

AGI Webinar

Wednesday, 6 May 2020 13:00 Eastern

Federal Grant Proposal Writing 101 for Students

NASA Postdoctoral Program

Administered by USRA

Presented by Jeff Berger
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Johnson Space Center, Houston



Purpose of the NASA Postdoctoral Program (NPP)



NPP provides an opportunity to:

- Contribute to NASA's missions in space science, earth science, aeronautics, space operations, exploration systems, and astrobiology
- Work with world-class NASA scientists at NASA Centers and facilities

NPP Fellows:

- Are placed in a NASA Center and have an advisor on-site
 - e.g., Johnson Space Center, Goddard Space Flight Center, Ames Research Center, Jet Propulsion Lab
- Have a one- to three-year appointment
- Receive a stipend starting at \$60k and annual \$10k travel budget

Details about the program: <https://npp.usra.edu/about/>

To apply to the NPP



Main eligibility requirements

- Ph.D. completed before start date
- U.S. citizenship, Lawful Permanent Resident (LPR) status, or the Exchange Visitor J-1 Visa (research scholar only)
- Relocate to NASA Center or program institute (financial assistance available)
- Other details <https://npp.usra.edu/apply/eligibility/>

Deadlines

- March 1, July 1 and November 1, annually
- You can only submit one application per cycle
- <https://npp.usra.edu/apply/information/>

Key components of the application



The application has many components
some of which may take weeks or months

- Identify a research opportunity and contact the NASA advisor
- Application form
- Letters of recommendation (three)
- Transcripts
- Research proposal (properly formatted; less than 15 pages)
- <https://npp.usra.edu/apply/information/>

Review process

- Evaluated by NASA Center advisor
- Evaluated by three external reviewers
 - Scientific merit, references, academic and research record
- Final evaluation by NASA Center

Advice on putting together a successful application



Contacting the NASA Center advisor for the research opportunity is essential

- This is the first and most important task
- Prospective NPPs will typically contact the advisor *at least 4-6 months in advance* of the deadline
- These initial discussions will establish or identify:
 - Are your research interests compatible with the advisor and with that NASA Center?
 - Is your research approach/style compatible with the advisor?
 - Would you be a better match with a different NASA advisor?
 - Can the advisor and NASA Center accommodate your research?
 - The advisor can give tips on writing a successful proposal

Advice on putting together a successful application



Writing the proposal – overarching considerations

- Ask yourself ‘how well do my research goals fit in with those of the NASA Center and advisor?’
 - Look at the research of previous NPP Fellows who worked with the advisor in the past
<https://npp.usra.edu/fellows/former-fellows/>
- Ask yourself ‘if I win this award, do I actually want to do this project?’
 - NPPs work on their project the first year, without teaching, writing other proposals, or other significant uses of time

Advice on putting together a successful application



Writing the proposal – guidelines

- Follow the formatting guidelines **exactly** according to the npp.usra.edu instructions – they tell you how to organize the proposal into sections and deviating from this will likely reduce the score and/or result in rejection
 1. statement of problem,
 2. background and relevance to previous work,
 3. general methodology, procedures to be followed, and timeline for completion of each step;
 4. explanation of new or unusual techniques,
 5. expected results and their significance and application
 6. literature citations, where appropriate.

Advice on putting together a successful application



Writing the proposal – simple but vital details

- Proposals are higher quality when the author has time to breathe – write in sections over weeks (or months)
- Target a finish time one week before the final deadline
- Ask a trusted colleague or mentor to review it
- Ask a friend to proofread it
- Request letters of recommendation as early as possible
- If you are making extensive changes the same day it is due, you might have a problem
- Don't be afraid to delay your submission to the next cycle, but check with the Center advisor first

Advice on putting together a successful application



Develop an appropriate scope

- Proposals are easier to review/evaluate if broken down into tasks
- These tasks must be reasonable for 2 years of work
- Include a 'mitigation strategy' – i.e., a discussion of what you will do if any component or task is not successful
 - E.g., what will you do if a task fails?
- The proposals I'm familiar with have 2-4 tasks. A simplified example:
 - Task 1: I will characterize element mobility in naturally altered volcanic samples from Mauna Kea
 - Task 2: I will conduct controlled laboratory alteration experiments on volcanic samples from Mauna Kea
 - Task 3: I will evaluate tasks 1 and 2 with respect to Mars rover observations on element mobility on the martian surface to constrain martian geochemical processes

Advice on putting together a successful application



Should you go out of your “comfort zone”?

- A postdoc is typically a logical outgrowth of your Ph.D., but how far away from your comfort zone should you go?
- If you stay in your comfort zone:
 - Pro: more likely to write a clear, well-supported proposal and demonstrate full competence
 - Con: the proposal might read as a small incremental addition to your dissertation with minimal innovation
- If you leave your comfort zone:
 - Pro: most NASA advisors encourage NPPs to expand skills and experiences, more innovation can be included, and you demonstrate confidence in your ability to broaden your research
 - Con: you will expose the gaps in your knowledge, and reviewers often focus on these in an overly negative way
 - You can probably mitigate this con by explaining your ‘deficiencies’ in the statement of purpose

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