Nuts and Bolts of K Awards Application

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Overview

- What is a "K"?
- "K" organization
- Submission
- Review

What's a K award?

- Mentored career development award from NIH

- Available from most institutions within NIH, but not all

- Choose appropriate Institute/Center (IC):
  - E.g. NINDS, NIMH, NIA, NIAAA, NICHD, NIDCD, NHLBI, NIDA, NIDDK, NCI, etc

Why apply for mentored funding?

- Need to develop skills/expertise to be able to successfully operate your own research program

- The mentored career development awards protect time (from clinical duties) for you to develop skills/expertise you will need to be independent

- Also a significant advantage when applying for independent research funding (e.g. R01, VA Merit award)

Getting started

- What's my question?

- What are my goals?

- What ***training*** is needed to meet goals and begin to answer the question?

- Basic science/Clinical/Translational?

- Mentored?
  - Who is mentor/mentoring team? Why?

Have open discussions with your mentor

- Generate your question and devise specific aims

- Seek advice from your mentor regarding development of a training plan, best techniques/models to learn, and other mentors/advisers to incorporate into your training program

- Have a frank discussion with your mentor that concretely lays out what aspects of the proposal you will be able to continue with in your own lab and in your own independent grant

What's a K award (con'd)?

- Typically mean K08 or K23
  - For MDs or MD/PhDs
  - US Citizen or permanent resident
  - K08 for basic science; K23 for clinical research
  - 5 years funding – mentored
  - 75% FTE (50% FTE neurosurgeons)
  - NINDS - $100K/yr salary + fringe; $51K/yr spending ($1K/yr conference); 8% F & A
  - Funding at about 35% at NINDS
  - One resubmission

- Other Ks – K01, K02, K12, K22, K25, K99/R00

Other "K" types

- K01 – promote diversity (NINDS)
- K02 – bridge award between K08/23 and R01/P01 (used differently by different ICs)
- K12 – "institutional" K
- K22 – post-doc career transition
- K25 – for individuals trained in "quantitative" methods who want to learn "bench" techniques to strengthen their experimental repertoire

Other "K" types (con'd)

- K99/R00 – "kangaroo"; Pathway to Independence Award
  - Also open to PhDs and non-US Citizens
  - Highly competitive
  - Need to be pretty close to being independent
  - 2 yrs mentored - $85K/yr salary; no spending
  - 3 yrs independent - $249K/yr salary & spending; starts after get job

How does this compare to R01?

- Also typically 5 yrs
- About $250K/yr (Ten $25K "modules")
  - portion of salary & fringe, personnel salaries, research spending money
- F & A rate negotiated between institution and NIH
  - Currently 54.5% at U Iowa

Other CDA grant mechanisms

- VA CDA
- NSF
- AHA
- AAN
- Foundations – seek guidance from mentor
- Grants and Contracts website
  - Monthly update of grant deadlines
  - Can get on email list for updates and special seminars
- After/During K
  - R01, R03, R21, P01, K02 (timing of K02 depends on institution)

Anatomy of a K

- Face page
- TOC
- Brief summary (abstract)
- Statement of public health relevance (Narrative)
- *Candidate Background*
- *Career Goals*
- **Career Development Plan**
- *Responsible Conduct of Research*
- *Specific Aims*
- *Research Strategy*
- *Preliminary Data*
- Equipment
- Facilities & other resources

- Institutional commitment
- Institutional environment
- Budget
- Budget justification
- Vertebrate animals
- Human subjects
- References
- Mentor/Co-mentor letters
- Three letters of support
- Collaboration/consultant letters from all advisors
- NIH Biosketches from all mentors/advisors
- Other support info from mentor/co-mentor(s)

Anatomy of a K

- Meat of it is ***12 pages maximum***
  - Candidate Background
    - How did you get to this point in your career?
    - Why are you the perfect person for this project?
  - Career Goals
    - What do you see yourself doing in the future?
    - How does this fit in?
  - Career Development Plan
    - How will this prepare you to be clinician-scientist?
    - Include mentoring/advising committee
  - Training in Responsible Conduct of Research
    - Course through post-doc office

To paraphrase…

- I had these experiences/training in HS/UG
- And additional experiences in Med/Grad School
- That made we want to be X doctor studying ABC
- To get there I need the training from this K
- I will get this training by
  - Development plan (including plan to write "R")
  - Completion of aims

Anatomy of a K (Con'd)

– Specific Aims
  - One page
– Research Strategy
  - Significance, Innovation, Approach
– Preliminary Data
– Research Plan

Specific Aims

- Clearly and concisely state the problem, including what is "unknown", what is the "gap in knowledge", and what is "the critical need"

- Clearly state your goal and overarching hypothesis

- Briefly describe 2-3 clear, feasible, INDEPENDENT specific aims with a "working hypothesis" for each and a sentence about the approach and expected results
  - Most K's will be just fine with 2 aims

- A concluding "payoff" paragraph is nice

Research Strategy

- **Significance**
  - Set up the problem
  - Rigor of prior research
    - Strengths/weakness of previous work
  - Need (what "gap" does this fill?)
    - How will weaknesses of previous work be addressed

- **Innovation**
  - Conceptual
    - Challenge the status quo
  - Technical
    - New techniques (***stress training***)

Research Strategy: Approach

- For each Aim/Sub-aim
  - Rationale/background
  - Experimental Design
  - Expected results
  - Potential Pitfalls/Alternative Approaches/Future Directions
    - What if you don't see what you expected?
      - Were you wrong? What could that mean?
      - Did you do it wrong? What else could you try?
    - What will you do next (in your R)? Why?
- Throughout: STRESS TRAINING

Preliminary data

- Can be presented just before Research Strategy or can be incorporated into Research Strategy

- Don't necessarily need a lot, but need some
  - Collected by you is better
  - Some data from mentor/adviser labs for techniques you will learn can help to speak to *feasibility*

After preparing a draft

- Give it to a few people to look at
  - Mentor, advisors, people who have gotten Ks, people who have good grant-getting track record
  - Appreciate that this will take them ***TIME***
- You will need an eRA Commons account and Grants.gov accounts
  - business office will help with this but they need to know you want them
- Submit to Division of Sponsored Projects/DSP
  - recommend 10 business days, but 5 days probably sufficient with electronic submissions

After preparing a draft - Critical

- Read it critically yourself before submitting to ensure no typos or formatting errors, no page limit violations, and that all required components are included

Anatomy of a K

- Face page
- TOC
- Brief summary (abstract)
- Statement of public health relevance (Narrative)
- *Candidate Background*
- *Career Goals*
- *Career Development Plan*
- *Responsible Conduct of Research*
- *Specific Aims*
- *Research Strategy*
- *Preliminary Data*
- Equipment
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- Institutional commitment
- Institutional environment
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- Budget justification
- Vertebrate animals
- Human subjects
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- Collaboration/consultant letters from all advisors
- NIH Biosketches from all mentors/advisors
- Other support info from mentor/co-mentor(s)

Anatomy of a K (Con'd)

- Face page – business office will help
- TOC – business office will help
- Brief summary (abstract)
  - 30 lines
  - this is what will be publically available on-line
- Statement of public health relevance (Narrative)
  - 3 sentences
- Equipment
  - Equipment available to you
  - Good to show that you have what you need to complete the experiments you propose; can talk about available equipment for techniques you will learn
- Facilities & other resources
  - Facilities and resources available to you
  - Good to show what support there is at your institution to help you complete your experiments
  - Explain how you get access to facilities (e.g. fee for service, freely available as part of a core, etc)

Anatomy of a K (Con'd)

- Institutional commitment
  - Letter from your chair ***explicitly stating your protected time*** and that your appointment is not dependent on you receiving funding
- Institutional environment
  - How is your institution uniquely suited to support your training?
- Budget
  - Salary up to the cap; $51K/yr spending (do not need to itemize); F & A
- Budget justification
  - Needs to include mentors/advisers even though they will be 0 FTE
  - Mention types of things funds will be spent on
- Vertebrate animals
- Human subjects
- References
  - Papers cited

Anatomy of a K (Con'd)

- Mentor/Co-mentor letters
  - Important!
  - Included as part of your application

- Three letters of support
  - Separate from mentors and advisers
  - Submitted separately by letter writers

- Collaboration/consultant letters from all advisors
  - Also submitted as part of your application
  - Need to demonstrate their commitment to helping you with your training
  - Level of involvement should exactly match what you outline in your training plan

- NIH Biosketches from all mentors/advisors
  - Personal statements should be tailored to your training/research plan

- Other support info from mentor/co-mentor(s)
  - To demonstrate there are funds to support your training
  - And to demonstrate whether there is real or perceived overlap

Advice

- Good idea to talk to people that were successful in getting K funded
  - And talk to their mentors

- Look at their grants *and critiques*

- Talk to the program officer – can give a sense if the topic is right for their institution and if the plan seems appropriate in scope and training plan; *LISTEN TO THEM!*
  - *I view this as a mandatory step*

- Have people read it – develop a thick skin

Standard Submission Dates

- http://grants.nih.gov/grants/funding/submissionschedule.htm

- **For First Submissions**
  - February 12/June 12/October 12
  - Study Sections Jun-Jul/Oct-Nov/Feb-Mar
  - Council Sept-Oct/Jan-Feb/May-June
- **For Second Submissions**
  - March 12/July 12/November 12
  - Study Sections Jun-Jul/Oct-Nov/Feb-Mar
  - Council Sept-Oct/Jan-Feb/May-June

Submitting

- You need an eRA Commons account
  - Business office can help you obtain this
- Submit locally to Division of Sponsored (DSP) projects
  - They will check adherence to guidelines, formatting, etc
- 10 business days prior to due date
- Once they have determined proposal is complete they will submit it for you

Scored Review Criteria for NIH K-Awards

1. Candidate

2. Career Development Plan / Career Goals & Objectives

3. Research Plan

4. Mentor/Co-Mentor(s), Consultant(s), and Collaborator(s)

5. Environment and Institutional Commitment to the Candidate

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NIH Scoring System

Score	Descriptor	Additional Guidance on Strengths/Weaknesses
1	Exceptional	Exceptionally strong with essentially no weaknesses
2	Outstanding	Extremely strong with negligible weaknesses
3	Excellent	Very strong with only some minor weaknesses
4	Very Good	Strong but with numerous minor weaknesses
5	Good	Strong but with at least one moderate weakness
6	Satisfactory	Some strengths but also some moderate weaknesses
7	Fair	Some strengths but with at least one major weakness
8	Marginal	A few strengths and a few major weaknesses
9	Poor	Very few strengths and numerous major weaknesses

Minor Weakness: An easily addressable weakness that does not substantially lessen impact
Moderate Weakness: A weakness that lessens impact
Major Weakness: A weakness that severely limits impact

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Overall Impact Score

– Likelihood for the project to exert a sustained, powerful influence on the research field involved

– Reflects the 5 scored criteria (weighted based on each reviewer's judgment) and other criteria that count towards the score
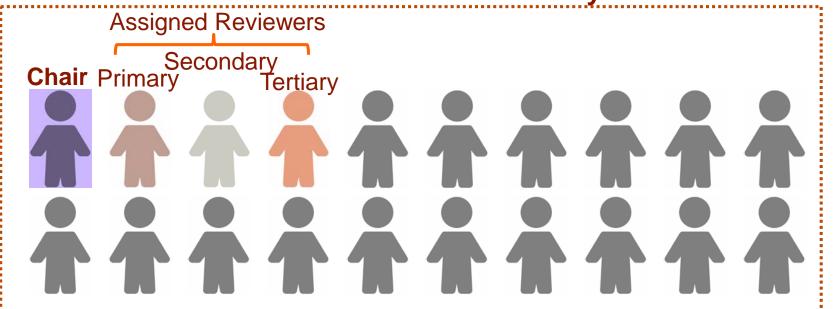
Impact	Score	Descriptor
High Impact	1	Exceptional
	2	Outstanding
	3	Excellent
Medium Impact	4	Very Good
	5	Good
	6	Satisfactory
Low Impact	7	Fair
	8	Marginal
	9	Poor

https://grants.nih.gov/grants/policy/review/rev_prep/scoring.htm

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How is an NIH Study Section organized?

NIH Scientific Review Officer (SRO)

Study Section Members

Assigned Reviewers

Chair   Primary   Secondary   Tertiary

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How is an NIH grant application reviewed?

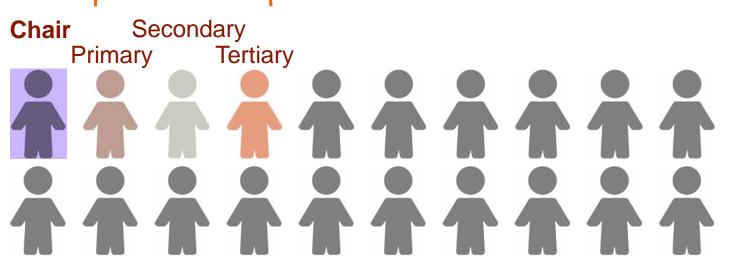**Top 50%:** Discussed at Study Section Meeting

- Assigned Reviewers present to group
- Chair leads discussion amongst all study section members
- ALL study section members submit an impact score (1-9)
- **Average of ALL scores determines the final impact score**
- SRO writes summary statement

Preliminary score

Bottom 50%: Not discussed ("triaged")

- Written comments from assigned reviewers provided
- In many cases, worthwhile to revise and resubmit

Assigned Reviewers

Chair

Secondary

Primary   Tertiary

SRO

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K08/K23 Program Announcement (PA)

- PA-19-117 (K08); PA-19-119 (K23)
  - https://grants.nih.gov/grants/guide/pa-files/PA-19-117.html
  - These are w/o clinical trial; 116 & 118 w/ clinical trial

- Gives links to institute specific guidance for completing application

- Also gives links to appropriate forms
  - SF424 (R&R) application package
  - NIH Biosketch

Websites

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

- http://grants.nih.gov/training/kwizard/index.htm

- https://grants.nih.gov/grants/guide/pa-files/PA-19-117.html

- https://grants.nih.gov/grants/guide/pa-files/PA-19-119.html