

Effective Approaches to Increasing the Accessibility of Postdoctoral Opportunities through Remote Advising.

J.A. Grier¹, S.A Buxner¹, J.A Rathbun¹, and M. Richardson¹, ¹Planetary Science Institute, Tucson, Arizona, jgrier@psi.edu

Introduction: New approaches and strategies to hiring, employing, and engaging postdocs have arisen as a result of interactive platforms found on the internet (these include Twitter, Google Hangout, YouTube, Slack, Dropbox, Cloud, Zoom, Skype and many more.) Postdocs can now be mostly or even entirely remote, being interviewed, hired, engaged, and partnered with via applications and other tools that are inexpensive and readily available. Our investigations into this mode of remote mentoring/advising of postdocs has provided insight into the motivations, benefits, drawbacks and best practices for success for this endeavor. This critical employment mode can potentially address a variety of concerns in STEM careers including diversity, accessibility, reach, collaboration styles, etc.

Concerns to Address: Remote mentoring and employment options for early career scientists can address a wide variety of current concerns held by both PIs and prospective postdocs; as well as those held by institutions and broader society. [1]

1) Independent research institutes (nonprofit or otherwise) are more frequently expanding their base of active scientists by hiring people who do not live at a headquarters location. The Planetary Science Institute, for example, has already conducted a variety of remote programs where team-members were distributed around the country, and even the world. (i.e. the PSI SSERVI node, TREX.) PSI has developed both the need and the infrastructure to work with remote partners. Our experience points to ways that are both efficient and effective.

2) Family and work/life balance issues can be met with greater ease by using remote advising, either in whole or in part. Caring for elderly family members or finding childcare can make it difficult to have frequent face-to-face contact. Medical needs, unexpected travel, etc. can all be addressed with remote mentoring strategies. Family situations can mean that either the PI or postdoc cannot possibly relocate, and therefore must rely on a remote opportunity to stay in the field.

3) New options for mentoring postdocs become available through remote work, such as having multiple scientists from a variety of institutions co-advising.

4) Research partners with disabilities may be unable to physically change their location every day, or even for frequent conference attendance. This may be either/both the PI or postdoc. The remote advising situation allows for a more dynamic approach to important accommodations for disability.

5) As our world continues to be negatively impacted by human activities, remote advising/employment provides options to reduce one's carbon footprint, or to limit the use of resources.

Challenges and Solutions: Best practices for advising postdocs change little when applied to remote conditions. Good communication and well expressed expectations remain key. [2]

1) Conduct a weekly 'face-to-face' meeting on a platform like Skype or Zoom. Maintain a consistent meeting time and duration each week, even if science results are not being discussed. This time reinforces the sense of connection and community.

2) Provide the proper equipment so that the postdoc (and PI) can do all required science work, and have a means for diverse, adaptable, and stable communications. Such items should be included in grant budgets (computers, software, internet, etc.)

3) The postdoc needs an environment that promotes productivity; this may not be the home. Locations such as libraries, cafes, local universities or community colleges may be better choices.

4) Ensure that the postdoc has access to additional opportunities to expand their career, such as public outreach, teaching online classes, attending diversity conferences, obtaining professional development (like programming classes, etc.) and maintaining a support network of a similar demographic.

5) Develop strategies to deal with the unexpected. The PI should identify a back-up mentor in case of illness/sabbatical/travel.

6) Face time is still important. The PI and postdoc should meet at conferences at least twice a year.

Community Input: This rapidly expanding area of study and knowledge is ripe for community input and feedback. We seek conversations on how to continue to investigate this mode of employment in order to expand the cadre of diverse scientists in STEM, with an eye to increasing the range, scope, and quality of scientific investigations.

References: [1] Yeager, Ashley, 2018, Scientists are Opting for Remote Postdoc Positions, *The Scientist*. [2] Janes, Jasmine, 2017, The Lonesome Postdoc Part VI – Is working remotely really that great? *The Lonesome Postdoc*.

Acknowledgements: Some of the mentoring noted in this study was carried out under NASA CAN (NN17AD20A.)