Career development (K award) grants
What are they, why should I apply, and how do I get funded?

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Disclosures

- The speakers have no relevant financial relationships to disclose.
- There will be no intended discussion of unapproved, experimental, investigatory, or off-label drug and/or device usage.
Learning objectives

1. Determine how pediatric hospitalists can become competitive applicants for career development (K award) grants and when they are best poised to write successful awards.

2. Understand components of a strong K award application

3. Identify key barriers and solutions for writing a successful K award application

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Faculty Introductions

Current position
When your K award was funded
Topic of your project
How it helped in your career

What is a K award?

Chris Bonafide
What is a K award?

• Federal grant from either:
  • National Institutes of Health
  • Agency for Healthcare Research and Quality

• Mentored Patient-Oriented Research Career Development Award
  • Purpose: support the career development of individuals with a clinical doctoral degree who have made a commitment to focus their research endeavors on patient-oriented research.

• In PHM/clinical research, usually refers to NIH K23 and AHRQ K08

Purpose and objectives of K awards

• Support an intensive mentored research career development experience comprised of didactic study and mentored research

• Salary and research support over a sustained period of “protected time”

• Encourage research-oriented clinicians to develop independent research skills and gain experience in advanced methods and experimental approaches needed to become independent investigators conducting patient-oriented research.

• Responsive to mission of AHRQ or NIH Institute/Center
Missions

• **AHRQ**: To produce evidence to make health care safer, higher quality, more accessible, equitable, and affordable, and to work to make sure that the evidence is understood and used.

• **NICHD**: To ensure that every person is born healthy and wanted, that women suffer no harmful effects from reproductive processes, and that all children have the chance to achieve their full potential for healthy and productive lives.

• **NHLBI**: To provide global leadership for a research, training, and education program to promote the prevention and treatment of heart, lung, and blood diseases and enhance the health of all individuals so that they can live longer and more fulfilling lives.

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K awards per year

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<th>Institute / Center</th>
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<tr>
<td>Agency for Healthcare Research and Quality (AHRQ)</td>
<td>55</td>
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<tr>
<td>National Cancer Institute (NCI)</td>
<td>387</td>
</tr>
<tr>
<td>National Heart, Lung, and Blood Institute (NHLBI)</td>
<td>512</td>
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<tr>
<td>National Institute of Allergy and Infectious Diseases (NIAID)</td>
<td>269</td>
</tr>
<tr>
<td>Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD)</td>
<td>181</td>
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<tr>
<td>National Institute on Drug Abuse (NIDA)</td>
<td>200</td>
</tr>
<tr>
<td>National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)</td>
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<tr>
<td>National Institute of Mental Health (NIMH)</td>
<td>307</td>
</tr>
<tr>
<td>National Institute of Neurological Disorders and Stroke (NINDS)</td>
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<tr>
<td>National Institute of Nursing Research (NINR)</td>
<td>24</td>
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<tr>
<td>National Library of Medicine (NLM)</td>
<td>12</td>
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What’s included?

• Pays the hospital 75% of your salary to buy 75% your time from clinical, administrative, and other responsibilities so you can do research and develop your research skills as proposed in your application
  • 3-5 years support
• Pays the hospital $25,000-$50,000 per year to be put in a career development/research fund for you to spend in ways that further your research mission (classes, research assistant, travel to meetings, etc)
• Pays the hospital “Facilities and Administrative” fees

Expectations of federal funders

• Awardees will launch independent research careers and become competitive for new research project grant (e.g., R01) funding.

• What’s in it for the American people?
  • NIH: Increase the pool of clinical researchers who can conduct patient-oriented studies, capitalizing on the discoveries of biomedical research and translating them to clinical settings.
  • AHRQ: help ensure that a diverse pool of highly trained health services researchers are available in adequate numbers and in appropriate research areas to address the mission and priorities of AHRQ.
Announcements

- **NIH K23:**
- **AHRQ K08:**

Think of the PRIS Network when planning a K

**Reach**
Over 800 pediatric hospitalists at 123 sites representing 43 states and 3 provinces.

**Mission**
Improve the health of and healthcare delivery to hospitalized children and their families.

**Vision**
PRIS will be the premier research network and continually define what best practice is and how it should be implemented. Clinicians will first turn to PRIS studies when confronted with decisions regarding hospitalized children. These studies will be informative, relevant and address real-world systems-based and clinical management decisions for hospitalized children with acute and chronic conditions. Ideal implementation of the results of comparative effectiveness and other patient-centered outcome studies will lead to better outcomes and value for hospitalized children and their families.
How to be ready to apply for a K award
Remember the Intent of a K award

- To help new investigators achieve independence

*What does this mean??*

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#1: The Candidate

NIH Criteria for Evaluation
- Potential for conducting research.
- Quality of research endeavors or publications to date.
- Adequacy of scientific background.
- Need for further research experience and training.
- Evidence of originality.
The Candidate: Career Development

Highlight Your Story

- Describe your interest and where you want to go
- Highlight your research success to date
- Identify critical gaps in your knowledge and skills
- Explain how additional training or mentored research experience in these areas will enable you to compete successfully for R01 funding.

BE SPECIFIC, GIVE EXAMPLES

#2: Mentorship Team

NIH Criteria for Evaluation

- Appropriateness of mentor’s research qualifications in the area of the application.
- Quality and extent of mentor’s role in providing guidance and advice to candidate.
- Previous experience in fostering the development of more junior researchers.
- History of productivity and support.
- Adequacy of support for the research project.
#3: Research Plan

1. The research plan is a *training vehicle*.
2. The research plan is a *means to achieve independence*.
3. Mentored K awards provide *limited funding*. 

PERSISTANCE
Specific Elements of the Application

Key dates and timelines

• 3 cycles each year in February, June, and October (the 12th of month)
  • Resubmissions due one month later (March, July, November)
  • To your grants office 1 week+ before that and near perfect 1-2 weeks before that
• For initial submission at least 4 months (probably 6) of at least 50% effort
• First step is drafting and re-drafting and circulating and re-circulating specific aims page
• Then can move forward with career development plan and research strategy
• Grant will be reviewed and scored ~4 months after submission
Review criteria

• Scored and strength/weaknesses noted on 5 sections:
  • Candidate
  • Career development plan/Career goal and objectives
  • Research plan
  • Mentor(s), co-mentor(s), consultant(s), collaborator(s)
  • Environment and institutional commitment to candidate


Major sections of the K award

• Candidate information and goals for career development: ~3-6
• Research strategy: ~6-9
• Specific aims: 1 page
• Plans and statements of mentor and co-mentor(s): 6 pages
• Letters of support from collaborators, contributors and consultants: 6 pages
• Description of institutional environment: 1 page
• Institutional commitment to candidate’s research career development (from Chair): 1 page

12 pages total
Specific aims

• 1 page document including:
  • Brief background building to the critical gap or unmet need
  • Specific research aims (3 is probably most common, could be 2-4)
  • Hypotheses for each specific (may be exceptions with qualitative data)
  • Expected outcomes upon completion of the grant

• Focus is on research aims but consider including how this research project fits within and advances your long-term goal(s) including becoming an independent investigator

• Largely same principles of all great spec aims pages:
  • Compelling narrative, clear description of gap, non-interdependent aims

Candidate section

Candidate’s background (~1 page):
  • Personal statement
  • Highlights training, publications, any awards and grants

• Compelling and logical narrative to how you arrived at this project and development plan

Career goals and objectives:
  • State long-term and short-term goal and introduce specific training goals to be detailed later

• Consider brief section on plan for R01 at end of award

To include specific training goals to be detailed later

• Figures can be quite valuable here
Candidate section, continued

Career development activities during award period
• Specific and clear goals
  • 3-4 is usually the right number
  • Consider calling out which mentors will support each goal (primary mentor is probably on each)
• List specific courses (with course numbers), seminars, and conferences
• Opportunity to describe mentors’ and collaborators’ accomplishments, roles, and conferences
• Tables may be helpful

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<tr>
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<th>Training</th>
<th>Courses</th>
<th>Experiential learning</th>
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<tbody>
<tr>
<td>Year 1</td>
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<td>Community-Based Participatory Research (BE-8065)</td>
<td>Experiential learning in pediatric cardiology, collaborative with Lennon</td>
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<td></td>
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<td>Quantitative and Qualitative Data Collection Methods for HSR (BE-7070)</td>
<td>Solutions for Patient Safety collaborative factorial design research with Walsh</td>
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<td></td>
<td>Design Thinking and Problem Solving Methods for Interdisciplinary Innovation (DSGN 1072)</td>
<td>Research Organization of Pediatric Study teams with Lannon</td>
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<td>University of North Carolina Summer Institute in Qualitative Research</td>
<td>PASS at the bedside study calls with Landrigan</td>
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<td>Research Methods 1: Etiology + Construction (DSGN 7041)</td>
<td>Research</td>
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<td>Research Methods 2: Etiology + Analysis (DSGN 7041)</td>
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<td>Dartmouth Summer Institute for Informed Patient Choice</td>
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<td>Leadership in Clinical and Translational Research (BE-9003)</td>
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<td>Successful Scientific Writing (BE-8070)</td>
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<td>NIH’s Annual Summer Institute on Design and Conduct of RCTs Involving Behavioral Interventions</td>
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<td>UCI Grant Writing Workshop</td>
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Research strategy

• Sections: same as other NIH/foundation grants
• Significance
• Innovation
• Approach (methods), includes
  • Preliminary studies
  • Approach organized by each research aim
    • Study design, subjects and sample size, data collection methods, analysis
    • Consider rationale section and anticipated problems & their solution
• Timeline (figure great here of course)
• Next steps and future directions
• May be riskier to be overly vs. under ambitious
Statements from mentor and co-mentors

- Incredibly important part of this application
- Needs to demonstrate:
  - Mentor knows you and your research quite well
  - Mentor is committed to support your work
  - Mentor has a clear and articulated plan to support you in early stage of award and ensure you develop independence in latter stage
- Candidate can (should?) offer to help with organization and drafting
- If mentorship team, letters should be complementary and describe how team will work together to give coordinated guidance

Other sections

- Letters of support from collaborators, contributors and consultants:
  - Should be specific and complementary
  - If mentors have limited qualitative research expertise, the qualitative methods expert should describe how they will work with and mentor
- Description of institutional environment:
  - Includes both general strengths of institution and specifics to career development (K clubs, Office of Faculty Development)
  - People at your institution have written many of these; talk with department grants office to see if folks have shared templates or if someone maintains a boilerplate
- Institutional commitment to candidate’s research career development (from Chair):
  - Reach out early and offer to assist with draft
  - Should include a commitment to support at least 75% your time
Letters of reference

- At least 3 and no more than 5 letters of reference are required
- Must be from people (ideally with broadly recognized and national expertise) that know your work but are not listed elsewhere in grant
- Discuss potential referees early with your mentor
- Reach out early (several months before deadline) with specific aims page from your grant and your CV
- These letters are submitted separately and are confidential to you so be careful about offering to draft letters

There are many other important parts of a K award that will benefit from revisions by you and your mentorship team. These are just the largest ones!

Questions
# Agenda for today

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