Pre & Postdoctoral Career Development: NIH Fellowships and Grants

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Workshop objective:

To provide guidance on applications for NIH pre- and postdoctoral career awards:
- Fellowships ("F") awards
- Career transition awards ("K")
- K99/R00 "Pathway to Independence"
NIH Grant/Career Timeline

Training:
- student
- post doc
- resident
- junior faculty
- senior faculty

Research:
- F30
- F31
- F32
- K Awards (career dev)
- R01, R03, R21
- P01

Selecting Your Career Development Track

NIH programs help to prepare the skilled, creative and diverse biomedical research workforce of tomorrow

https://researchtraining.nih.gov/career-path
NIH Fellowship (F) Awards

Provide support for pre- and postdoctoral studies in disciplines supported by NIH:

- Tuition: percentage varies by program
- Stipend: varies by years of experience
- Health insurance: individual and family
- Institutional allowance: research-related expenses
- Eligibility: US citizens or Permanent Residents

*Note: Not all Institutes support F tracks; check Program announcements!*

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NIH Fellowship (F) Awards

**F Award Tracks:**

- **F30:** *predoctoral* award for combined M.D./Ph.D. training
- **F31:** *predoctoral* award in health-related research (Ph.D., M.D./Ph.D., BSN/Ph.D., and other combinations)
- **F31:** *predoctoral award to promote diversity*
- **F32:** promising *postdoctoral* applicants with high potential to become independent investigators

**Application success rates:**

- **F31:** 30% - 35%
- **F32:** 25%
Excellent collection of successful NIH proposals...

www.niaid.nih.gov/grants-contracts/sample-applications

NIH Career Development Awards

**K Awards:**

- Support for career transition (~ 2% NIH budget)
- Wide range of types: currently 14 (K01-K99)
- For clinicians & basic scientists
- For junior & senior faculty
- Foster basic, clinical & patient-oriented research
- Provide partial funding for salaries
- Application success rates: 31%, but vary widely
K Awards

1. For **mentored** career development:
   - Basic scientists: K01
   - Clinicians: K08, K23, K24

2. For career **transition**:
   - Basic scientists: K02, K22
   - Pathway to Independence: K99/R00

Mentored career development:
- Development of junior faculty
- Dedicated mentor is essential for
  - Successful application
  - Successful outcome
- Basic scientists & clinicians
K Awards for basic scientists

**K01: Mentored Research Scientist Award**

"Career development in a new area of research..."

- Potential for productive independent research
- Mentor with extensive research experience
- 75% effort over 3-5 years
- Differences among Institutes

**K Awards for basic scientists**

**K02: Independent Scientist Award**

"Develop career of funded scientists..."

- Salary support for newly independent scientists
- Must have peer-reviewed research support
- 75% effort for 5 years
K99/R00 (Kangaroo) Award

• NIH Pathway to Independence (PI) Program
• **Goal:** To accelerate transition from a postdoctoral status to an independent scientist capable of receiving an R01 award
• Both clinicians and basic scientists are eligible
• Provides up to five years of support consisting of two phases:
  1. Initial 1-2 years of mentored support for highly promising postdoctoral research scientists (**K99 Phase**)
  2. Followed by up to 3 years of independent support contingent on securing an independent research position (**R00 Phase**)

Mentored (K99) Phase

• Provides 1-2 years mentored support for highly promising postdoctoral research scientists with terminal clinical or research doctorates
• Total cost per year up to $90,000
• Only US institutions may apply on behalf of candidates

U.S. citizens and non-U.S. citizens eligible
Independent Investigator (R00) Phase

- Transition from K99 to R00 (years 3-5) is to be continuous in time
- Start of R00 Phase requires a tenure-track, full time assistant professor position (or equivalent)
- Transition is subject to NIH review and evaluation of research plan
- Total support up to $250,000 per year
- Institution must demonstrate commitment to candidate (minimum 75% effort, space, equipment, etc.)
- PI expected to apply for independent grant support

NIH Career Transition Awards

Anatomy of an Application
Warning: Electronic Submission required!

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

Grants.Gov FAQ Page

http://era.nih.gov/ElectronicReceipt/faq_prepare_app.htm
Project Description (Abstract)

• PURPOSE: Describe succinctly every major aspect of proposed project except budget
• Length: 1/2 page (space provided)
• Should touch briefly on:
  - Background and significance of proposed research
  - Specific aims or hypothesis
  - Unique features of project
  - Methodology (action steps) to be used
  - Expected results
  - Evaluation methods

The most important part of your application! Must sell the reviewers on you, your career plan, and your proposed research

K Award Application: Section II

1. The Candidate:

• Candidate’s Background
  — Additional information not in biosketch

• Career Goals & Objectives
  — “Scientific Biography”
  — How training will fit career development

• Career Development/Training Activities
  — New skills & knowledge to be learned
  — Must include training in:

  Responsible Conduct in Research (RCR)
K Award Application: Section II

2. Statement(s) by Mentor and Sponsor(s):

- **Description of Training Program**
  - Include activities other than research
  - Sponsor’s experience as mentor
  - Concurrent responsibilities
  - Assurance of release from duties
  - Source of support for research project

- **List other collaborators, consultants**
  - Provide letters from each

K Award Application: Section II

3. Environment & Institutional Commitment:

- **Description of Institutional Environment**
  - Strong relevant research program
  - Availability of resources
  - Intellectual interactions

- **Institutional Commitment**
  - Adequate support from institution
  - Adequate resources (lab, office, etc.)
  - Commitment to candidate
  - Agreement must be signed by appropriate Institutional Official
K Award Application: Section II

4. Research Plan:
   • Statement of Hypothesis & Specific Aims
   • Background, Significance & Rationale
   • Preliminary Studies & Any Results
   • Research Design & Methods

Crafting a Successful Proposal

Provide clear, concise answers to key questions:

• Why is this study important?
• Are the experiments feasible?
• What will be accomplished?
• How will it change the field?
Crafting a Successful Proposal

Design a clear experimental plan:

- Devise a clearly stated, testable **hypothesis**, followed by 2 – 4 **specific aims** (research objectives)
- Keep rest of proposal **focused** on this structure
- Describe **outcomes**: What will you learn?
- Anticipate **pitfalls**: outline **alternatives**
- Provide a **timeline**: Limit experiments to what can be accomplished within the time period

K Award Application

Reference Letters:

- Required for K01, K08, K22, K23 and K99 (mentored) applications
- Three (3) letters from individuals other than those involved in the application, i.e., not sponsor/mentor or collaborators
- Should address candidate's competence & potential as an independent investigator
- Use NIH form letter to request letters of reference
Tips for Best Reference Letters

- Develop effective working relationships with potential referees
- Keep your referees updated on your progress
- Make your referees’ job easy, provide:
  - Current CV, reprints of papers
  - Draft of proposal

Remember: This is a personal and professional relationship that may last your entire career!

K Awards: Review Criteria

1. Candidate
2. Career development plan
3. Research plan
4. Training activities and schedule
5. Mentor
6. Environment & Institutional commitment
7. Budget
Excellent collection of K Award resources...

http://www.utsouthwestern.edu/research/translational-medicine/education/grant-writing/k-grants/

How will your proposal be reviewed?

New videos:

**NIH Tips for Applicants**
Discover how to make your application more competitive.

Transcripts

[www.youtube.com/watch?v=9cNRMaCG9Ho](http://www.youtube.com/watch?v=9cNRMaCG9Ho)

**NIH Peer Review Revealed**
A front-row seat to a peer review meeting.

Transcripts

[www.youtube.com/watch?v=pBDxh64dOA](http://www.youtube.com/watch?v=pBDxh64dOA)
Remember...

"The meek may inherit the earth, but not the grant dollars."
- J. Paul Getty