NIH FELLOWSHIP APPLICATIONS TOOLKIT

February 2018

Learning Objectives

- To learn about the NIH institutes that fund F awards
- To understand the eligibility criteria and purpose of Fellowship (F) awards
- To introduce some resources for information on F awards, in general
- To discuss grant writing tips and strategies for F applications

F Award Types

- Kirschstein National Research Service Awards (NRSA)
    - F30 for MD/PhD or other dual doctoral degree fellows
    - F31 predoctoral fellows
    - F32 postdoctoral fellows
- F31 current types:
    - Parent: https://grants.nih.gov/grants/guide/pa-files/PA-16-309.html
    - Parent diversity: https://grants.nih.gov/grants/guide/pa-files/PA-16-308.html
- F32 parent: https://grants.nih.gov/grants/guide/pa-files/PA-16-307.html

Purpose and Due Dates

- "enable promising predoctoral students to obtain individualized, mentored research training from outstanding faculty sponsors while conducting dissertation research in scientific health-related fields relevant to missions of participating NIH Institutes and Centers (ICs)….enhance individual's potential to develop into productive/independent research scientist "
- Due dates for:
    - Parent F proposals: 8th of April, August, and December
    - If AIDS-focused grant: 7th of May, September, and January

Apply for F With IC in Mind

- Identify IC most relevant to your research
  — Each IC has its own mission and research priorities
  — Some ICs define type of degree program
  — ICs may state what they won't fund
- Contact Program Officers about your research/training
  – List for Parent F31: http://grants.nih.gov/grants/guide/contacts/parent_F31.html
  – List for Diversity F31: http://grants.nih.gov/grants/guide/contacts/parent_F31_diversity.html
  – List for Parent F30: https://grants.nih.gov/grants/guide/contacts/PA-11-110_contacts.html
  – List for Parent F32: https://grants.nih.gov/grants/guide/contacts/parent_F32.html
- To Program Officer:
  — Provide them with draft of specific aims page
  — Coordinate a conference call if possible to discuss your plan
- Consider requests for assignment to specific IC/Scientific Review Group (SRG) through cover letter in application

Eligibility of Applicant for All Fs

- U.S. citizen or naturalized citizen or lawfully admitted for permanent residence
- Must be currently enrolled in PhD or equivalent research degree program or dual-degree program (MD, PhD for F30s)
- See other specific eligibility criteria in PA

Diversity Eligibility of Applicant

- Racial/ethnic groups shown to be underrepresented in biomedical research: African Americans, Hispanic Americans, American Indians, Alaska Natives, Native Hawaiians, and other Pacific Islanders
  - Other groups "that can be convincingly demonstrated to be underrepresented by the grantee institution"
- Individuals with physical/mental disabilities
- Individuals from disadvantaged backgrounds:
  - Individuals in low-income households
  - Individuals from rural or inner-city environments that have directly inhibited individual to develop and participate in a research career

Benefits of F31 in FY2017

- Supports between 5-6 years of research and training (6 for F30s)
- Stipend: $23,844/yr
- Tuition and fees: Can be up to $16,000/yr for individual awards and up to $21,000/yr for formally combined, dual-degree training (MD/PhD)
- Allowance (includes health insurance): $4,200

FY2017 F30 Success Rates

IC	# Submitted	# Awarded	Success Rate	Total Awarded
NCI	133	53	39.8%	$2,137,098
NEI	17	8	47.1%	$339,155
NHGRI	5	2	40.0%	$75,590
NHLBI	64	30	46.9%	$1,245,918
NIA	20	8	40.0%	$324,530
NIAAA	5	3	60.0%	$128,303
NIAID	82	16	19.5%	$631,704
NIAMS	6	3	50.0%	$138,333
NIBIB	1	0	0.0%	$0
NICHD	29	12	41.4%	$476,283
NIDA	15	5	33.3%	$189,350
NIDCD	4	2	50.0%	$66,469
NIDCR	13	9	69.2%	$390,738
NIDDK	58	20	34.5%	$793,736
NIEHS	2	1	50.0%	$33,967
NIGMS	13	5	38.5%	$211,750
NIMH	35	20	57.1%	$833,191
NINDS	38	14	36.8%	$578,398
Total	**545**	**214**	**39.3%**	**$8,721,391**

FY2017 F31 Success Rates

IC	# Submitted	# Awarded	Success Rate	Total Awarded
NCI	343	84	24.5%	$3,180,018
NEI	55	13	23.6%	$515,493
NHGRI	6	2	33.3%	$74,344
NHLBI	170	68	40.0%	$2,567,808
NIA	99	33	33.3%	$1,284,694
NIAAA	69	30	43.5%	$1,101,407
NIAID	303	39	12.9%	$1,444,210
NIAMS	63	12	19.0%	$479,396
NIBIB	25	3	12.0%	$120,160
NICHD	144	23	16.0%	$874,628
NIDA	103	21	20.4%	$831,234
NIDCD	87	37	42.5%	$1,390,865
NIDCR	36	23	63.9%	$877,115
NIDDK	162	43	26.5%	$1,653,871
NIEHS	53	12	22.6%	$473,467
NIGMS	325	59	18.2%	$2,262,512
NIMH	216	53	24.5%	$2,020,989
NIMHD***	30	5	16.7%	$202,982
NINDS	381	116	30.4%	$4,481,202
NINR	54	22	40.7%	$866,186
Total	**2,734**	**703**	**25.7%**	**$26,908,323**

FY2017 F32 Success Rates

IC	# Submitted	# Awarded	Success Rate	Total Awarded
NCI	213	53	24.9%	$3,078,123
NEI	61	14	23.0%	$803,736
NHGRI	4	1	25.0%	$56,694
NHLBI	169	54	32.0%	$3,282,930
NIA	73	21	28.8%	$1,219,100
NIAAA	22	9	40.9%	$526,015
NIAID	223	19	8.5%	$1,089,694
NIAMS	55	13	23.6%	$755,766
NIBIB	22	6	27.3%	$344,820
NICHD	100	31	31.0%	$1,849,569
NIDA	45	15	33.3%	$860,073
NIDCD	56	18	32.1%	$1,071,299
NIDCR	24	15	62.5%	$907,830
NIDDK	183	47	25.7%	$2,875,720
NIEHS	15	8	53.3%	$506,404
NIGMS	425	147	34.6%	$8,391,588
NIMH	142	30	21.1%	$1,752,865
NIMHD***	3	1	33.3%	$61,194
NINDS	200	64	32.0%	$3,666,903
NINR	6	4	66.7%	$233,615
Total	2,045	573	28.0%	$33,510,558

F Grant Writing Tips

Tips to Help Prepare Submission

- Ask grants administrator in your department to help keep track of all documents to upload
  - Meet with person early to know what documents you will need to prepare
  - Help you create eRA Commons account: https://era.nih.gov/reg_accounts/create_edit_accounts.cfm
- F grants are sponsored projects
  - Routed through Office Research Support (ORS) or Duke Medicine's Office of Research Administration (ORA) 5 business days before deadline
  - Departmental administrator can help you route
- See successful applications—Use NIH Reporter to find and contact PIs: https://projectreporter.nih.gov/reporter.cfm

Tips to Help Prepare Submission

- Read Program Announcement carefully

AND

- Refer to PHS Supplemental Fellowship Form in:
  https://grants.nih.gov/grants/how-to-apply-application-guide/forms-e/general-forms-e.pdf

F Main Sections

- Fellowship Applicant (AKA Applicant's Background and Goals for Fellowship Training)
- Research Training Plan
- Sponsor(s), Collaborator(s), and Consultant(s)
- Institutional Environment and Commitment to Training

Revised December 29, 2017

Source: https://grants.nih.gov/grants/how-to-apply-application-guide/forms-e/general-forms-e.pdf

Fellowship Applicant

- 6 pages
- Includes:
  - Doctoral Dissertation and Research Experience
  - Training Goals and Objectives
  - Activities Planned Under Award

Doctoral Dissertation/Research Experience

- Suggested length: up to 1 page
- Summarize your research experience past-current
- For each experience, include:
  - Purpose
  - Your role on project
  - Any methods and key findings
  - How findings disseminated (e.g., publication)
- Conclude with summary of doctoral dissertation
  - If not at this stage yet, provide some idea of what you plan to do
- If possible, try to link prior and doctoral research to overall long-term and short-term career goals
- Do not list academic courses

Training Goals and Objectives

- Suggested length: up to 1 page
- Identify training goals for the duration of fellowship
- Explain generally the skills, theories, conceptual approaches, etc., you will learn or enhance during award
- For each training goal, describe how the activities will help with your Research Plan
- Conclude with how your research and training will help you transition to next stage of career

Activities Planned Under Award

- For each training goal, describe activities involved in during award
  - Estimate % time to be devoted to each activity based on normal working day for full-time fellow as defined by Duke
  - % for activities should = 100% for each year
  - Have timeline detailing the proposed research training (and clinical training for F30)
- Activities planned should be individually tailored and well integrated with Research Plan. Examples:
  - Skills and techniques that you intend to learn
  - Coursework
  - Seminars/networking opps
  - Professional development
  - Apprenticing/shadowing
- Recommend using table to present training goals, activities per training goal, when these activities will be undertaken, and % time devoted to each activity

Research Training Plan

- Specific Aims (1 page)
- Research Strategy (6 pages)
- Respective Contributions (1 page)
- Selection of Sponsor and Institution (1 page)
- Training in Responsible Conduct of Research (RCR) (1 page)

Specific Aims

- 1 page; roughly 4 paragraphs
  - Introduction: State the problem and supporting literature, gaps in knowledge
  - Long-term goal, objective of F, and rationale
  - Specific aims to accomplish to meet F objective
  - Expected outcomes if aims achieved AND positive impact (think significance!) resulting from these outcomes

Reviewers may only read this page before scoring your grant

Research Strategy

- 6 pages includes tables, figures, images
- Preferably hypothesis-driven and suited to stage of applicant development
  - If have qualitative/exploratory research, best to combine with quantitative component—see: https://obssr-archive.od.nih.gov/mixed_methods_research/
- Sub-sections:
  - Significance (suggested length 1-1.5 pages)
  - Approach (remainder of 6-page limit)
  - Weave any preliminary data into Significance and Approach sections

Do not use appendices to supplement Research Strategy

Significance

- Explain importance of problem/critical barrier to progress in field that proposed project addresses
- Explain how proposed project will address gap in knowledge, technical capability, and/or clinical practice
- Describe how concepts, methods, technologies, treatments, services, or preventative interventions that drive this field will be changed if the proposed aims are achieved
- Discuss any preliminary studies (unpublished findings of your own or sponsors') pertinent to this application's significance

Approach Organization Options

Modular	Unitary
For each Aim: • Introduction/Overview describing aim's activities • Background • Preliminary Studies (or combine with Background) • Methods (use sub-sections from Unitary) • Expected Outcomes • Potential Problems & Alternative Approaches	Introduction/Overview describing aim's activities Background Preliminary Studies (or combine with Background) Methods—sub-sections to consider where relevant: • Study design • Study population/sample or Data sources • Study procedures/experiments • Study measurements • Data quality and management • Data analysis
	Expected Outcomes
	Potential Problems & Alternative Approaches
Timeline	Timeline
Future Directions	Future Directions
Be succinct: Significance and Approach need to meet 6-page limit	

Respective Contributions

- 1 page
- Describe collaborative process between you and your sponsor/co-sponsor in the development, review, and editing of application
    - Include respective roles in accomplishing proposed research/training

Selection of Sponsor/Institution

- 1 page
- Explain why sponsor/co-sponsor and institution were selected to accomplish research training goals
- If proposed research training to take place at site other than the sponsoring organization, provide explanation
- Add additional information if research training taking place at foreign institution

RCR Training

- 1 page
- Must be credible and implementable plan
- Follow the directions from NIH: https://oir.nih.gov/sourcebook/ethical-conduct/responsible-conduct-research-training
- On-line only is NOT sufficient for NIH
- Address the following components:
  - **Format** should be face-to-face lectures, coursework, and/or real-time discussion groups
  - **Subject Matter** should include conflict of interest, authorship, data management, human subjects and animal use, laboratory safety, research misconduct, research ethics
  - **Faculty participation** and faculty involvement in the instruction
  - **Duration**: Report total number of contact hours of instruction
  - **Instruction** must occur during each career stage and at least once every four years; describe any prior RCR received
- RCR instruction at Duke
  - Through Graduate School: https://gradschool.duke.edu/professional-development/programs/responsible-conduct-research
  - Through School of Medicine: https://medschool.duke.edu/education/degree-programs-and-admissions/office-biomedical-graduate-education/current-students/responsible-conduct-research-training
  - Through Office of Postdoctoral Services: https://ors.duke.edu/orsmanual/rcr-postdoctoral-researchers

Sponsor(s), Collaborator(s), and Consultant(s)

- Sponsor and Co-Sponsor Statements (6 pages)
- Letters of Support from Collaborators, Contributors, and Consultants (6 pages)

Sponsor(s)/Co-Sponsor(s) Statement

- If your sponsor is new PI to NIH, strongly consider having co-sponsor
- Statement is by individual sponsor or joint statement of sponsor/co-sponsor(s)
  - Applicants encouraged to identify > 1 sponsor, i.e., sponsor team, if this is deemed advantageous for providing expert advice in all aspects of the integrated research (and clinical for F30) training program
- Organization of Statement:
  - Research support available
  - Sponsor's/Co-sponsor's prior fellows/trainees
  - Training plan, environment, research facilities
  - Number of fellows/trainees to be supervised during Fellowship
  - Applicant's qualifications and potential for research career

Follow specific guidelines for this section in https://grants.nih.gov/grants/how-to-apply-application-guide/forms-e/general-forms-e.pdf starting on page G200

Sponsor(s)/Co-Sponsor(s) Statement

- Research Support Available
  - In table, list all current and pending research and research training support specifically available to applicant for this particular training experience
  - Roles of sponsor and co-sponsor should be in Research and Training Plan. If > 1 sponsor, statement should describe role of each sponsor and how they will communicate and coordinate their efforts to mentor applicant effectively

- Sponsor's/Co-Sponsor's Previous Fellows/Trainees
  - Provide total # of predoctoral and postdoctoral individuals previously sponsored.
  - For sponsor and co-sponsor each, select up to 5 prior fellows/trainees who are representative and, for those five, provide information on time spent in sponsor's research program, their present employing organizations and position titles or occupations

Sponsor(s)/Co-Sponsor(s) Statement

- Training Plan, Environment, Research Facilities
  - Describe the research (and clinical for F30) training plan sponsor/so-sponsor developed specifically for applicant—should address applicant's strengths and any gaps in needed skills and describe skills and techniques applicant will learn with sponsor/co-sponsor, including available resources to applicant
  - This information should be coordinated with information provided under Description of Institutional Environment and Commitment to Training
  - (F30) Discuss clinical experiences during training, including plan for smooth transition to clinical training component and how F30 will facilitate applicant's transition to residency program or other relevant postdoc program
- Number of Fellows/Trainees to be Supervised During Fellowship
  - Indicate whether pre- or postdoctoral
  - Include this information for both sponsor and co-sponsor
- Applicant's Qualifications and Potential for Research Career
  - Describe how applicant suited for F31 opportunity based on his/her academic record and research experience level, including how raining Plan and sponsor/co-sponsor expertise will facilitate applicant's transition to next stage of career

Institutional Environment/Commitment to Training

- 2 pages
- Describe resources and facilities available to applicant
  - Include names of key faculty members relevant to the candidate's proposed Research Training Plan
  - Indicate how necessary facilities and other resources will be made available for career enhancement as well Research Training Plan
  - Describe opportunities for intellectual interactions with other investigators, including courses offered, journal clubs, seminars, and presentations
- This section should be coordinated with information provided under Sponsor/Co-Sponsor Statements and Research Training Plan
- (F30) describe UNC-CH's dual-degree graduate program in which applicant enrolled (usually completed by Graduate Program Director)

Letters of Reference

- At least 3 required and no more than 5
  - See instructions for referees
- People who can comment on your potential for a research career
- Cannot be sponsor or co-sponsor(s)
- At least one person not in your department
- OK for dissertation advisor to be referee IF dissertation advisor NOT the sponsor/co-sponsor
- Make sure to include list of referees in cover letter of application so NIH aware of planned reference letter submissions
- Guidance on reference letters: http://grants.nih.gov/grants/how-to-apply-application-guide/submission-process/reference-letter.htm

Tips on Obtaining Good Reference Letters

- Provide recommenders:
  - Biosketch
  - Aims section, and Significance sub-sections
  - Brief summary of your career goals and objectives
- When requesting a letter, try to do so personally
- Be candid you need excellent recommendation
- Letters due by application receipt deadline date (bug recommender, if needed)

Tips on Obtaining Good Reference Letters

Content of letter should address your:

- Research ability/potential to accomplish F research and training goal; perseverance in pursuing goals
- Adequacy of scientific/technical background; familiarity with research literature
- Ability to organize scientific data
- Quality of research endeavors/publications, if applicable; evidence of originality
- Need for further research experience and training
- Potential to eventually become independent researcher

Biosketch

- Up to 5 pages
- Required for applicant (PI) and sponsor/co-sponsor(s)
- Biosketch template for F grants: WILL SEND TEMPLATE
- Tell sponsors/co-sponsors to send theirs with this format: https://grants.nih.gov/grants/how-to-apply-application-guide/forms-e/general/g.240-r&r-seniorkey-person-profile-(expanded)-form.htm#Instructions

F Review Criteria

- Fellowship Applicant
- Sponsors, Collaborators, Consultants
- Research Training Plan
- Training Potential
- Institutional Environment and Commitment to training

Each criterion scored 1-10:
  - 1-3 (high), 4-6 (medium), and 7-9 (low)

F Main Sections and Review Criteria

Review Criteria	Sections Aligning With Criterion
Fellowship Applicant	• Applicant's Background and Goals for Fellowship Training • Doctoral Dissertation and Research Experience • Training Goals and Objectives • Fellowship references (3 total) • Biosketch of applicant
Sponsors, Collaborators, Consultants	• Sponsor and Co-sponsor Statement • Selection of Sponsor and Institution • Respective Contributions • Biosketches of sponsor and co-sponsor(s)
Research Training Plan	• Specific Aims • Research Strategy
Training Potential	• Activities Planned Under This Award • Responsible Conduct of Research (RCR)
Institutional Environment and Commitment to Training	Same sections as for Sponsors, Collaborators, Consultants

Timing

- Allow at least 1-3 months to write the application
  - Longer if you don't have sponsor and co-sponsor(s) in place
- Identify departmental policies/procedures for submission
  - Work with your departmental grants administrator
- Remember, usually another 6-8 months for review and funding decisions so plan accordingly

What Happens After Submission?

- Center for Scientific Review (CSR) will assign completed applications to Scientific Review Groups (SRGs, AKA "study sections") that will perform review. Roster:
  http://public.csr.nih.gov/StudySections/Fellowship/Pages/default.aspx
- You may suggest specific SRG in your cover letter at time of submission
- CSR will assign each application to potential funding IC
  - Final determination for funding will be made by ICs participating in awarding F31s
- Check eRA Commons about 2 weeks from submission for review assignment and contact information
  - Only correspond if necessary with designated SRG contact, not SRG members

What Happens After Submission?

- Applications grouped for diversity and parent separately (for F31s)
- "Streamlining" allows for discussion of select applications (60% or greater) with rest not discussed (ND)
    - When < 10 applications in group, all will be discussed
- ND applications not assigned overall impact score but receive summary statements with written critiques and individual criterion scores from assigned reviewers
- For discussed applications, assigned SRG members review entire grant, while others review Specific Aims and group discussion follows; overall impact priority score given
- Discussed applicants meritorious for funding sent to IC for funding determination