

What You Need to Know About the NINDS Diversity Career Development K22 Award: Tips for Preparing Your Application

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- Listen to the webinar via your computer speakers or dial in using the telephone number provided on the screen.
- Type any questions into the Q&A box. Questions will be addressed after the presentation.
- The recording and webinar resource materials will be available in a few weeks.

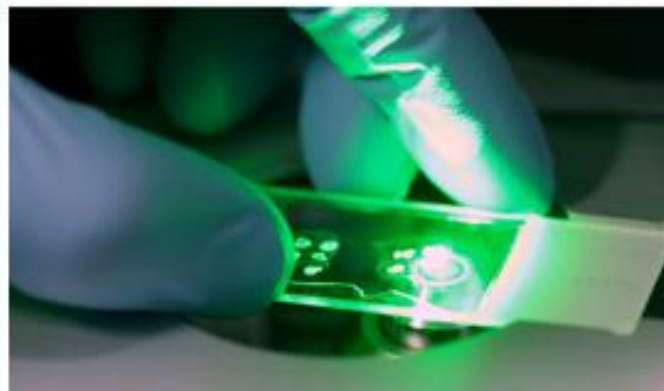


National Institute of
Neurological Disorders
and Stroke

What You Need to Know About the NINDS Diversity Career Development K22 Award

Tips for Preparing Your Application

December 13, 2016



Moderator



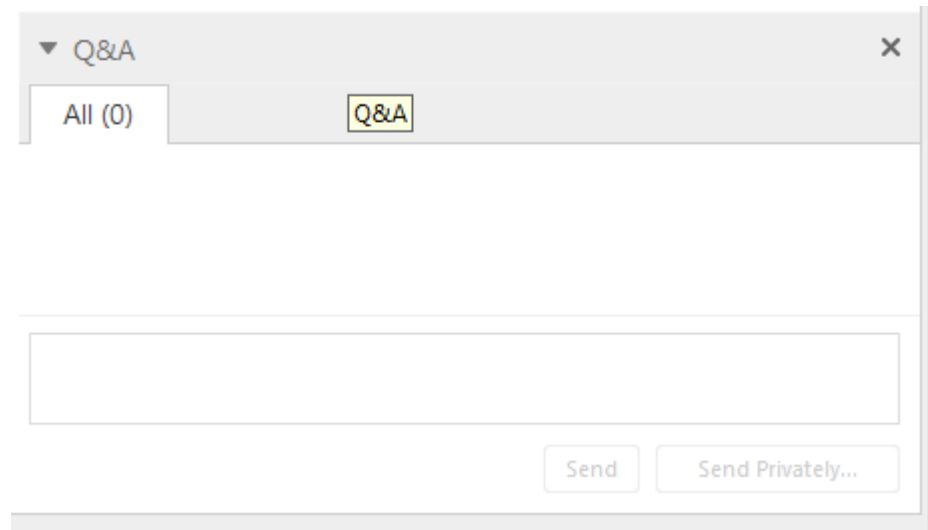
Lauren Ullrich, PhD
Health Program Specialist
NINDS

Contact Us

NINDSDiversityTraining@ninds.nih.gov

Questions

- You will be muted during the webinar
- Type your questions into the Q&A box
- Q&A will be at the end of the webinar



The screenshot shows a user interface for a Q&A session. At the top, there is a dropdown menu labeled "Q&A" with a downward arrow. Below it, there is a tab labeled "All (0)" and a button labeled "Q&A". The main area is a large, empty rectangular box for typing questions. At the bottom right, there are two buttons: "Send" and "Send Privately...".

Outline of the Webinar

- Introductions
- Overview of the K22 Mechanism
- Jacob Garza, PhD, K22 Awardee
- Michael Burton, PhD, K22 Awardee
- Martha Nance, MD, Career Award Reviewer
- Q&A

Speakers



Michelle Jones-London, PhD
Director of Diversity Training and Workforce Development
NINDS



Jacob Garza, PhD
Postdoctoral Fellow
Massachusetts General Hospital and Harvard Medical School



Michael Burton, PhD
Postdoctoral Scholar
University of Texas at Dallas and UT Southwestern Medical Center



Martha A. Nance, MD
Medical Director
Struthers Parkinson's Center



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Introduction to the K22 Mechanism

Michelle Jones-London

Director of Diversity Training and
Workforce Development
NINDS



Introduction to the NINDS Diversity K22

- **Goal:** *Retain those already trained in neuroscience and provide the resources and tools needed for this transition to independence.*

Increase research faculty diversity
in the nation

Committed mentor and institutional
commitment

Security of funding to produce research results
and papers to lead to a transition

Eligibility

1. **Individuals from nationally underrepresented in neuroscience research**
 - Groups that have been shown by the NSF to be underrepresented in health-related sciences on a national basis: *Blacks or African Americans, Hispanics or Latinos, American Indians or Alaska Natives, and Native Hawaiians and other Pacific Islanders.*
 - Individuals with disabilities, defined as those with a *physical or mental impairment that substantially limits one or more major life activities.*
2. Doctoral research degree (Ph.D., Ph.D./M.D. or equivalent)
3. Between **2 and 5 years of postdoctoral research experience** at the time of application
4. By the time of award, the individual must be a citizen or a non-citizen national of the United States or have been lawfully admitted for permanent residence
5. **MUST have NINDS mission relevance!**

	K22 (Advanced Postdoctoral)
Career stage eligibility	2- 5 years of postdoctoral experience
Phase I	A mentored phase (2-3 years) Salary up to \$50,000 Research costs up to \$25,000
Phase II	2-3 years of support and is contingent on obtaining a tenure-track or equivalent position Salary up to \$100,000 Research costs up to \$100,000

Award Details

- Support for the second phase is **not automatic** and is contingent upon obtaining a faculty position at an extramural institution with appropriate institutional support
- **Phase II** provides salary and research support, stability and resources for exploring innovative ideas, collecting preliminary data, and successfully attracting external research funds.

Main Application Parts

- Candidate
 - Background, career goals, training plan
- Research Plan
 - Proposes research plan for both phases of award
- Mentor, Co-Mentor, Consultant, Collaborators
 - Mentoring plan, letters of support
- Environmental and Institutional Commitment to the Candidate
 - Letter of support, description of environment
- You need the “Man (Woman), Fan, and Plan” and a strong research environment for your development

“The Man (Woman!)”: Candidate

Given the candidate's

1. *prior training record,*
2. *proposed career development plan,*
3. *referees' evaluations, &*
4. *research plan*

is it reasonable to expect that the candidate will be able to achieve an *independent, tenure-track or equivalent position* within 3 years of the start of this award?

Do the recommendations back this up???

“The Fan”: Mentorship

- Mentor has a strong track record in training and transitioning postdocs to independent careers
- Does the mentor have a comprehensive plan to support the proposed Phase I career development and research plans as well as the candidate's efforts to transition to independence?
- Each mentor and co-mentor(s) should clearly describe how they will coordinate mentoring of the candidate.

“The Plan”: Research Plan

- Like any other K – does the project have scientific merit?
- What aspects of the project will remain with the candidate as an independent investigator for the proposed transition to **Phase II**?
- Is the proposed research relevant to stated career objectives?
- Is the proposed Phase II research scientifically sound and a logical extension of the Phase I research?

Resources

- Tip Sheet: Putting Together Your Strongest K22 Application
- Slides from this webinar
- PAR-16-220
 - Read the entire FOA
 - Focus on the required elements and the review criteria
- Application Guide
 - [How to apply Application Guide](#)
 - Especially Form Instructions (Version D), Career Development (K) Instructions
- NINDS Program Directors
 - Scientific and Diversity staff



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The Applicant Perspective

Jacob Garza, PhD

Postdoctoral Fellow

Massachusetts General Hospital and
Harvard Medical School



Scientific Interest and Background

- My interest is to identify mechanisms underlying neurological disorders.
- Background:
 - Eating disorders and energy homeostasis
 - Psychiatric illness (depression, anxiety, etc.)
 - Stress
 - Animal models of psychiatric illness

Preparing My K22 Application

- Major Points to Consider
 - What do I want to learn and how will I go about learning this?
 - Human genetics of neurological disorders
 - Genome Engineering
 - Human iPSC models
 - Animal behavioral models (Autism)
 - Decide on a project that will help me fulfill my goals. I worked with my primary mentor to decide on specific goals. Is this project within the scope of the funding agency? I contacted my program officer and ended up changing some key aspects of my project.
 - Decide on who will be a mentor. How many mentors do I need?

Choosing a mentor(s)

- Who will be available for guidance on the key topics I would like to learn? I chose mentors that are all from my home institution.
- Is the mentor experienced with trainees? I chose mentors with a long track record of successful trainees.
- Which PIs have expertise with the techniques I want to learn? Human genetics, genome editing, iPSCs, Autism-like behaviors
- Should I choose as a mentor, advisor, or collaborator? Where are they located and are they available as much as I need them?

Choosing a mentor(s)

- Primary mentor – familiar with the core aspects of my project. I had been working with her for 2 years already as a post doc.
- Co-mentors – can assist with major components of my project and offer a new perspective. I chose two co-mentors based on their ability to help with aspects of my project that I didn't have experience with.
- Advisors – expertise in other components of my project. I chose advisors from neighboring institutions who can offer assistance and guidance but who weren't practical to include as a mentor.

Help from my mentor

- Once I've identified my mentors for this application, I work with them to plan the scientific approach and training plan.
 - What are the new findings in this field?
 - Talk to lab members to find answers to practical questions about experiments.
 - Attend lab meetings.
 - The training plan should be carefully planned and not appear too ambitious.

How will I complete my training?

- I've made an outline of my project and have my specific aims.
- What are the best approaches to accomplish this? The literature is constantly changing. I modeled my approach on projects from my co-mentors labs and incorporate new approaches or alternative approaches as needed.
- Preliminary data? What is appropriate? I used data that I had collected over the past two years as well as new data that I obtained specifically for this project.
- Work with my mentors to design experiments for the first and second phase of the project.

Preparing My Application Package

- Generate a checklist of items that I needed.
- Ask for my letters of recommendation.
 - Should be done as early as possible.
- Do I also need letters of support from advisors and collaborators? I needed letters from off-site advisors and contributors. Most asked for a preliminary draft of the letters to get started.
- What are the major deadlines? My institute requires all documents to be submitted one week before the NIH deadline.

Do I have enough time?

- I began to prepare my application package more than six months prior to submission.
- Do I have time to get letters?
- Do I have the proper preliminary data?
- Are my mentors available to help?
- Unforeseen events!! A blizzard hit the week before submission and many of the administrators were not available.

Post-submission period

- After I submitted my application, I continued to develop my plan as best as I could to prepare for resubmission. I constantly looked for flaws and tried to address how I might correct this on a future application.
- Once I received an initial evaluation, I stayed in contact with program officer to address any concerns prior to the council meeting.



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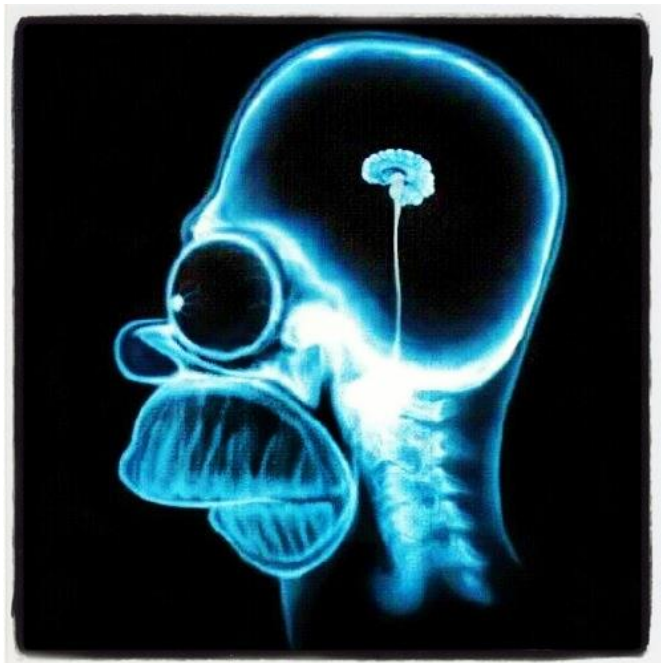
The Applicant Perspective

Michael Burton, PhD

Postdoctoral Scholar

University of Texas at Dallas and UT
Southwestern Medical Center





Training:
Psychoneuroimmunology
Endocrinology & Metabolism
Pain Neurobiology

From: Chicago, Illinois



University of Illinois



UT Southwestern Medical Center



University of Texas at Dallas



Transition.....self-assessment

Acquired techniques to build:

- Molecular Techniques
- Laser-Capture Microdissection
- Morris Water Maze (several)
- Depression Paradigms
- Nutrition (Luteolin)
- Exercise Metabolism
- Rat and Porcine models

To acquire...

- Develop genetic modeling
- Energy Expenditure
- Peripheral to central communication in diet
- Link between metabolism and pain processing
- Pain Development (Neuropathies)

Transition....identifying a mentor

Things needed from a mentor:

- Expert in interested techniques/field of study
- Supportive: both resource and moral
- Track record of great trainees
- Mentoring style in line with you
- Renowned in field – well connected
- Familiarity with appropriate agency/structure

Things to understand about a mentor:

- They can only get you so far
- You may need more than one with different expertise/styles

Game Plan

- Identifying a project that encompasses all the techniques you hope to acquire as an incoming postdoc (before you start)
- Understanding that the first project (or 3) will be strictly from your mentor (first 1-2 years), however all data is preliminary
- Plan on writing a NRSA immediately with pilot data (1st year)
- Meet often with those who can help you with writing (forever)
- Make your mentors aware of the critical deadlines
- Take critical/enriching courses (first 1-2 years)
- Decide which agency to apply...

Game Plan....cont.

- Contact program officer about K-award in 2nd year to begin to resolve any glaring holes or setbacks
- I made first contact with my program officer to ask if I needed to change home institute
- Get a better understanding of preparing a training plan with multiple mentors
- Also understanding how important it was to identify a project that would be independent from current mentor(s) and that could go with you

Training Plan...it is more important than you think!

- Once identified how I would approach mentorship (I decided to switch home institutions while keeping my previous mentor) I could make the training plan (the training plan took 4 months of back-and-forth between three people)
- A large part of the training plan was complementing research training in two world-class laboratories (here vs. there...I need them both!)
- Regularity of meetings with not only my mentors, but my postdoctoral development committee
- Include other outside opportunities to improve oral and written communication such as society meetings and research forums

The devil (and success) is in the details

- Utilizing preliminary data from previous projects to set a tone of feasibility (takes the longest to acquire 1-2 year)
- I created several versions of my specific aims page to help form the outline and hone my intellectual niche (took over a year and 6 drafts)
- Focus on great science, experimental design, and alternative approaches
- Everything takes more time than you think!



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The Reviewer Perspective

Martha A. Nance, MD

(Former) Chair, NINDS NST-1 (K Awards) Study
Section

Medical Director, Struthers Parkinson's Center and
HD Center of Excellence at Hennepin County
Medical Center

Adjunct Professor, Department of Neurology,
University of Minnesota



This is a big deal for you, and for us!

- We are not trying to excite young people to go into science
- This is a \$500-750K investment in the future
- We need to select winners and nudge them over the last hurdle(s) into independence
- All aspects of the K22 application are important!

Your biosketch is important!

- Make sure your biosketch is up to date
- Your biosketch should include as many publications as possible, but...
 - Don't include every abstract you presented that never made it to publication
 - We do distinguish somewhat between “high-impact” vs “low-impact” journals
 - We like to see that you have had a research idea and CARRIED IT THROUGH to publication
 - Finish up those secondary papers from your PhD or research fellowship time!
- It looks good if you have ever applied for/received any kind of funding

Career development plan is important!

- “Gap-based” career development
 - If there is an academic course or lab technique you need as you move into a slightly new area, take it!
 - Career development courses may be helpful at this point in your career (e.g. “lab management” or “grant writing” or “mentoring” courses)
- Timelines are very helpful to us (and you)
- There is a tension between too much and not enough career development

Career development is important!, continued

- It is helpful to have a statement about what you really want to do when you grow up (and how this award will get you there)
 - That statement should be supported by something that the mentor writes, hopefully in their OWN words, that alludes to the same path forward
- There should be some statement to the effect of, when all these great experiments work out, I will move on to part 2 as an independent investigator (exude optimism and enthusiasm!)
- These statements will likely be preceded by a fair amount of soul-searching

The mentor is important!

- The mentor should KNOW you
 - It really helps to have a very personal letter from the mentor, who sounds really excited about working with YOU, and seems to know and care about you
 - It helps if the mentor has solid prior mentoring experience
 - A very junior mentor may need to be bolstered by a more senior second mentor
 - The mentor's biosketch should be current and his personal statement should be appropriate to YOUR application
 - The mentor should have experience with federally (or equivalent) funded research
- For the K22, the mentor needs to describe how you will take this project with you when you move on in 3-5 years
 - Along those lines, it should be clear how you differ from your mentor
- The logistics of mentoring at a distance (eg different institution) needs to be described carefully
- Do NOT list every famous researcher from your institution as a mentor!

Environment and institutional commitment are important!

- Lab space, access to adequate numbers of patients, a solid research community, access to common core resources, etc.
- The chair's letter can really help or really hurt.
 - It had better be YOUR NAME in their letter
 - It helps if the chair also seems to know you personally
 - The chair should support the mentor in clearly stating that you will take some aspect of this project with you, and should refer to your eligibility for a faculty position at the end of Phase 1

The research plan is important!

- Should be written by YOU, not the mentor
 - What is YOUR novel idea, how are YOU going to pursue it, where will it lead?
- (at least) Two specific aims should be pretty solid (we sometimes let people get away with a slightly more aspirational third SA if the first two are good)
- We are happier if there is a good backup plan/discussion of pitfalls
 - Some applicants seem not to understand the intent of the “pitfalls” section
- Make sure there is an adequate description of the statistical analysis plan

The research plan is important!, continued

- Preliminary data/feasibility really helps
- Hypothesis-based research is generally preferred over secondary data analysis or shotgun types of research
- This project needs to LEAD YOU TO INDEPENDENCE, soon!
 - Not everyone can or should be independent
 - How does this project plus career development put you into a special niche, research area/skill, expertise that will move you and the research world forward?

Writing skills are important!

- You should write the grant, but someone else should read it before you send it in
 - We really hate typos and cut-and-paste mistakes
 - We think that if we have NO idea what you are talking about, that it is YOUR fault, not ours
 - If you do not speak or write English well, please have someone edit your writing (not write the grant for you, but EDIT it) so that the English makes sense
 - Timelines and graphics sometimes help

The review committee is color-blind

- Your eligibility for this award is determined administratively before the review
- You should have a brief paragraph about your eligibility for this award, but then move on

In conclusion....

- A good research idea
- A well-prepared and enthusiastic investigator
 - Who has good ideas and
 - A good sense of self (strengths, gaps, direction)
 - At a good institution
 - With a good mentor
 - Who completes a concise, well-written, and thorough application
- Has the best chance of success

Q&A



**Michelle Jones-
London, PhD**
Director of Diversity
Training and
Workforce
Development
NINDS



**Jacob Garza,
PhD**
Postdoctoral Fellow
Massachusetts
General Hospital
and Harvard
Medical School



**Michael Burton,
PhD**
Postdoctoral
Scholar
University of Texas
at Dallas and UT
Southwestern
Medical Center



**Martha A.
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Struthers
Parkinson's Center



Bill Benzing, PhD
Scientific Review
Officer, NST-1
NINDS

Diversity is not a problem.
It's the solution.

NINDS Office of Training, Career Development and Workforce Diversity

For diversity training questions, please contact: **Dr. Michelle Jones-London**,
Director of Diversity Training and Workforce Development