

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

- Thank you for joining the webinar. We will begin shortly.
- 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.

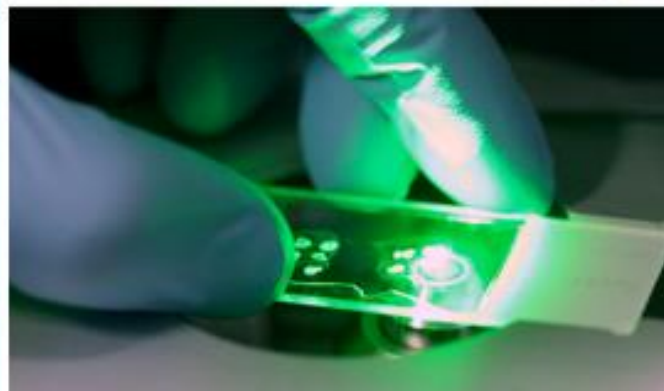


National Institute of  
Neurological Disorders  
and Stroke

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

## Tips for Preparing Your Application

December 13, 2016



# Moderator



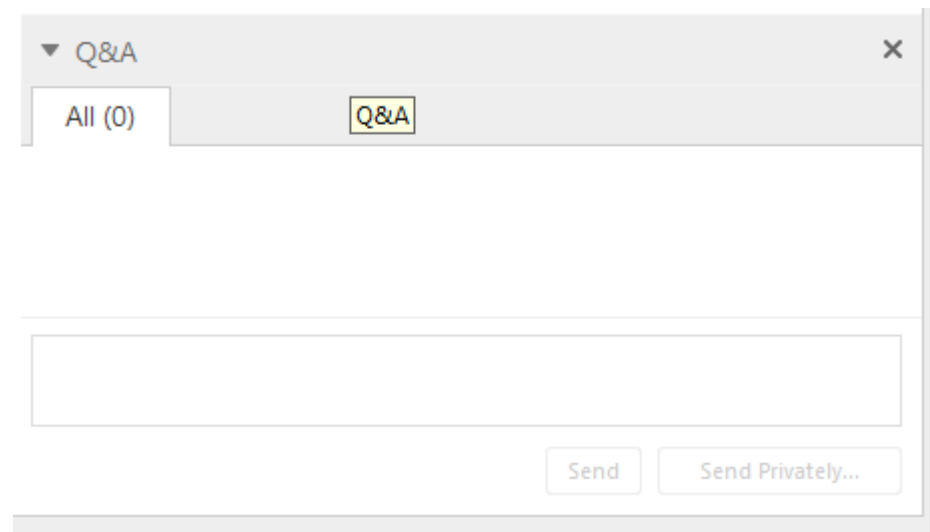
Lauren Ullrich, PhD  
Health Program Specialist  
NINDS

## Contact Us

[NINDSDiversityTraining@ninds.nih.gov](mailto: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 Q&A interface. At the top, there is a header with a dropdown arrow and the text "Q&A" and a close button "x". Below the header, there are two tabs: "All (0)" and "Q&A". The "Q&A" tab is selected. Below the tabs is a large text input field. At the bottom right of the input field, 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!**

	<b>K22 (Advanced Postdoctoral)</b>
<b>Career stage eligibility</b>	2- 5 years of postdoctoral experience
<b>Phase I</b>	A mentored phase (2-3 years) Salary up to \$50,000 Research costs up to \$25,000
<b>Phase II</b>	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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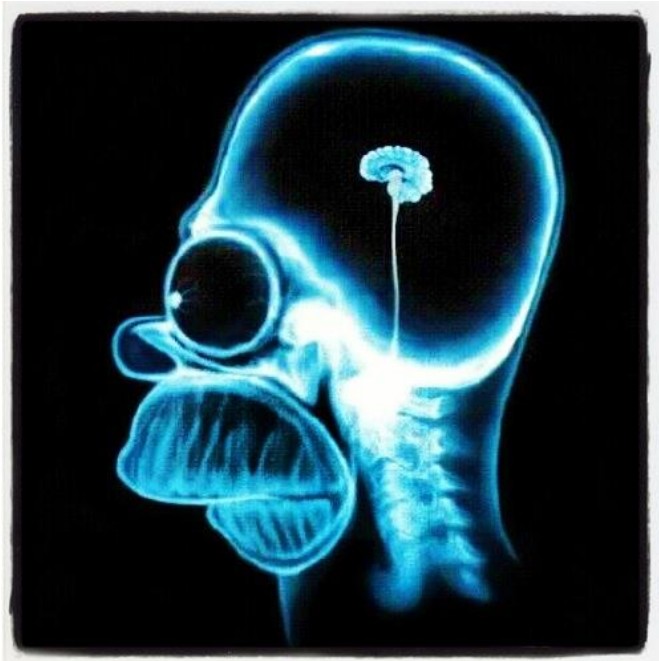
# The Applicant Perspective

**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 (1<sup>st</sup> 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 2<sup>nd</sup> 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  
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Martha A. Nance, MD  
Medical Director  
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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