Getting an NIH Pre-Doc Fellowship (F30/F31)

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Outline

• Why write grants
• Intro to the NIH and types of NIH funding
• The F30/F31 main sections
• NIH submission and review process
• Resources for preparing your grant application
Why write grants

• Gives you time to update yourself on the literature – be an expert in the field

• Forces you to examine what is most important about your research – why anyone else should care and give you taxpayer (or foundation) money for it

• Forces you to communicate succinctly and logically

• Fosters new collaborations

• To get practice early on

• Establishes your credibility

• $
Lots of good related ideas

‡ Clear path forward
National Institutes of Health

• “NIH’s mission is to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce illness and disability.”

• $37.3 billion
  • 80% grants
  • 10% intramural research

• 300,000 researchers have NIH grant awards
# Common types of NIH funding

<table>
<thead>
<tr>
<th>Description / Notes</th>
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</thead>
<tbody>
<tr>
<td><strong>Graduate student</strong></td>
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<tr>
<td>F30 / F31 / F31 Diversity</td>
<td>Training, up to 5 years</td>
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<tr>
<td>T32</td>
<td>Training - Apply to institution (45 at UCSF)</td>
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<tr>
<td>R36</td>
<td>Dissertation award - Only NIDA, NIA, and AHRQ</td>
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<tr>
<td><strong>Postdoctoral fellow</strong></td>
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<tr>
<td>F32</td>
<td>Training, up to 3 years, T32 years subtracted</td>
</tr>
<tr>
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<tr>
<td>K99</td>
<td>Mentored research</td>
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<tr>
<td>LRP</td>
<td>Loan repayment (anytime after MD/DO/PhD degree)</td>
</tr>
<tr>
<td><strong>Faculty</strong></td>
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<tr>
<td>K01, K08, K23</td>
<td>Mentored career development</td>
</tr>
<tr>
<td>R00, R01, R03, R21, R34, U01</td>
<td>Investigator initiated research, cooperative research (U01)</td>
</tr>
<tr>
<td>P01 / P30</td>
<td>Center grants</td>
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F30 / F31 facts

https://researchtraining.nih.gov/programs/fellowships

• 3 types
  • F30 – dual degrees (e.g. MD/PhD)
  • F31 – PhDs
  • F31 Diversity – under-represented groups / persons with disabilities

• These are a type of NRSA (National Research Service Awards)

• Up to 5 years of support

• Provide stipends ($24K/year) and tuition (up to $16K/year), other $ ($4K/year)

• Good success rates in 2017 (report.nih.gov/success_rates):
  • F30: 42% (24 at UCSF)
  • F31: 26% (37 at UCSF)
Are you a good candidate for a F30 / F31?

• Your trajectory: An investment in YOU
  • You are expected to want to have a career as an NIH-funded scientist
    • Post-doc, faculty position doing independent research
    • For F30 – interested in a career as a physician-scientist or other clinician-scientist

• Do you have the capacity to get trained in your proposed area?
  • Your sponsors (mentors)
  • Your institution
  • You

• Do you have an interesting / important research idea, sound methodology, feasibility?
Your team for a F award

• Primary sponsor who is a senior investigator with a track-record of NIH funding (i.e. Associate or Full Professor)
  • Mentored others, preferably other F awardees
  • Should be able to mentor you in the content area and in career development
  • Include a co-sponsor if needed to fill a gap, e.g. if sponsor is very busy

• Include consultants who will complement the primary sponsor’s strengths.

• Every person included should have a unique role.

• Keep your team small (3-5 members).

• Reserve advisors outside your current work for references (writing confidential letters in support of your application)
## F30/F31 main components and page limits

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Applicant's Background and Goals for Fellowship Training (6 pages)

• Doctoral Dissertation and Research Experience
• Training Goals and Objectives
• Activities Planned Under Award
Applicant's Background and Goals for Fellowship Training

• Doctoral Dissertation and Research Experience
  • Summarize research experience in chronological order
  • Tell an academic story—Who are you as a researcher? How did you get here? Where do you want to go next?
  • If no research experience, describe other scientific experiences.
**Applicant's Background and Goals for Fellowship Training**

- **Training Goals and Objectives**
  - Describe your overall long-term training/career goals and how the fellowship will enable the attainment of these goals.
  - Have 2 or 3 distinct areas in which you need training that are outside of your PhD program. For example:
    - Advanced Statistical Methods for Causal Inference
    - Theoretical and Historical Frameworks for Social Determinants of Health and Substance Use
    - Social Policy and Evidence-Based Policy Processes
  - Identify the skills, theories, conceptual approaches, etc. to be learned or enhanced by the broader goals.
Your training goals and activities should be uniquely suited to you.

- Propose a mix of didactic training and “hands-on” research experience that make perfect sense for you (and only you), given your previous training and research experience and your career goals.

- Include classes, workshops, and conferences that are not a standard part of your program.

- You can propose to use training resources outside UCSF, but choose the best available.
• Activities Planned Under Award
  • Explicit list of training activities, including the research activities
  • Best to present this with a table (by each year)
    • Briefly describe each training activity (research, coursework, professional development, clinical activities) with bullet points
    • Organize by training goal or by format
  • Include percent time you will devote to each activity (or group of activities) which adds up to 100% per year.
    • Example (Year 1): 70% research; 10% teaching; 20% other training activities such as conferences, seminars, etc.
Specific Aims and Research Strategy

• You will likely spend the most time (around 50%) on these sections

• The research plan for a F grant is a *training vehicle*.  
  • The research plan should provide an opportunity to acquire new skills and should be well integrated with your training goals and activities.
  • Include explicit references to training goals within this section (e.g. methods that you will receive training on before doing).
  • The research plan should be viewed as a precursor for a subsequent F32 or K application.

• Research plan scope: Not too little, not too much  
  • Project should move the field forward (is it publishable?)  
  • Must be distinct from sponsor’s research, though leverage it.  
  • Plan must be feasible given the resources and time needed to accomplish the research
Specific Aims (1 page)

• What most reviewers read first
• May be the only page that reviewer reads
• First thing you work on but revise and re-revise
• Common to all grant applications, but for training grants includes reference to how the research will be a vehicle for your training goals
• Circulate drafts of this page to find out if the NIH is interested, to get early concept reviews, interest consultants, etc.
Specific Aims main components

• The overall problem (e.g. debilitating neurodegenerative disease)
• The more specific problem (e.g. poor diagnostics)
• What is known about how to solve the problem
• Why hasn’t it been solved – what is the knowledge gap?
• How you propose to solve (or take steps toward solving) the problem
• Aims – main things you will accomplish
  • Best if hypothesis driven
• Very briefly describe how you will accomplish the aims (e.g. study design, experiments)
• How this research will serve as a training vehicle to meet your goals
Specific Aims common structure

• Paragraph 1:
  • What is the problem (disease) – how many people does it affect, how debilitating, how costly, etc.? What is the aspect of the problem that needs a solution?
  • What is known about how to solve this problem?

• Paragraph 2:
  • What is the knowledge gap that has prevented this problem from being solved?
  • What is your solution to the knowledge gap?
  • What are your long-term goals towards solving the problem?

• Paragraph 3:
  • What are your short-term goals for this study – what will you do to begin to bridge the knowledge gap?
  • What type of study/studies will you do; what are your resources?
Specific Aims common structure, cont.

• The Specific Aims themselves:
  • 2-4 aims
  • The aims should break down of the proposed project in terms of knowledge to be gained.
  • Each aim should have a hypotheses if possible.
  • Include one sentence or phrase about the research design in each aim if the aims have different methodologies.

• Final paragraph:
  • Innovation and expected impact in the field or on health policy or outcomes.
  • What new research / further proposals this will lead to.
  • How conducting this research will meet your training goals.
Research Strategy **Significance** section

- Usually 1-2 pages
- Expand on the Specific Aims paragraphs 1+2
  - Review the literature that describes the health problem
  - Establish the gap in the literature / the need for this work
- Rigor of the prior research – strengths and weaknesses of prior literature (should point to the gap), including preliminary data on the topic (work by you or your sponsor)
- Expected research contribution: how the results of the proposed study (or the long-term goals) will change practice, health, etc.
- Note how the proposal is relevant to an NIH priority (if true)
- References are NOT included in the Research Strategy 6-page limit
Research Strategy Approach section

• Usually 3-4 pages
• Your preliminary data showing feasibility of the approaches
• The nuts and bolts of what you are going to do
  • Needs to have enough detail to convince reviewers of feasibility in your hands
  • Includes data collection, statistical power, statistical analyses, potential pitfalls, timeline, and future directions
• Step by step methods with tables and figures, etc. Methods should be very clear to reader (almost like a written protocol)
• Be sure to address any potential red flag, like human/animal safety (even if it is addressed elsewhere in the application)
• Include potential pitfalls and solutions, a timeline, and future directions
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# Suggested timeline

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<th>What</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-6 months</td>
<td>Discuss with supervisor/mentor to get advice on your readiness, general direction of the proposal, appropriate institutes</td>
</tr>
<tr>
<td>3-4 months</td>
<td>Draft specific aims page, review with mentor, revise!</td>
</tr>
<tr>
<td>2-3 months</td>
<td>Contact NIH program official(s) for interest in your content area, your specific eligibility</td>
</tr>
<tr>
<td></td>
<td>Confirm sponsor, identify and meet with co-sponsors and consultants, review aims with them</td>
</tr>
<tr>
<td></td>
<td>Inform Research Service Coordinator (RSC) that you will be submitting – get timeline</td>
</tr>
<tr>
<td>1-3 months</td>
<td>Draft research and training sections, request biosketches (need to adapt), letters of reference, letters of support (need to draft), sponsors’ section (may need to outline)</td>
</tr>
<tr>
<td>1 month</td>
<td>Get outside reviews, work with RSC on the remaining materials</td>
</tr>
<tr>
<td>2-3 days</td>
<td>Review all materials uploaded by RSC, RSC will do the final submission</td>
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# NIH submission, review, and award timelines

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<th>Series</th>
<th>Description</th>
<th>Cycle 1</th>
<th>Cycle 2</th>
<th>Cycle 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>F Series Fellowships</td>
<td><strong>SUBMISSION</strong>: Individual National Research Service Awards (Standard)</td>
<td>April 8</td>
<td>August 8</td>
<td>December 8</td>
</tr>
<tr>
<td><em>new, renewal, resubmission</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All <em>new, renewal, resubmission, revision</em></td>
<td><strong>SUBMISSION</strong>: AIDS and AIDS-Related Applications</td>
<td>May 7</td>
<td>September 7</td>
<td>January 7</td>
</tr>
<tr>
<td>All</td>
<td>Scientific Merit Review</td>
<td>June - July</td>
<td>October - November</td>
<td>February - March</td>
</tr>
<tr>
<td>All</td>
<td>Advisory Council Round</td>
<td>August or October</td>
<td>January</td>
<td>May</td>
</tr>
<tr>
<td>All</td>
<td><strong>Earliest Project Start Date</strong></td>
<td>September or December</td>
<td>April</td>
<td>July</td>
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F award NIH study section review criteria

• Fellowship applicant
• Sponsors, collaborators, and consultants
• Research training plan
• Training potential
• Institutional environment and commitment to training
NIH review process

• There are 20 Fellowship review panels
• 3-4 reviewers get your proposal several weeks before study section
• They are asked to write up reviews: summary, and strengths and weaknesses of each of the 5 review criteria
• They will give you a score for each of the 5 criteria, and an overall “impact” score
  • Impact scores are NOT the weighted average of the 5 criterion scores
  • 1=perfect, 9=worst
  • The score you get is multiplied by 10 (so 10 is a perfect score)
• If preliminary scores from the reviewers make the cut (usually top 50-60%), your proposal will be discussed.
• During the study section meeting, the reviewers will present your proposal, there is a discussion, and all members vote on the final score
• You will get the reviewers’ written comments, plus a one paragraph summary of the discussion (if discussed)
Grant writing resources

• Read others’ successful proposals, including their summary statements and revisions
  • CTSI K library accelerate.ucsf.edu/funding/k-library
  • Hahn F31 library or take my grant writing course (http://ticr.ucsf.edu/courses/schedule/grant_writing_workshop.html)
  • NIH reporter projectreporter.nih.gov -- search on F31 and other fields and contact the PI

• Book: The Grant Application Writer’s Workbook
  http://www.grantcentral.com/workbooks/national-institutes-of-health/ and in the library

• Course: EPI 258 - Grant Writing Workshop
  http://ticr.ucsf.edu/courses/schedule/grant_writing_workshop.html
  • Can access resources there, including a checklist of all the application items, with links to NIH instructions
  • Library of F31s (mostly clinical)
  • Class of 8 with feedback – usually room for 4-6 non Epi PhD students or postdocs, winter quarter
DO!

• Read others’ successful grant proposals. If possible read their review sheets as well.

• Make your proposal easy to read. Clear short headings, judicious use of bolding or underlining (only a few per page), space between paragraphs.

• Get reviews of your concept early on and then get a peer review when it is mostly done.
YOU CAN DO IT! I BELIEVE IN YOU !!!
Somebody called her a smarty pants and she thought, “why yes, yes I am. Thank you for noticing.”

Queenisms™
Thank you!

Please feel free to contact me:

Judy.Hahn@ucsf.edu