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To: Rep. Alan S. Lowenthal, Chair, Subcommittee on Energy and Mineral Resources
From: Renee A. McPherson, University Director, South Central Climate Adaptation Science Center
Re: Response to Questions for the Record
Date: March 3, 2021

Please accept my thanks, and that of the eight other university directors of the regional Climate Adaptation Science Centers, for your and your subcommittee's time on the Climate Adaptation Science Centers Act. We greatly appreciate the hearing and the opportunity to answer your questions. Below are your two questions and my responses.

Dr. McPherson, during the hearing, we heard that universities involved in the CASC program can have high overhead rates. What are overhead rates at your university used for, and why are they important to running an efficient program?

Thank you for the question, as it is important to know what comprises Facilities and Administration (F&A) costs, also known as "overhead," and how they are negotiated to appreciate why these rates are higher at many universities than they are within the Federal government, especially in the U.S. Department of the Interior.

I generously borrow content from my former Masters degree advisor, Dr. Kelvin Droegemeier. Dr. Droegemeier was the Director of the Office of Science and Technology Policy during the Trump Administration and previously was the Vice President for Research at my institution, the University of Oklahoma. On October 24, 2017, Dr. Droegemeier testified to Congress at a hearing for the Appropriations Subcommittee on Labor, Health and Human Services, Education and Related Agencies, chaired by Rep. Tom Cole (R-OK), about The Role of Facilities and Administrative Costs in Supporting NIH-Funded Research. In his written testimony (https://docs.house.gov/meetings/AP/AP07/20171024/106525/HHRG-115-AP07-Wstate-DroegemeierK-20171024.pdf), Dr. Droegemeier conveyed these major points:

- The academic-government partnership was developed during World War II when President Roosevelt authorized Vannevar Bush, head of the U.S. Office of Scientific Research and Development, to conduct research and development with universities for the public good.
- At that time, Federal funding of university research applied a financial principle of no-gain/no-loss, and the model of indirect cost reimbursement (overhead) was initiated.
- F&A costs then were and still are real costs associated with the performance of research at academic institutions.
- Perhaps confusingly, a 50% overhead rate means that 33% of the project funds are F&A (aka overhead or indirect) costs and 67% are direct costs. (That is, direct costs are multiplied by the F&A rate to obtain the indirect costs, then both are added to obtain the total project budget.)

- The Federal government follows rigorous, transparent accounting principles and conducts audits to ensure that F&A rates are appropriate for the given institution.
- Different universities have different F&A rates for specific, documented reasons.
- Although F&A rates have increased over time, a key reason has been the dramatic increase of administrative burden to conduct research imposed by the Federal government.
- Since 1991, the administrative portion of the F&A rate has been capped by the Federal government at 26%, even though the administrative burden has increased. **As a result, F&A rates already are lower than they should be based upon the accounting data collected and on the original vision of no-gain/no-loss in Federal-academic partnerships.**
- In addition, universities have invested in research and development to the tune of about a quarter of their institution's R&D ($16.8 billion for R&D in FY15).
- Caps on F&A cost recovery are a form of mandatory cost sharing.
- No studies indicate that current F&A rates are inappropriate.
- Importantly, Droegemeier stated: "A significant cap on F&A funding would preclude participation in research by some institutions which do not possess sufficient resources to make up for the loss in F&A, and greatly constrain the degree of participation by others. **Consequently, a larger amount of research would be performed by the currently well-funded and well-resourced institutions**."

That last point is a critical one for universities in America's Heartland and for minority-serving institutions, as they generally do not have the financial resources for what essentially becomes a mandatory cost share.

As noted above, F&A costs are real costs associated with the performance of research at our universities. According to the Council on Governmental Relations in its 2019 report entitled "Excellence in Research: The Funding Model, F&A Reimbursement, and Why the System Works" (https://www.cogr.edu/sites/default/files/ExcellenceInResearch4_12_19_0.pdf), F&A costs include: "the maintenance of sophisticated, high-tech labs specifically designed for cutting-edge research, utilities such as electricity and heat, telecommunications, hazardous waste disposal, and the infrastructure necessary to comply with various federal, state, and local rules and regulations." In particular, research across the network of Climate Adaptation Science Centers requires supercomputers or high-end workstations with sophisticated software, indoor and outdoor laboratories or experiment stations, data management infrastructure and storage, and the physical space in which to conduct research. These facilities require dedicated staff to maintain equipment and specialized mechanical, electrical, or network infrastructure. Additionally, the distributed nature of CASC research requires an oversized university commitment to process and administer grants and ensure that funding reaches partner institutions in a timely manner. Universities, through their Vice Presidents for Research, also redirect some of the F&A to fund research and administrative support for the CASCs.

It is no surprise that the R&D infrastructure investment at U.S. universities is the envy of the world. As a result of Federal-academic partnerships, the U.S. leads the world in economic development in the private sector and trains the next generation of scientists. By continuing the no-gain/no-loss model with the Climate Adaptation Science Centers, the Federal government can ensure that actionable science is conducted and distributed to natural and cultural resource managers across all regions.

Dr. McPherson, could you clarify what factors are currently limiting CASCs ability to fulfill its mission? What factors are limiting the capacity of the National and Regional CASCs? What is limiting their growth?

Thank you for your focus on minimizing our administrative burdens. The CASCs have tremendous scientific capacity through the USGS, university host, and consortium institutions. Without the clear structure, fiscal mechanisms, oversight, and vision associated with authorization, however, the CASCs will continue to have to maneuver through changing requirements from different leaders in Washington DC rather than focus on addressing the needs of our partners and stakeholders at the local and regional levels. Besides a lack of authorization, the other main factors that currently limit the full implementation of CASC scientific capacity are: (1) insufficient scientific and support staff at the USGS and (2) funding levels that are far below those required to meet current needs of our partners and stakeholders.

In particular, too few administrative staff members in the USGS Office of Acquisitions & Grants (OAG) has limited the timely funding of CASC projects. This insufficient staffing hampers the ability of the USGS to garner final approval for grant-funded projects and to convey funds in a timely manner. Funding delays are particularly problematic for university partners, who make student hiring decisions based on an expectation that grants will arrive by the proposed start date. Delays result in an inability to recruit high-quality students, especially students of color, because funding is not available when graduate student offers are made. Delays also undermine trust relationships with Tribes, other non-federal partners, and natural and cultural resource managers. These trust relationships take months to years to develop.

Insufficient scientific staffing of the regional CASCs has limited the capacity of the centers to support existing science and develop strategic visioning for science needs. Delays are due to tardiness of USGS Human Resources in granting approval to create and post needed new or replacement positions. Delays also result from inappropriately low General Schedule (GS) pay grading of USGS regional leadership personnel, such as Director and Deputy Director, resulting in lengthy staff vacancies. Insufficient staffing in the USGS leads to increased stress on university staff (who must take on duties not identified in the host agreement), inability to start new mission-critical initiatives, and even a weakening of relationships with stakeholders. Overall, the lack of sufficient USGS staffing affects both morale and the credibility of the entire enterprise.

Finally, the current funding level of the CASCs is insufficient for supporting the depth and breadth of stakeholder needs for climate adaptation science. Too few USGS scientists are on staff to be “in the trenches” with stakeholders. Too few consortia scientists are available to lead stakeholder-driven research or fill knowledge gaps in USGS-led research teams. CASC-supported scientists are constantly hearing about new science needs, knowledge dissemination needs, and training needs, but they cannot keep up with demand. Additionally, there are growing climate adaptation science needs in populations and ecoregions that are underserved by the CASCs. New directions include engaging and supporting natural and cultural resource managers in urban environments and addressing climate adaptation needs for fish, wildlife, and ecosystems in underserved communities. FY21 funding levels do not meet the needs of managers. The funding levels proposed in the FY22 budget and in the House authorization bill are aligned with current needs and stakeholder-defined priorities.