K Awards: The Career Development Plan

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Types of Mentored Career Development Awards

• There are a number of different mentored K awards that individuals with a research or health professional doctorate should consider.

• Most of these awards support individuals *after* they have completed training and are transitioning to a faculty position.

• Websites:
  • [https://researchtraining.nih.gov/programs/career-development](https://researchtraining.nih.gov/programs/career-development)
  • [http://grants.nih.gov/grants/new_investigators/QsandAs.htm#1596](http://grants.nih.gov/grants/new_investigators/QsandAs.htm#1596)
Key Features of Mentored K Awards

• 3 – 5 years in length
• Provide substantial salary support but limited research funding.
• Contain both a training plan and a research plan.
• Includes a team of mentors, co-mentors, advisors, etc.
• Goal: transition to research “independence”.

THE UNIVERSITY OF TENNESSEE
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Le Bonheur
Children's Hospital
<table>
<thead>
<tr>
<th>Program Policies and Notices</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td><strong>K01</strong>&lt;br&gt;Career Award Policy Issues</td>
<td>NIH: <a href="PA-14-044">Mentored Research Scientist Development Award (Parent K01)</a> (see <a href="#">NOT-OD-14-036</a>)&lt;br&gt;NCI: <a href="PAR-15-064">NCI Mentored Research Scientist Development Award to Promote Diversity (K01)</a>&lt;br&gt;NHLBI: <a href="RFA-HL-16-006">Mentored Career Development Award to Promote Faculty Diversity in Biomedical Research (K01)</a>&lt;br&gt;NIH/BD2K: <a href="RFA-HG-14-007">Mentored Career Development Award in Biomedical Big Data Science for Clinicians and Doctorally Prepared Scientists (K01)</a>&lt;br&gt;NIDDK: <a href="RFA-HG-14-007">NIDDK Mentored Research Scientist Development Award (K01)</a>&lt;br&gt;NHLBI: <a href="RFA-HL-16-006">NHLBI Career Development Award to Promote Faculty Diversity in Biomedical Research (K01)</a>&lt;br&gt;NLM: <a href="PAR-13-284">NLM Career Development Award in Biomedical Informatics (K01)</a>&lt;br&gt;NCI: <a href="PAR-15-064">NCI Mentored Research Scientist Development Award to Promote Diversity (K01)</a>&lt;br&gt;NINDS: <a href="PAR-12-152">NINDS Faculty Development Award to Promote Diversity in Neuroscience Research (K01)</a>&lt;br&gt;NLM: <a href="PAR-13-284">NLM Career Development Award in Biomedical Informatics (K01)</a>&lt;br&gt;FIC: <a href="PAR-13-072">International Research Scientist Development Award (IRSDA) (K01)</a></td>
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<tr>
<td><strong>K02</strong>&lt;br&gt;NIH: <a href="PA-14-045">Independent Scientist Award (Parent K02)</a> (see <a href="#">NOT-OD-14-036</a>)</td>
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<tr>
<td><strong>K05</strong>&lt;br&gt;None Currently Active</td>
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<tr>
<td><strong>K07</strong>&lt;br&gt;NIH: <a href="PA-14-046">Mentored Clinical Scientist Research Career Development Award (Parent K08)</a> (see <a href="#">NOT-OD-14-036</a>)&lt;br&gt;NCI: <a href="PAR-15-033">Cancer Prevention, Control, Behavioral Sciences, and Population Sciences Career Development Award (K07)</a>&lt;br&gt;NIA: <a href="PAR-15-078">NIA Academic Leadership Career Award (K07)</a></td>
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<td><strong>K08</strong>&lt;br&gt;NIH: <a href="PAR-15-060">Mentored Clinical Scientist Research Career Development Award to Promote Diversity (K08)</a>&lt;br&gt;The following Mentored Clinical Scientist Development Program Awards (K12) provide support to an institution for the development of independent clinical scientists:</td>
<td></td>
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<tr>
<td><strong>K12</strong>&lt;br&gt;NCI: <a href="PAR-13-201">Paul Calabresi Career Development Award for Clinical Oncology (K12)</a>&lt;br&gt;NEI: <a href="PAR-14-352">NEI Institutional Mentored Physician Scientist Award (K12)</a>&lt;br&gt;NIDA: <a href="PAR-13-163">NIDA Mentored Clinical Scientists Development Program Award in Drug Abuse and Addiction (K12)</a>&lt;br&gt;NIGMS: <a href="PAR-13-290">Institutional Research and Academic Career Development Awards (IRACDA) (K12)</a>&lt;br&gt;NINDS: <a href="PAR-13-362">Neurological Sciences Academic Development Award (K12)</a>&lt;br&gt;ORWH: <a href="RFA-OD-15-001">Building Interdisciplinary Research Careers in Women's Health (K12)</a></td>
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<td>Program Policies and Notices</td>
<td>Description</td>
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<tr>
<td>K18</td>
<td>Career Award Policy Issues</td>
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<tr>
<td>NIDCD:</td>
<td>NIDCD Research Career Enhancement Award for Established Investigators (K18) (PAR-13-186)</td>
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<tr>
<td>NIDCR:</td>
<td>Short-term Mentored Career Enhancement Award in Oral, Dental and Craniofacial Research for Mid-Career and Senior Investigators (K18) (PAR-14-039)</td>
</tr>
<tr>
<td>K18</td>
<td>The following Career Transition Awards provide support to an individual postdoctoral fellow in transition to a faculty position:</td>
</tr>
<tr>
<td>NCI:</td>
<td>The NCI Transition Career Development Award (K22) (PAR-15-056)</td>
</tr>
<tr>
<td>NCI:</td>
<td>NCI Transition Career Development Award to Promote Diversity (K22) (PAR-15-063)</td>
</tr>
<tr>
<td>NHLBI:</td>
<td>NHLBI Career Transition Award for Intramural Fellows (K22) (PAR-14-302)</td>
</tr>
<tr>
<td>NIAID:</td>
<td>NIAID Career Transition Award (K22) (PAR-14-341)</td>
</tr>
<tr>
<td>NIDCD:</td>
<td>NIDCD Research Career Transition Award for Nurturing Clinician-Investigators (K22) (PAR-14-088)</td>
</tr>
<tr>
<td>NIDCR:</td>
<td>NIDCR Dentist Scientist Career Transition Award for Intramural Investigators (K22) (PAR-15-044)</td>
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<tr>
<td>NIMH:</td>
<td>NIMH Career Transition Award for Tenure-Track and Tenured Intramural Investigators (K22) (PAR-14-330)</td>
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<tr>
<td>NINDS:</td>
<td>NINDS Advanced Postdoctoral Career Transition Award to Promote Diversity in Neuroscience Research (K22) (PAR-12-163)</td>
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<tr>
<td>NINDS:</td>
<td>Career Transition Award for NINDS Intramural Clinician-Scientists (K22) (PAR-14-282)</td>
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<tr>
<td>NIEHS:</td>
<td>Transition to Independent Environmental Health Research (TIEHR) Career Development Award (K22) (PA-12-188)</td>
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<tr>
<td>Special Instructions for Submitting K22 Applications from Unaffiliated Applicants using the SF424 (R&amp;R):</td>
<td><a href="http://grants.nih.gov/training/k22_special_instructions.htm">http://grants.nih.gov/training/k22_special_instructions.htm</a></td>
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<tr>
<td>K22</td>
<td>NIH: Mentored Patient-Oriented Research Career Development Award (Parent K23) (PA-14-049) (see NOT-OD-14-036)</td>
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<tr>
<td>K23</td>
<td>NIH: Mentored Patient-Oriented Research Career Development Award to Promote Diversity (K23) (PAR-15-062)</td>
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<tr>
<td>K24</td>
<td>NIH: Midcareer Investigator Award in Patient-Oriented Research (Parent K24) (PA-14-047) (see NOT-OD-14-036)</td>
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<tr>
<td>K25</td>
<td>NIH: Mentored Quantitative Research Development Award (Parent K25) (PA-14-048) (see NOT-OD-14-036)</td>
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<tr>
<td>K26</td>
<td>None Currently Active</td>
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<tr>
<td>K30</td>
<td>Clinical Research Curriculum Development</td>
</tr>
<tr>
<td>K99/R00</td>
<td>NIH: NIH Pathway to Independence Award (Parent K99/R00) (PA-15-083) (see NOT-OD-15-052)</td>
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<tr>
<td>NIDCR:</td>
<td>NIDCR Dentist Scientist Pathway to Independence Award (K99/R00) (PAR-14-057)</td>
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Types of Mentored Career Development Awards

• K01
  • Mentored Research Scientist Development Award: provides for an intensive, supervised career development experience in the biomedical, behavioral, or clinical sciences leading to research independence.
    • Some NIH institutes use this award for individuals who propose to train in a new field.
    • Other NIH institutes use this award to increase research workforce in particular types of research.
Types of Mentored Career Development Awards (cont’d)

• K22 (example for NIAID*)
  • Career Transition Award: Provides 2 years of funding, once the candidate (postdoctoral fellow) has attained a full-time faculty position (to be achieved within 12 months of the award).

*K22s differ widely across NIH Institutes
**Types of Mentored Career Development Awards (cont’d)**

- **K08**
  - Mentored Clinical Scientist Development Award: development of the independent clinical research scientist.

- **K12**
  - Mentored Clinical Scientist Development Program Award: support for an institution for the development of independent clinical scientists.
Types of Mentored Career Development Awards (cont’d)

• K23
  • Mentored Patient-Oriented Research Career Development Award: Development of the independent research scientist in a clinical arena.

• K25
  • Mentored Quantitative Research Development Award: To foster interdisciplinary collaboration in biomedical research by supporting career development experiences for scientists with quantitative and engineering backgrounds.
Newest Types of Mentored Career Development Awards

- K99/R00
  - NIH Pathway to Independence (PI) Award: Provides an opportunity for promising post-doctoral scientists to receive both mentored and independent research support from the same award.
  - Non-citizens can apply with a work VISA!
<table>
<thead>
<tr>
<th>Amount of Funding per year</th>
<th>K01</th>
<th>K08</th>
<th>K23</th>
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<tbody>
<tr>
<td>Salary Support</td>
<td>25%</td>
<td></td>
<td>$75K - $180K ($75K)</td>
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<tr>
<td>Success Rates</td>
<td>51%</td>
<td>50%</td>
<td>46%</td>
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<tr>
<td>---------------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>K01</td>
<td>35%</td>
<td>34%</td>
<td>39%</td>
</tr>
<tr>
<td>K02</td>
<td>53%</td>
<td>57%</td>
<td>71%</td>
</tr>
<tr>
<td>K07</td>
<td>49%</td>
<td>44%</td>
<td>43%</td>
</tr>
<tr>
<td>K08</td>
<td>55%</td>
<td>58%</td>
<td>52%</td>
</tr>
<tr>
<td>K12</td>
<td>100%</td>
<td>45%</td>
<td>36%</td>
</tr>
<tr>
<td>K22</td>
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<td>9%</td>
<td>19%</td>
</tr>
<tr>
<td>K23</td>
<td>100%</td>
<td>42%</td>
<td>49%</td>
</tr>
<tr>
<td>K24</td>
<td>44%</td>
<td>45%</td>
<td>45%</td>
</tr>
<tr>
<td>K25</td>
<td>42%</td>
<td>56%</td>
<td>52%</td>
</tr>
<tr>
<td>K99</td>
<td>100%</td>
<td>20%</td>
<td>23%</td>
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General Tips on Mentored K Awards

• Understand the *intent* of the mentored K award.
  • To help promising new investigators achieve research *independence* (i.e., to compete successfully for *R01 funding*).
  • Therefore, preparing for the R01 grant application you will submit at the end of the K award should be the *organizing principle* of the K grant application.
• Make a compelling argument why you need a K award
  • Explain exactly how additional training and mentored research experience will enable you to compete successfully for R01 funding.
  • Be specific: give concrete examples of areas where you need additional training or experience in order to conduct the proposed research or areas where you are deficient that are directly related to your research career goals.
• Develop a career development training plan that is *uniquely* suited to you.

  • Given your previous training and research experience, and your short- and long-term career goals, propose a mix of didactic training and “hands-on” research experience that make perfect sense for you (and only you).

  • Degree-granting programs (e.g., MPH, MAS) are appropriate for candidates with little or no previous formal training in research, but even these programs should be “customized” whenever possible.
Career Development Plan
Let’s look at the RFA
Candidate's Plan for Career Development/Training Activities During Award Period

• Per NIH guidelines (search Career Development Plan)
  • There are 3 places where you need to address the Career Development Plan
    1. Candidate Information, Candidate's Plan for Career Development/Training Activities During Award Period
    2. Environmental and Institutional Commitment to the Candidate, Institutional Commitment to the Candidate’s Research Career Development
    3. Research Plan, Research Strategy
Scoring: Career Development Plan/Career 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 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?
Scoring: Research Plan

• Are the proposed research question, design, and methodology of significant scientific and technical merit?

• 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?
So how do you fold it into the grant?
• Some disagreement if it should be included in your aims; however,…
• In the research plan, include some specific “challenges,” for which you need additional training and/or experience to accomplish successfully.
• These “deficits” in your training/experience then become the focus of your career development training plan.
• Summarize in 1-2 paragraphs at the end of your research plan
  • Challenges
  • Training to overcome them
Describe the specific areas where you have deficiencies (e.g., primary data collection, biostatistics, qualitative research methods).

Example: I have made progress in developing my clinical research skills, but there are three important areas where I require additional training, mentoring, and experience: (1) multi-disciplinary collaboration with clinical and basic scientists, (2) the design and implementation of prospective study design with involvement in the IPFnet, and (3) advanced study design and biostatistical methodology. In the following section, I present a detailed career development plan designed to enable me to acquire the additional training and mentored research experience I need to address these deficiencies and compete successfully for R01 funding, thereby achieving independence as a clinical investigator.
Career Development Plan I

• Suggested length: 1 - 2 pages.

• This is defined by your Career Goals!

• So what are your career goals?
  • “To be an independently-funded principal investigator studying the effect of physical activity on the outcomes of rheumatoid arthritis patients”
  • “To be an independently-funded principal investigator studying the translation of a recently discovered rheumatoid arthritis disease mechanism into therapeutics for rheumatoid arthritis patients”
  • “To be a principal investigator for industry sponsored clinical trials in rheumatoid arthritis”
  • “To be a site principal investigator for industry sponsored multi-centered clinical trials in rheumatoid arthritis”
Career Development Plan II

• Domains
  • Training to gain substantive knowledge/skills
    • Clinical condition: epidemiology, clinical presentation,
      diagnostic tools, treatment, prognosis, prevention
    • Relevant “exposures” and “outcomes”
    • Conceptual model(s)
  • Training to gain methodologic knowledge/skills
    • Measurement of relevant “exposures” and “outcomes”
    • Study design and analysis techniques
  • Training in the responsible conduct of research
  • Training in professional advancement
    • AAMC Faculty Professional Development Courses
Career Development Plan III

• Elements
  • Didactic component
    • Coursework (e.g. exercise physiology, outcomes measurement, epidemiology, biostatistics, clinical trials, clinical research ethics, writing for peer review)
    • Degree program (e.g. MS in Clinical Investigation, MS in Epidemiology/Biostatistics, MPH)
    • Workshops (e.g. annual Physical Activity and Public Health Course at Sea Pines, GA)

• Experiential Component
  • Research Project
  • Participation in multidisciplinary research group(s)
  • Participation in local and national conferences and events
Career Development Plan IV

• Expected measurable outcomes and time horizon
  • Coursework (degree) completed by....
  • Number and titles of abstracts submitted by..
  • Number and titles of papers submitted by..
  • First independent grant proposal submitted by....
Loan Repayment Program for Clinical Researchers
The purpose of this program is to recruit and retain highly qualified health professionals as clinical investigators.

Details | View Current Funding Opportunities

Loan Repayment Program for Clinical Researchers from Disadvantaged Backgrounds
The purpose of this program is to recruit and retain highly qualified health professionals from disadvantaged backgrounds in clinical research careers.

Details | View Current Funding Opportunities

Loan Repayment Program for Pediatric Research
The purpose of this program is to recruit and retain highly qualified health professionals as pediatric investigators.

Details | View Current Funding Opportunities

Loan Repayment Program for Contraception and Infertility Research
The purpose of this program is to recruit and retain highly qualified health and/or allied health professionals as contraception and/or infertility investigators.

Details | View Current Funding Opportunities

Loan Repayment Program for Health Disparities Research
The purpose of this program is the recruitment and retention of qualified health professionals to research careers that focus on minority health disparities or other health disparities.

Details | View Current Funding Opportunities