

13 April 2020

Mr. Richard Obermann
Democratic Chief of Staff
House Committee on Science, Space and
Technology
2321 Rayburn House Office Building
Washington, D.C. 20515

Mr. Josh Mathis
Republican Chief of Staff
House Committee on Science, Space and
Technology
2321 Rayburn House Office Building
Washington, D.C. 20515

Dear Mr. Obermann and Mathis:

On behalf of the American Geophysical Union (AGU) and its community of 110,000 Earth and space scientists advancing science for the benefit of humanity, I'd like to thank you for the opportunity to share ideas on how to mitigate the impact of COVID-19 on the scientific community.

AGU shares many of the same concerns and priorities as others in the scientific community and supports the responses to this request for information provided by the Coalition for National Science Funding (CNSF) and the Energy Sciences Coalition (ESC).

Near-Term Response to COVID Impacts on the larger Research Enterprise

Potential Losses to Scientific Workforce

AGU is deeply concerned about the impact this pandemic has had on the scientific workforce, specifically graduate students, Ph.D. students, post-docs and other early career scientists, and international students.¹ The uncertainty of when campuses might reopen has led to the postponement or revocation of acceptances into programs and academic as well as private sector jobs, especially in the energy and technology sectors. Such STEM workforce disruptions include hundreds of academic institutions that have implemented hiring freezes for planned research and teaching positions, recruitment pauses at major private-sector STEM employers such as Microsoft, and a steep decline in nationwide job opportunities for recent graduates.

Within the realm of AGU sciences, many researchers have experienced the cancellation and postponement of field programs, STEM internships, and other hands-on experiences that often

¹ <https://www.sciencemag.org/careers/2020/04/early-career-scientists-critical-career-junctures-brace-impact-covid-19>



enable and lead undergraduates to pursue careers in STEM fields. Additionally, international students and researchers are navigating visa issues, which is not only hampering our current scientific workforce but will also likely have consequences for our ability to attract top quality talent into the future.

To that end, AGU urges Congress to allocate stimulus funds for additional scientific salary support and to fund additional graduate student and postdoc fellowships, traineeships, and research assistantships, with an emphasis on graduate students who could not complete their degrees due to pandemic related impacts so they can complete their research and degrees.

Research and Facilities

The necessity of having to halt research at labs, research centers and other science facilities— and then restart it – will also be costly. We are concerned in particular about facilities or instrumentation that have been altered to aid in our nation’s response to the coronavirus, as well as the postponement or cancellation of research conducted at field sites, such as that needed to conduct research in oceanography or natural hazards assessments. Agencies and scientists will require flexibility and additional support to reschedule or re-apply for these programs. Many missions and initiatives will inevitably experience increased additional expenses caused by the delay in activity and it is unclear how those costs will be balanced with future and new priorities.

In addition, the impact to facilities will affect weather and other Earth science research that depends on high quality continuous data for modeling. For example, the National Weather Service normally relies on temperature and wind data collected by commercial flights. With many flights cancelled in response to the coronavirus, the NWS observed a 50% decline in the amount of data collected by U.S. aircrafts over the past month, a deficiency that has the potential to disrupt weather forecasting models if allowed to persist.

As such, we urge Congress to provide support for facilities and field sites, as well as the costs associated with halting and resuming work in labs, research centers, and other science facilities. Support is also needed to maintain the technical and operational staff that sustain our national scientific infrastructure and facilities.

“Shovel-Ready” Research Infrastructure

Investments in our scientific infrastructure will enable science that spurs innovation and economic growth, which will be critical in the aftermath of the pandemic. AGU reiterates the infrastructure proposals put forth by the CNSF, especially regarding the need for a one-time infusion of support for mid-scale infrastructure to address unmet needs. Additionally, AGU supports the ESC July 2019



Infrastructure Statement to Congress on how investments in our national labs could spur innovation and our economy.

Additionally, many of our science agencies have a maintenance backlog that could be addressed in future stimulus legislation.² For example, the US Geological Survey had a deferred maintenance backlog of \$148.3 million at the end of fiscal year 2019, and the National Park Service has a longstanding and growing backlog amounting to over \$11.9 billion in 2018 (the last year on record), affecting the ability of our nation's Earth scientists to study federal lands.³ The Department of Energy estimates deferred maintenance costs to be around \$741 million for the national laboratories alone, which significantly limits their ability to modernize and remain state-of-the-art facilities.

Long-term Economic Stimulus/Recovery

The pandemic associated with the novel coronavirus has not only caused but also highlighted weaknesses in our scientific enterprise. For example, to address cross-cutting societal issues, we need more initiatives and funding opportunities that incentivize scientists to think and work across disciplines and more flexibility in ways our scientific workforce can gain access to funding. As such, AGU urges Congress to provide additional funding for convergent research at the National Science Foundation and other agencies as appropriate. Convergence research is essential to solving many of society's biggest issues and is playing a large role in our current response to mitigate the impacts of COVID-19.

The current pandemic has also emphasized the need for community science and for communities to have access to reliable data and scientists who can advise them on their needs. Alongside the pandemic, communities across the U.S. continue to face wildfires, flooding, tornadoes, water and air quality issues. We urge Congress to provide strong support for community science programs and initiatives whereby communities and scientists work together to co-develop science-based solutions for local issues. Simultaneously, the current pandemic has demonstrated the need for the U.S. to invest heavily in supercomputing capabilities and increase access to supercomputing across federal agencies.

Additionally, AGU urges Congress to prioritize investments and policies that strengthen the scientific workforce. AGU is committed to the development of a diverse and inclusive 21st century scientific workforce. The geosciences have had an especially hard time recruiting underrepresented students, and AGU supports policies and funding aimed at diversifying and creating a pipeline for these groups into the geosciences. Furthermore, our scientific agencies

² <https://www.doi.gov/sites/doi.gov/files/uploads/fy2021-usgs-budget-justification.pdf>

³ <https://crsreports.congress.gov/product/pdf/IF/IF10987>



need to maintain a strong scientific pipeline in order to avoid being understaffed. The work being done by our federal science agencies to understand and mitigate the impact of flooding, wildfires, and hurricanes is essential to public safety; we cannot afford to not have the scientists to fill these critical positions.

AGU applauds Congress for providing immediate support and funding for our nation's science agencies in The Coronavirus Aid, Relief, and Economic Security (CARES) Act and we stand ready to work with the committee and Congress to further mitigate the impacts of COVID-19 and ensure the strength of our scientific enterprise. Thank you for your consideration.

Sincerely,

A handwritten signature in black ink that reads 'Lexi Shultz'. The signature is written in a cursive style with a large initial 'L' and 'S'.

Lexi Shultz
Vice President, Public Affairs
American Geophysical Union