

Additional Questions & Answers

Geoscience Research in National Parks: A Welcome and a How-to webinar, November 9, 2021

Is there any funded postdoc?

No, there are no standing funded NPS postdoctoral positions in geosciences.

Are there parallel challenges in parks and in research universities for how they manage interdisciplinarity?

For sure there are! Both Parks and Universities are set up with specific "Divisions" or "Departments" and it seems to depend on the specific people involved the extent to which interdisciplinary collaborations are fostered. But, I'd say there is wide and sometimes formal recognition that there are many benefits if the "siloes" can be bridged. My recommendation is for Parks, scientists, and students to try to develop collaborative networks to promote interdisciplinarity. The challenges can be met with good communication, creative ideas, (and tenacity) and it usually boils down to getting people together to discuss shared goals.

What types of careers are there for geoscientists (with PhDs) in the NPS?

There are about 10 central office 'geologists,' many with PhD's, who generally manage national programs such as Terrestrial Active Processes and Hazards, Coastal Active Processes and Hazards, Paleontology, and Cave and Karst. There are also supervisory geologists – branch and division – but little 'geology' and more admin is done. There are a few regional geologists who tend to manage all regional affairs on all geoscience topics. Finally, there are 2-3 dozen or so park-based geologists, some being generalists, and some having specialties, like coastal, geologic hazards, paleo, or cave & karst. Some have PhD's, and some not. There are also a number of hydrology and general physical science positions similar to all of those mentioned above, and many have a geologic angle to them. These positions are all mostly highly sought after. They get filled only very infrequently and with great competition.

Any new planning for paleo specimen repositories?

This is in discussion with staff at PEFO regarding either setting up the Utah Museum of Natural History or another institution to assist with fossil collections from NPS areas in Utah. There are fossil collections from several NPS areas in Utah that the Utah Geological Survey wants to find a home for.

For research that involves collecting fossil material, how is a repository for the materials determined?

This generally needs to be determined during the time a research and collecting permit is being developed. Some parks want the specimens to eventually be sent back to the park (YELL, GRCA), whereas some parks do not have the capacity to maintain collections in park and do not have a park curator - so an alternative scenario should be determined at the time the research permit is being submitted. NPS lost some of our park curators in Utah, and they have not been replaced.

Is there a procedure for being a designated repository for fossil specimens?

Yes - The NPS needs to refill a position once held that focused almost exclusively on developing repository agreements with museums & institutions, and without this position being filled it will continue to cause a backlog of specimens and out-of-date repository agreements.

UNM is an approved repository, but for our ongoing collaborative NSF-funded project on the Tonto Group, the present plan is that we will curate specimens at the Denver Museum of Nature and Science (one of the collaborating institutions) during the 3-5 years of the active research. After that, samples may find a permanent home at the Smithsonian Institute and/or Grand Canyon collections. The Eddie McKee and Ressor collections are mostly at the Smithsonian so combining the 1940s and 2020s collections has scientific merit. Denver Museum (James Hagadorn) is in the forefront of modern curation approaches and we want to ensure that the curation meets modern standards for electronic and physical access.

What is the best route to go in order to gain experience in research?

Start by doing it (research that is). 1) Read published literature about research that has been done on your interest and similar topics, 2) Through literature and web (e.g. IRMA), get to know who is actively researching your interest and similar topics (at which Parks), 3) Try to spot the needed next research steps such as: more or updated analyses, better maps, interdisciplinary approaches, etc. that build on past and ongoing research. 4) Write up a proposal draft (any level-- science class, undergrad, graduate level, post-doc, faculty, citizen science, etc) that shows how your ideas for new directions can build on what has been and is being done. 5) Start the research on a shoestring if needed and get communication going with potential collaborators as you seek support from Park science offices or other partners and funding agencies. 6) Stick with it

Is there a specific process/application form for conducting consumptive analysis?

In terms of analyses, even consumptive analyses that destroy all or most of the sample need to have a legacy. For example, the metadata will include: when and where collected, and goals of the analyses, as well as results. For our work in Grand Canyon, even if we intend to grind up and powder a rock, we curate a representative small sample, for example for some future time when a next researcher wants to try to apply a new technique. We outline this approach in our research and Collecting permit application.

I met a researcher working with coprolite material from the canyon is there a way to find her research?

For coprolites, use Google scholar and search for "Coprolites of grand canyon"-- these fossils generally are discussed along with other fossils of a given age. For the Quaternary, try to Google Jim Mead's publications on pack rat middens for example.