



Kick starting PS Career: Primers on K award

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Disclosure

I have no conflict of interest associated with this talk







STEP 1: PERSPECTIVE





http://deblogs.depaul.edu/guest/Pages/Prospective.aspx





Purpose of the K award

Understanding the perspective of the evaluation panels and the funding institutions will help you directly address those procedural needs









Common perspective

 To protect my time and fund my research







Common perspective

 To protect my time and fund my research

You will focus on the research and its immediate impact







Common perspective

 To protect my time and fund my research

From FOA

 To prepare an individual for a career with a significant health impact

You will focus on the research and its immediate impact





Common perspective

 To protect my time and fund my research

From FOA

 To prepare an individual for a career with a significant health impact

You will focus on the research and its immediate impact

You will focus on your career and its longterm impact

Pediatric Scientst Development Program



PLIC	ATION FC	DRM
	First Name	Middle
1	City	State
Oll Phone:	Email address:	
] No		



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Perspective: Purpose of the K <u>application</u>



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Perspective on the K application affects how you write

Common perspective

 To tell the world about my awesome research so NIH will give me money to fund it

From FOA

To ask for an investment in my potential to fill a needed niche

You will include a lot of unneeded scientific background You will describe how your project will lead to an impactful career





SET AN APPLICATION TIMELINE



- Give yourself at least 4 months and involve mentors from the beginning
- Place reminders and hard stops on your calendar
- Plan to complete a week before actual due date and pay attention to internal deadlines



Enlist final reviewers who haven't seen drafts before





STEP 2

CHOOSING THE RIGHT MECHANISM





http://www.utsouthwestern.edu/newsroom/ http://hospitalnews.com/bridging-the-gap-between-research-andpractice/







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CHOOSING THE RIGHT MECHANISM



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The NIH "K"

Career Development Award







CHOOSING THE RIGHT MECHANISM

- Each K mechanism is designed to develop the career of a certain kind of investigator
- Often individual ICs will have their own purposes within a mechanism
- Often individual ICs will financially support different mechanisms to varying degrees







CHOOSING THE RIGHT MECHANISM

Internal K

- K12
 - therapeutic area specific
- KL2
 - Usually specialty agnostic
 - Part of Institutional CTSA award
- May be more or less competitive than external
- Shorter duration (2-3 years)

Special Ks

- Pesiatric Science Development Program
- **K76** Emerging Leaders
- K02, K22 Non-mentored career transition

External K

- K01
 - often used by ICs for specific purposes
 - e.g., training in a new field, re-entry into science, enhancing diversity, etc
- K08
 - Generally biomedical "discovery" sciences
- K23
 - Generally patient-oriented research
- Usually a limit on the time you can hold
 - K05,K18, K24, K26 Mid-established career
 - **K25** Quantitative Scientists



STEP 3

COMPELLING YOUR AUDIENCE





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Peciatric Scientist Development

Program

https://www.nih.gov/file/17211





YOUR AUDIENCES

- K reviews are often done through the Scientific Review Branch of the funding institution
- Reviewer expertise across panel is broad; each ultimately has equal scoring power
- NIH has specific guidelines for reviewers
- Reviewers are burdened by many applications and many other hats



By knowing to whom you speak, you address their specific concerns and interests



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Scientist

COMPEL:

Enlist your primary reviewer as an advocate

- Make review criteria easy to find
- Think ahead: allay fears before they ask
- Demonstrate vision





START FROM COMMON GROUND

Appreciate the vastness of experience in the study section

Avoid jargon: Use abbreviations <u>very</u> sparingly







At the moment thousands of different fonts exist. Any user can have to his reach some hundreds (those included with the common programs.) Although the election of the typography for a document is a question, in good part, of personal tastes (and fashions), come consensus exists between the specialists in a series of basic points. The world of typography is a fascinating one, and in this manual we have devote a whole section to it. If what we want is a easily legible text, we must discard letters with very ornamented shapes or decorative lettering. These must be reserved for special uses (posters, titles, initials, logos...) The body text must be made up with discreet, easily legible letters (but also refined and pleasant to the reader.)

Serif and sans serif —or simply sans— are the obvious choice for body text. They're the classical type designs, evolved through the centuries to make the experience of reading as easy and pleasurable as possible. Thousands of available digital fonts exist, and they fall into different categories of typeface classification, something every designer should take some time to know. It's possible to find extensive information about type history and classification in different books and websites. The one-for-all type resource on the net is, of course, Luc Devroye's On snot and fonts, easily considered the font resource.

The most current size for the normal text is between the 10 and 12 points. A point is equivalent to 1/72 of inch. If we design a composition with multiple narrow columns, the size can be reduced to 8 or 9 points; the bigger the paper, the larger the fonts can be, and the other way around. For example, if we use oversized paper or posters, we can increase it proportionally. For the headings there are no fixed rules, but often they are specified at a 20% superior or inferior size to the text size, together with a changes of style where necessary (using bold or italics.) This means that for a text to 10 points, a subtitle (or second level heading) of reasonable size could have about 12 points. If the text is greater, to 12 points, the subtitle would have to be increased to 14-14,5 points, and so on. In printed designs, you usually specify the sizes using the absolute units of points, but you can easily calculate the sizes or calculate them only once, and print it out in a table and have it near at hand —see our own example below. Web designers can take advantage of relative units, like percentages, or em units to create layouts where all the sizes of the elements get scaled in the same way when the user chooses a different size for the text.

Don't trust the defaults! The default size of many programs is 12 points, just a bit too large for printed text, although it's fine for the screen. For printed documents, it is more professional and inviting to read a size of 10 to 11 points (or perhaps 10.5 points.)

These are some orders that would have to be followed —always! Many errors that are committed derive to apply the typewriter habits and practice (with many limitations) to word processing or DTP programs, which are much more flexible. Let us remember: an appropriate font for the body of text must be used, with a size that makes the reading comfortable.

If you are creating a document with long blocks of text, such as a book, or a long article in a magazine, never mix too many different fonts in each page. It's hard to resist the temptation: after all you have so many fonts to choose! But the look of the page will be chaotic —or will look like a fonts catalogue. "Too many" fonts, in this case, could be an absolute maximum of 4 different fonts, including the cursives If you can get away with fewer fonts, 2 or 3, even better.

The leading (the spacing between text baselines) is another important characteristic of the text. Many programs



https://www.nih.gov/file/17211









White Space







https://www.nih.gov/file/17211





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Simple conceptual schematics









STEP 4

IDENTIFY THE RIGHT TRAINING FOR WHO YOU WANT TO BE

Begin with the End in Mind

-Franklin Covey



1. How do the proposed activities prepare you for an important career?

- 2. How does the proposed research promote NIH and IC goals?
- 3. How does your career goal fill a necessary investigator niche?





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THE RIGHT TRAINING FOR WHO YOU WANT TO BE

- Training gaps to reach your research goals
 - There are so many options, what's right for you?
- Mentors pre-conceived notions
- Highlights
 - Your wealth of capabilities
 - Institutional resources (technological and intellectual)
 - Access to unique resources (cohorts, datasets, etc.)



Identifying your training gaps will allow you to design an effective strategy for filling those gaps.



IDENTIFYING TRAINING GAPS

Objective	Resource	Vision
Increase my understanding of clinical data evaluation	 Unique database relevant to your scientific question Course in clinical data analysis Potential Mentor with expertise in clinical data analysis (likely in a field different from your own 	Added value to my expertise as a sepsis investigator. Allows me to identify critical outcomes and critical questions that I might miss with my current training. Allows me to appropriately interpret my data
Increase my understanding of the basic mechanisms of pathology	 Access to several drugs under investigation Access to cell line and animal models Potential mentor with expertise using these animal models 	An increased mechanistic understanding will improve my ability to develop personalized medicine strategies







RIGHT MENTORING TEAM

- Must have expertise in a different area of growth
- This area must be an important focus of your future career





- Must have expertise in an area of growth
- This area must be an important focus of your future career
- Must have experience mentoring

- Advises on technical areas not an essential part of your future career
- Assesses milestone progress







STEP 5 MINIMIZE RELIANCE ON INFERENCE



http://www.arch2o.com/reading-between-the-lines-gijs-van-vaerenbergh/







HOW TO AVOID RELYING ON INFERENCE

- Be explicit
- Explain why information is relevant to the proposal

Example:

"My previous experience of shadowing a radiology specialist highlighted for me the pace at which imaging technologies advance. By increasing my understanding of the nuances of radiation physics, as I have detailed in my training plan (Figure X) under the guidance of Dr. Rancor, I can better evaluate how emerging technologies influence residual tumor detection following resection."





STEP 6:

DESIGNING AN APPROPRIATELY FOCUSED PROJECT







FINDING THE RIGHT SCOPE

- K grant must address a <u>significant scientific question AND</u> prepare you for an <u>important scientific career</u>
- Mechanistic insight may be an important component to some of your reviewers—a few on every panel
- Too broad a focus seems disorganized and may not lead to important findings
- Too narrow a focus leaves little room for you to grow



Design a project that demonstrates clear areas of growth, but answers a very targeted question





A FEW EXAMPLES

a get rid of these, just and it always carry a notebook and an write these things down in. The lates serves to focus my thoughts and we a spare moment and need to fig that to do next. By keeping event is any part of my brain the lates what I have to do go

Too broad

- Screening
- Aims that employ too many different kinds of unfamiliar techniques
- Disjointed aims that together will not answer a single question

Too narrow

- All aims/techniques fall within a single familiar field
- Each aim is really just an experiment that asks the same question in a different way
- You can not explain how your potential findings will impact public health







OTHER CONSIDERATIONS:









STEP 7:

BALANCING RESEARCH TRAINING, CLINICAL DUTIES, AND PROFESSIONAL DEVELOPMENT









BALANCE

 Research project and career development activities must account for 50-75% of your time

Writing a K offers a rare, job sanctioned opportunity for

• You likely have other responsibilities: clinical duties, teaching duties, other research projects, and/or VA responsibilities (not to mention the rest of your life)







START WITH A TIMELINE

Activity	Year1	Year2	Year3
Aim 1	35%	20%	35%
Enrollment	30%	0%	0%
Experiment	5%	20%	15%
Analysis	0%	0%	20%







START WITH A TIMELINE

Activity	Year1	Year2	Year3
Aim 1	35%	20%	35%
Enrollment	30%	0%	0%
Experiment	5%	20%	15%
Analysis	0%	0%	20%
Aim 2	15%	30%	20%
Experiment 1	15%	10%	0%
Experiment 2	0%	20%	20%







START WITH A TIMELINE

Activity	Year1	Year2	Year3
Aim 1	35%	20%	35%
Enrollment	30%	0%	0%
Experiment	5%	20%	15%
Analysis	0%	0%	20%
Aim 2	15%	30%	20%
Experiment 1	15%	10%	0%
Experiment 2	0%	20%	20%
Course work	15%	5%	0%
Professional development classes	5%	5%	5%
Manuscript preparation	5%	10%	10%
R01 equivalent preparation	0%	5%	5%
Total effort on K	75%	75%	75%
Clinical Duties	25%	25%	25%
Totals	100%	100%	100%





ASSESS

- 1. Does your timeline accurately reflect how much time each element will take?
- 2. Is it feasible?
- 3. Is your institution on board?
- 4. Does every task directly serve your career goal?
- 5. Does the timing demonstrate movement toward independence?
- 6. Where can you cut if needed?
- 7. Where can should you add?



8. Do you still want to do this?





STEP 8 COMMUNICATING YOUR POTENTIAL FOR SUCCESS



www.maximumadvantage.com www.pricelessprofessional.com







DEFINE YOUR INDEPENDENT RESEARCH PROGRAM









Two applicants

Sarah and Marie have **both** made exciting and innovative observations. They have each come up with fantastic, **well-designed research plans**:







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Two applicants

Sarah

- This research plan is right in her wheelhouse, and she knows she can be successful.
- Many of her more senior colleagues have expertise in this area as well and have agreed to consult whenever necessary







Two applicants



- This research constitutes a **new direction** for Marie and she will have to do a considerable amount of work to make it happen.
- None of her more senior colleagues do exactly this kind of research, but there are experts in the new skills she needs, who have agreed to teach her.

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Scientist

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Two applicants

Sarah and Marie have both made exciting and innovative observations. They have each come up with fantastic, well-designed research plans:

Sarah

- This research plan is right in her wheelhouse, and she knows she can be successful.
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FIRST, WRITE WHEN YOU ARE SITUATED FOR SUCCESS

- If you don't need career development, don't apply for a K
- Indicators of potential success
 - Have worked with mentors before

– Have a base field that you can build upon

- Have demonstrated productivity



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Take the time to bolster weak areas before applying



STEP 9: UNCERTAINTY



http://journeytojoy-timberwolf123.blogspot.com/2010/04/uncertainty.html







ADDRESS UNCERTAINTY BEFORE YOU WRITE

- Most of us follow a path of happenstance
 - it's difficult to articulate how you got where you are
 - It's difficult to know what parts were/will be important
- Most applicants will not know exactly where they want to end up



Recognizing areas of uncertainty will help you to make critical decisions and increase the focus of your plan





IMPOSTER SYNDROME

Laursen, Lucas. <u>"No, You're</u> <u>Not an Impostor"</u>. *Science Careers*. 2008.



"It's perfectly okay to occasionally feel like a fraud when it comes to your career. I'm just not sure you need to say that on your resume."

Mike Shapiro, Washington Post







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COMMUNICATING SUCCESS

- Neither too pompous nor too humble
 - Own what you own
- Tell how your previous accomplishments will enable the success of this plan

Example: "Previous studies demonstrated X. Importantly, my observations indicate that additional factors are critical for this process."

- On the shoulders of giants... <u>but</u> you have also made significant contributions to the field
- Directly address the indicators of success we discussed earlier



STEP 10:

STOP TWEAKING AND SUBMIT YOUR APPLICATION









CHALLENGE AND OPPORTUNITY

- Overthinking
- Perfectionism
- Hesitation
- Uncertainty



It's a well-known fact that submitting your grant application improves your odds for award immeasurably

ACKNOWLEDGEMENT

STEPHANIE FREEL

DUKE OPSD LEADERSHIP AND STAFF



https://medschool.duke.edu/research/research-support-offices/office-physician-scientist-development/about-us





National Heart, Lung, and Blood Institute



National Institute of Allergy and

Infectious Diseases



Eunice Kennedy Shriver National Institute of Child Health and Human Development



Questions





