses a common problem

Failure to adequately describe or justify committee (and omission of letters and/or Biosketches) also common

Mentor

If your mentor is junior or not a physician, not in your specialty, you should include a co-mentor

Be sure mentor's description of training plan matches yours

Be sure mentor lists previous trainees and their current positions (an important criterion for review)

Institutional Commitment

Serious potential pitfall at UCSF

Rules explicitly state that any described faculty position should not be contingent on funding

Reviewers look for explicit statement that lab and office space are assigned to you

Potential Solutions

Try to include a statement in mentor's and/or Department Chairs letter like "Dr. X has been assigned office space and 200 asf lab space in the Diabetes Center on HSW 11"

Actually, the space described will generally be assigned to your mentor but s/he will let you use it

Potential Solutions

Try to include a sentence in the Chair's letter (which you should draft) like, "The Department of Medicine expects to appoint Dr. X as an Assistant Professor in July, 2004. At least 75% of his/her time will be protected for his/her independent Research."

Avoid

“Dr. X will have access to a lab bench and desk in Dr. Y’s laboratory”

“If Dr. X receives this grant s/he will be appointed an Adjunct Assistant Professor”

How are grants reviewed (specific)?

1. Read abstracts of all grants assigned
2. Carefully read specific aims
3. Biosketches of applicant, mentor, etc
4. Look over figures in preliminary results
5. Review training plan, mentor statement, institutional support, resources
6. Methods, background, prelim results in more detail

Top 10 reasons for unsuccessful K app

10 - Overly ambitious research plan (6 new conditional mouse lines, 150 microarrays and extend mouse studies to disease-causing mutations in humans)

9 - Failed to identify potential problems with described methods or propose solutions

Top 10 reasons for unsuccessful K app

8 - Unclear connection to long-term career goals - Pulmonary physician proposes to examine mechanisms of axonal guidance in *C. elegans*

7 - Uncertain mentorship. Hematologist will have newly recruited Assistant Prof in Biophysics as sole mentor

Top 10 reasons for unsuccessful K app

6 - Ill-defined training plan - applicant appears to have down-loaded graduate school course list - no rationale for why 50% time will be spent in coursework

5 - Uncertain mentorship - mentor lists no previous trainees and appears to be unaware of applicant's planned coursework. Mentor has inadequate funding

Top 10 reasons for unsuccessful K app

4 - Applicant lists a committee of four faculty but provides no rationale for why each was chosen. No Biosketches or commitment letters are included from members.

3 - Inadequate protected time. Applicant will be attending 4 months/year and will staff 2 1/2 day clinics weekly

Top 10 reasons for unsuccessful K app

2 - Weak institutional commitment - Chair states he is "fully committed to Dr. X's career development", but the applicant has no assigned lab space, office space or secretarial support

1 - Weak institutional commitment - the applicant will only be appointed to the faculty if this K application is successful

The end

Connection between K grants and faculty appointments at UCSF

Most departments appoint K awardees as Adjunct Assistant Professors

Think of grant as an extension of training - use time to establish yourself to effectively compete for permanent faculty positions here or elsewhere

Permanent faculty positions (e.g. in Residence or Tenure track appointments) are selected by open searches, not as an extension of K awards

Grants by career stage

Graduate school - NSF and/or NIH NRSA

Post-doc-
NRSA and/or other individual fellowship
(during first 6 months in lab)

K-08 generally within the first 3 years as
post-doc

Organization of research plan

A. Specific aims - 1 page including intro paragraph - 6 months in advance

B. Background and significance - 3 pages
an advertisement with relevant references
- organized in order of specific aims.

C. Preliminary data - ideally also in order of aims - focus on convincing figures that support and justify your aims and prove you can do what you propose

Organization of research plan

D. Proposed experiments

Again by aims in order - begin with "rationale" to explain the logic of what you propose

Finish with "anticipated results and significance" that should include discussion of problems and solutions and tell what you would do next -room for ambitious ideas

K-08 Funding Rate - 2002

| | | |
|-------|--------|-----|
| NEI | 7/9 | 78% |
| NIAID | 50/69 | 72% |
| NIGMS | 5/7 | 71% |
| NICHD | 16/23 | 70% |
| NIDDK | 51/76 | 67% |
| NINDS | 34/61 | 56% |
| NIDCD | 5/9 | 56% |
| NHLBI | 53/99 | 53% |
| NIMH | 14/31 | 45% |
| NIA | 9/23 | 39% |
| NIAMS | 8/23 | 35% |
| NCI | 33/107 | 31% |

Overall success > 50%

UCSF 2004

48 K-08

39 K-23

16 K-01

12 K-02