On Thursday evening, Congress passed and President Biden signed into law a continuing resolution (CR) that averted a government shutdown and will maintain fiscal year (FY) 2021 spending levels until December 3. The CR will give Congress more time to finalize the FY 2022 appropriations process. The House is also planning to vote on the bipartisan infrastructure package today, however progressive Democrats plan to vote against the measure until the Senate passes a reconciliation package, which will likely lead to a very long floor vote. At this point, it is unlikely that the reconciliation package will reach the $3.5 trillion price tag Democrats had hoped for, but health care, child care and paid leave, and climate change still remain some of the highest priorities.

The University of Minnesota Washington Update provides intelligence and analysis on recent federal activities. Faculty visiting Washington, D.C. are encouraged to contact Sarah Neimeyer, Director of Government Relations, at neimeyer@umn.edu. Contact Christina Laridaen, Lewis-Burke Associates LLC, at christina@lewis-burke.com with any questions or comments related to the Update’s content.

Congressional and Administration Updates

Defense Policy Update: House Passes, Senate Releases FY 2022 NDAA

Over the past three months, Congress made headway on the FY 2022 National Defense Authorization Act (NDAA) process, albeit delayed in timing compared to recent years. The NDAA is an annual bipartisan bill that authorizes programs and sets policies pertaining to the Department of Defense (DOD) and U.S. national security. The House passed its version of the bill on September 23, whereas the Senate is not planning to debate the bill until October 18 and only recently released a public version of the bill the Senate Armed Services Committee (SASC) approved through a closed markup in July.
Both House and Senate versions of the bill would authorize funding increases for defense science and technology (S&T) programs, including basic research (6.1), applied research (6.2), and advanced technology development (6.3). Additionally, both versions would restore and protect funding for the Minerva Research Initiative, DOD’s premier social science program, recommending $10 million and $22.5 million in the House and Senate bills, respectively. While the House version does not include an authorization amount for the Defense Established Program to Stimulate Competitive Research (DEPSCoR), which augments basic research awards to increase research capacity in eligible states and territories, SASC would authorize a $10 million increase for the program. Both bills would also provide significant investments in climate resilience, cybersecurity, and space research and development (R&D), as well as increased funding for specific R&D efforts like large-scale quantum computing, microelectronics, undersea vehicle research, and polar research.

Bucking the Biden Administration

Both the House and Senate NDAAs would reject the Biden Administration’s $715 billion proposal of flat funding for DOD. The House version would authorize a defense budget of approximately $739.5 billion, $24 billion above the President’s budget request. SASC would increase defense spending to over $740 billion, which is approximately $25 billion above the President’s budget request and $1 billion more than passed in the FY 2022 House NDAA. Though the Senate has not passed its version of the NDAA, it is expected that an increased top-line for DOD will still receive bipartisan support during final negotiations. Despite deviating from the Administration on overall defense funding, both chambers would not authorize funding for Overseas Contingency Operations (OCO) in FY 2022, in alignment with the President’s budget request. OCO, often referred to as the Department’s slush fund, provides additional funding for emergencies, like the Iraq and Afghanistan wars that are exempt from discretionary spending limits.

The funding boost for DOD puts the House and Senate at odds with the Administration and perturbs more progressive Democrats, who are eager to either maintain or further slash defense spending. During the House process, Republicans justified the budget increase by pointing out that last year’s NDAA did not consider inflation, suggesting that the budget should increase by 3 to 5 percent annually to keep up with inflation. Additionally, House Armed Services Committee (HASC) Vice Chair Elaine Luria (D-VA), one of over a dozen House Democrats who supported the increase, cited that the boost is necessary to compete with China, an ongoing bipartisan concern in Congress.

A Complicated Future

The Senate still needs to debate and pass its version of the NDAA, which was released by SASC on September 22 and initially approved through a closed markup in July. Once the Senate approves its bill, the House and Senate must negotiate their policy differences in a final agreement. While the NDAA authorizes funding levels for defense programs, the defense appropriations bill ultimately decides funding levels. The Senate has not yet released its FY 2022 defense appropriations bill, but the House Appropriations Committee approved its defense appropriations bill in July, which would allocate $706 billion for the Department. This topline is now inconsistent with the with the House NDAA but in step with the Biden Administration.

Furthermore, given the increased likelihood of a continuing resolution (CR) until December to give Congress more time to pass and negotiate FY 2022 spending bills past the September 30 fiscal deadline, the passage of a final NDAA bill will likely be delayed until the end of the year. To further complicate the bill’s future, Members of Congress are eyeing the NDAA—given its track record of passage over the past six decades—as a vehicle for other legislation, such as the United States Innovation and Competition Act (USICA). USICA includes $200 billion for the National Science Foundation (NSF), semiconductors, and other efforts to combat China’s influence through increased investments in research and innovation. Meanwhile, defense spending is also
being used as a bargaining chip in negotiations over reconciliation and the debt ceiling, matters that will continue to be debated through the fall.

**Analysis: House Passes FY 2022 NDAA**
The House bill would authorize $768 billion in discretionary spending, including $739.5 billion in base spending for DOD. As previously mentioned, the final House version authorizes an increased topline of nearly $24 billion above the Biden Administration’s defense budget request, which was included through an amendment originally introduced by Rep. Mike Rogers (R-AL). The passage quickly follows three weeks after the 57-2 approval by HASC on September 2. Of interest to the research community, this topline boost would authorize $15 billion for unfunded procurement, research, and readiness priorities of the military services.

**Specific Research Provisions of Interest**
The House version of the bill would authorize significant increases in key areas of DOD R&D, including biotechnology ($200 million), directed energy ($50 million), and electromagnetic spectrum ($68 million).

Additional R&D-related provisions include:
- $13 million to restore the Minerva Research Initiative, DOD’s signature extramural social science research program
- $20 million for the Defense University Research Instrumentation Program (DURIP)
- $20 million for improved R&D partnerships with allies
- $122 million (increase of $1.2 million) for the National Defense Education Program (NDEP), including funding for civics education and SMART scholarships
- $4 million for polar research and testing capabilities, noting the limited technical workforce issues in the polar region
- $100 million for undersea warfare research, including a $12.5 million increase for academic partnerships for undersea vehicle research and manufacturing
- $100 million for the “acceleration of the deployment of large-scale quantum computing systems” and establishment of a Subcommittee on the Economic and Security Implications of Quantum Information Science through the National Science and Technology Council
- $10 million increase for university and industry research centers, including $4 million for biotechnology advancements and $6 million for polar research and training
- Directives for DOD to provide a report to Congress on efforts to establish a national network for microelectronics R&D composed of U.S. research universities

**Science and Security**
The House bill would require DOD to submit a report to Congress demonstrating they follow disclosure requirements for recipients of R&D funds and would establish a research security training requirement for federal research grant personnel. The bill would also direct the National Academies to study the feasibility of providing enhanced research security services to further protect the U.S. research enterprise from malign foreign influence and prohibit malign talent recruitment program participants from receiving R&D awards from federal research agencies. Additional provisions were included related to concerns about Afghanistan, Russia, Saudi Arabia, and China.

**Space**
The House bill authorizes significant national security space provisions, most notably the establishment of a Space National Guard as a reserve component of the U.S. Space Force. Additionally, the bill would establish a university consortium for space technology development that would support the Space Force’s research, development, and demonstration needs. The bill would also require the National Space Council to create
multiple reports, including a plan for how DOD intends to transition to the next generation of communication satellites.

**Cybersecurity**
The House bill continues to recognize evolving cyber threats and would authorize significant funding for cyber training and workforce development activities, including the establishment of a **cybersecurity training pilot program** at the Department of Veterans Affairs for veterans and members of the Armed Forces transitioning from service to civilian life, as well as a **registered apprenticeship program** at the Department of Homeland Security (DHS) Cybersecurity and Infrastructure Security Agency (CISA). The bill would also authorize $221 million over five years for DHS to **designate at least four cybersecurity-focused centers** to test the security of devices and technologies.

**Climate**
Similar to last year’s NDAA, the House bill would push DOD to continue to assess and address the impacts of climate change and other environmental challenges. The bill includes provisions related to **energy resiliency** as well as water and land **cleanup standards for forever chemicals like polyfluoroalkyl substances**. The bill would also aim to enhance resiliency and strengthen U.S. presence in Arctic countries.

**Workforce**
The House bill would provide increases to several programs for workforce development at DOD, including a $4 million increase for **defense industrial skills and technology training**, including robotic programming and operations to increase automation, digitization of work, and increased use of virtual environments. The House bill directs DOD to provide a report to Congress of **workforce areas of critical need at the Department**, including but not limited to degrees, certificates, and certifications in science, technology, engineering, mathematics, cyber security, AI, quantum computing, and language-based security. Additionally, the bill authorizes $20 million for a pilot program to enable **workforce transformation certificate-based courses on cybersecurity and artificial intelligence** that are offered by Center of Academic Excellence (CAE) universities.” Specific to the Air Force, the bill would authorize $7 million for **innovative research-based education and workforce programs** in the organic industrial base.

**Sources and Additional Information:**
- The full committee markup of the FY 2022 NDAA and additional HASC resources can be found at [https://armedservices.house.gov/ndaa](https://armedservices.house.gov/ndaa)
- The summary of the FY 2022 NDAA can be found at [https://armedservices.house.gov/_cache/files/1/3/13abf96a-7f26-48f0-8c54-c6b6d11e2715/0e2db3e3b22b70f66bad886b4d728a433.20210830-fy22-ndaa-full-committee-summary-final.pdf](https://armedservices.house.gov/_cache/files/1/3/13abf96a-7f26-48f0-8c54-c6b6d11e2715/0e2db3e3b22b70f66bad886b4d728a433.20210830-fy22-ndaa-full-committee-summary-final.pdf)
- The full text of the HASC FY 2022 NDAA can be found at [https://armedservices.house.gov/_cache/files/e/ecac9ec3-554f-4f30-a0f2-20b5ab6f7485/df26ce0b576548d89bea808d96e7dad.fy22-by-request-xml.pdf](https://armedservices.house.gov/_cache/files/e/ecac9ec3-554f-4f30-a0f2-20b5ab6f7485/df26ce0b576548d89bea808d96e7dad.fy22-by-request-xml.pdf)

**Analysis: Senate Releases FY 2022 NDAA**
While SASC approved the NDAA with a 23-3 vote in a closed session on July 21, the full bill text was released on September 22. The SASC FY 2022 NDAA would continue to prioritize U.S. strategic competition with its
adversaries, namely China and Russia, amid other competing priorities, like COVID-19 and natural disasters. The bill would authorize $740.3 billion for base funding at DOD. Lewis-Burke will continue to monitor R&D-related provisions as the Senate works to finalize its bill later in the fall.

**Specific Research Provisions of Interest**

To promote defense modernization, the bill would authorize a funding increase for science and technology programs by more than $1 billion to support universities and other research institutions, especially for research and prototyping activities in critical areas like AI, microelectronics, advanced materials, and 5G. Additional R&D-related provisions include:

- $22.5 million increase for Minerva
- $10 million increase for DEPSCoR
- $15 million increase for Defense Advanced Research Projects Agency (DARPA)-funded university research activities
- $112.2 million (increase of $1.5 million) for the National Defense Education Program (NDEP)
- Establish the national network for microelectronics R&D to support the development of world-leading domestic microelectronics manufacturing capabilities
- $3 million for academic high-performance computation and data equipment capabilities
- $200 million increase for information and communications technology
- $2 million to support efforts to work with universities on research, technology development, and industrial expansion efforts in line with Navy modernization priorities
- $12 million to support the expansion of academic partnerships to support undersea vehicle research activities
- $5 million to support Army-university research partnerships exploring next generation air assault technologies
- $5 million to continue supporting counter-UAS research activities
- Establish pilot programs for telecommunications infrastructure to facilitate the deployment of 5G wireless telecommunications on military installations
- $100 million increase for 5G acceleration activities and $50 million increase for 6G and beyond technology development
- $4 million for the development of polar research and testing capabilities
- Requirements for DOD to establish a set of activities to accelerate the development and deployment of a large-scale, dual-use quantum computing capability
- Requirements for DOD to conduct an analysis comparing the research and development efforts of the United States and China on certain critical, militarily relevant technologies

**Space**

SASC continues to focus on U.S. Space Force (USSF) oversight consistent with last fiscal year’s NDAA and would authorize additional funding for the Commander of the U.S. Space Command and the Chief of Space Operations. Other relevant provisions would authorize $8 million for rapid prototyping of space-capable laser communication technology for the Space Development Agency. The bill would also authorize an increase of $5 million for the development of microelectronics to withstand radiation in space. The Committee would continue to support development of hypersonic technology and directs the Undersecretary of Defense for Research and Engineering to provide a strategy for developing operational hypersonic weapons and the potential use for tactically responsive launch capabilities within three years.

**Cybersecurity**
The bill would focus on improving innovation, cybersecurity, and modern technology by elevating the Department’s cybersecurity posture and critical infrastructure. The bill would authorize a $268.4 million increase for DOD’s cybersecurity-related efforts as well as full funding for the U.S. Cyber Command. Further, it would direct an increase of $3 million for the cybersecurity of industrial control systems, to expand the scope of current academic efforts to work with leading federal laboratories on cybersecurity training.

The bill would strengthen the university cyber consortium of academic institutions that have been designed as Cyber Centers of Academic Excellence for cyber operations, cyber research, and cyber defense. Additionally, the bill would direct DOD to assess the need to establish a cyberspace foundational science and technical intelligence center. The bill would also require DOD to assess the cyber and information operation civilian and military personnel and education requirements of DOD, including an assessment of creating a National Cyber Academy for the military and civilian training.

Climate
The bill would direct DOD to address current and emerging climate and environmental challenges, including an assessment on climate resilience to identify current and future climate risks to DOD, including extreme weather impacts. The bill would create a series of competitively selected technology demonstration programs and a university grant program to strengthen the technology required to support environmental cleanup efforts.

The bill would also encourage the Department to create and/or partner with a consortium of industry, academic, and national laboratory partners dedicated to military installation resilience and energy innovation. The bill would require DOD to develop a plan to establish an Arctic Security Initiative (ASI) to enhance security in the Arctic region.

Workforce
The bill would authorize provisions that were also included in the House bill, such as $4 million for defense industrial skills and technology training, $7 million for Air Force-specific research-based education and workforce programs, and $20 million for a workforce transformation cyber initiative pilot program.

Sources and Additional Information:
- The SASC FY 2021 NDAA is available at https://www.armed-services.senate.gov/imo/media/doc/FY22%20NDAA_full.pdf.
- The SASC Committee report to accompany the bill is available at https://www.armed-services.senate.gov/imo/media/doc/FY22%20NDAA%20Report.pdf.
- Funding tables are available at https://www.armed-services.senate.gov/imo/media/doc/FY22%20Funding%20Tables.pdf.

Funding Opportunities and Agency Updates
Funding Opportunity: NOAA Releases FY 2022 Environmental Literacy Program Competition
The National Oceanic and Atmospheric Administration (NOAA) Office of Education has released its fiscal year (FY) 2022 Environmental Literacy Program (ELP) solicitation. This competition will fund projects which promote environmental literacy in communities so that they can build resilience to extreme weather and climate change “in ways that contribute to community health, social cohesion, and socio-economic equity.” This program, which started in FY 2015, has previously funded projects related to youth leadership in
sustainability, increasing resilience to rising sea levels, citizen science and civics, as well as projects targeted towards underserved communities. This solicitation emphasizes the significance of diversity, equity, inclusion, and climate justice, and indicates that particular attention will be paid to proposals that propose to work with children, youth, and/or adults in communities that are disproportionately impacted by climate change and extreme events with limited resources to help minimize those risks.

The ELP will fund two distinct priority areas; applicants must determine which one to submit to:

- **Priority 1** awards support projects based in the Central and Eastern United States, including: Colorado, Connecticut, Delaware, District of Columbia, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Pennsylvania, Rhode Island, South Carolina, South Dakota, Vermont, Virginia, West Virginia, Wisconsin, and Wyoming.

- **Priority 2** awards support continuing research of projects funded under the 2015-2018 funding opportunities from the ELP by building off resources and lessons learned from other previous or active projects in the ELP community resilience education community of practice.

All projects must address NOAA’s mission in at least one of the following areas: ocean, coastal, Great Lakes, weather, and climate sciences and stewardship, and incorporate NOAA’s intellectual assets including the Administration’s scientific data, data access tools, and/or data visualization processes. Partnerships with NOAA offices, programs, employees, or affiliates are strongly encouraged to best access and utilize NOAA’s assets. Projects should be developed in accordance with NOAA’s Community Resilience Education Theory of Change, which lays out NOAA’s guiding principles for ELP including key elements of project design and metrics against which projects should be evaluated.

Projects should initiate partnerships with community organizations, especially those representing vulnerable communities within the area(s) served by the project, and these organizations should be meaningfully included in the conceptualization, implementation, or leadership team of the project. Projects should also empower target audiences, which includes children, youth, adults, and educators, to lead community climate resilience efforts. Communities who receive ELP grants should gain the information and confidence to “1) reason about the ways that human and natural systems interact globally and locally, including the acknowledgement of disproportionately distributed vulnerabilities; 2) participate in civic processes; and 3) incorporate scientific information, cultural knowledge, and diverse community values in decision-making.”

**Pre-application teleconferences:** NOAA will hold teleconferences for Priority 1 projects on Thursday, September 23, 2021 at 3:00 pm EDT and on Monday, September 27, 2021 at 3:00 pm EDT. There will be a teleconference for Priority 2 projects on Thursday, October 28 at 3:00 pm EDT.

**Deadlines:** Priority 1 projects require pre-applications to be submitted by November 1, 2021 at 11:59 pm EDT. Full proposal applications are due on March 17, 2022 by 11:59 pm EDT, by invitation only. Priority 2 projects do not require a pre-application and are requested by January 25, 2022 by 11:59 pm EDT.

**Award Information:** NOAA anticipates granting 7-12 awards in FY 2022 between Priorities 1 and 2, with award amounts ranging from $250,000 to $500,000 for a total of $5,000,000 in available funds, a significant increase over the previous iteration of the ELP competition, which totaled $3.5 million. Additional funding may be available for projects which incorporate the proposed Civilian Climate Corps Initiative described in Executive Order 14008, Tackling the Climate Crisis at Home and Abroad. Highly-ranked applications not selected for
funding in FY 2022 may be considered for funding in FY 2023, without NOAA publishing a new competition. Projects funded during FY 2022 are anticipated to receive awards by September 30, 2022, with a start date no earlier than October 1, 2022. All projects must be between 2 and 5 years in duration.

**Eligibility:** U.S. institutions of higher education, K-12 public and independent schools and school systems, non-profit, state and local government agencies, and Indian tribal governments are eligible to apply. There is no cost-sharing requirement.

**Sources and Additional Information:**
- The ELP overview and notice of funding opportunities, as well as information about previous competitions, is available at [https://www.noaa.gov/office-education/elp/grants](https://www.noaa.gov/office-education/elp/grants).
- More information on NOAA’s four Mission Goals can be found at [https://www.performance.noaa.gov/goals/](https://www.performance.noaa.gov/goals/).

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**Funding Opportunity: DARPA DSO Releases FY 2022 Young Faculty Award**

The Defense Advanced Research Projects Agency (DARPA) Defense Sciences Office (DSO) released its research announcement (RA) for the fiscal (FY) 2022 Young Faculty Award (YFA) program. This program seeks to identify and support “rising stars in junior research positions” at higher education and non-profit institutions. DARPA especially hopes to engage with researchers who have no prior DARPA funding, to expose them to DARPA’s mission and critical DOD needs. The ultimate goal of the YFA program is to train the next generation of researchers in pressing national security issues to advance the capacity of DOD to address these issues.

DARPA is seeking “innovative research proposals” that address DARPA’s interests across all six of its offices: the Biological Technologies Office (BTO), Defense Sciences Office (DSO), Information Innovation Office (I2O), Microsystems Technology Office (MTO), Strategic Technology Office (STO), and Tactical Technology Office (TTO). Proposals should provide revolutionary ideas that promote advances in science, devices, or systems. DARPA is not interested in research that seeks to improve established practices. DARPA’s topic areas (TAs) of interest include:

1. Modulation of Brown Adipose Tissue for Arctic resilience
2. Engineered Cellular Symbiosis (ECS)
3. Hierarchical Control of Biomaterial Structure, Function, and Organization for Injury Repair
4. Metabolic Engineering Enabling Rare Chemistries
5. Strongly Correlated Material Systems and Sensors
6. Benchmarking Power Requirements for Electromagnetic Non-reciprocity
7. Autonomous Manufacturing and Repair for Austere Environments
8. Neuromorphic Metamaterials
9. Computational Theory of Information Control
10. Threat Modeling of the Influence Platform Ecosystem
11. Patch Process Leapfrogging
12. Computational Theory of Insecurity
13. Effective Assurance of 5G Technologies
15. Embodied Physical Intelligence
16. Physics of Charge Trapping in Bulk Dielectrics
17. In-Situ Characterization of Additively Manufactured Materials in Complex Structures
18. Self-Assembled Transistor Fabrication to Support Manufacturing as a Technology Differentiator
19. Highly-reliable and Bandwidth-scalable Electrical Interconnects
20. Intelligent Sensor Management for Undersea Environmental Characterization
21. Distributed Machine Learning over Non-Terrestrial Networks (NTNs)
22. Trust Architectures to Enable Space Infrastructure as a Service
23. Scaling Challenges in Metal Additive Manufacturing
24. Platform Design Optimization Leveraging Power Beaming
25. Integrated Perception Learning and Control for Autonomous Robots

Proposals to a TA should address the “national security challenges” of that topic outlined in its description (Section I.D.). The Section I.D. for each topic can be found in the full proposal.

In order to understand the kinds of capability advancements DARPA is interested in, proposers are highly encouraged to review DARPA’s mission statement and the descriptions of currently funded programs. By familiarizing themselves with DARPA’s current investments, researchers can better tailor their proposed research to the goals of their TA. Proposers are also encouraged to learn the “Heilmeier Catechism”, which DARPA program managers (PMs) use to evaluate proposals. More information on the “Heilmeier Catechism” can be found here.

**Award Information:** DARPA anticipates granting multiple awards, each with a maximum of $500,000 in funding for a base period of 24 months, with an optional 12-month period also funded at a maximum of $500,000. In addition to funding, awardees will receive mentorship from a PM with experience in topics closely related to their proposed research area, who will act as their project manager.

**Eligibility:** By the full proposal deadline, proposers must be “current tenure-track assistant/associate professors, current tenured faculty within 3 years of their tenure date,” at a U.S. institution or hold an equivalent position at a non-profit research institution. Researchers at non-profit institutions must be within 12 years of receiving their Ph.D. All proposers must be employees of U.S. institutions. Previous recipients of a YFA award are not eligible to apply.

**Submission Information:** DARPA strongly encourages applicants to submit an “executive summary” that addresses the relevance of their proposed research to the program before submitting a full proposal, however this is not required. Executive summaries can be uploaded directly to DARPA’s submission website. This program is targeted at single principal investigators (PIs), who can only submit one executive summary and full proposal per TA. Executive summaries are due by **November 4, 2021 at 4:00 PM ET** and full proposals are due by **January 25, 2022 at 4:00 ET** via electronic proposal submission to grants.gov **here.** Registration information and submission instruction can be found **here.** All inquiries should be emailed to **YFA2022@darpa.mil** by **January 18, 2021, at 4:00 PM ET.**
**Funding Opportunity: EPA Releases STAR Solicitation for Cumulative Health Impacts at the Intersection of Climate Change, Environmental Justice, and Vulnerable Populations**

The U.S. Environmental Protection Agency’s (EPA) Office of Research and Development has issued a request for applications (RFA) for community-based research intended to inform solutions to address environmental health-related disparities as part of its Science to Achieve Results (STAR) grants program. In particular, the solicitation seeks proposals for transdisciplinary research to understand environmental health impacts at the intersection of climate change, environmental justice (EJ), and vulnerable populations and life stages that can be utilized by state, tribal, and local environmental programs as well as communities. This RFA is aligned with several Biden Administration priorities, including addressing climate change and incorporating equity across the federal government – and is also part of EPA’s agency-wide response to three Biden Administration executive orders that outline the need for urgent action to address both topics. The responses submitted to this solicitation are likely to inform future EPA EJ-focused programs and improve EPA’s ability to deliver upon its mission to protect human health and the environment.

Successful applicants will partner and engage with underserved communities and find cross-disciplinary solutions, integrating social science, environmental health, public health, epidemiology, toxicology, economics, and environmental science as well as any other relevant field. The solicitation lays out three research questions which all must be answered in the proposal:

1. “What may be the most influential community-, population- or life stage-specific vulnerabilities caused by ongoing climate change that would elevate exposure to pollutants or contaminants and further exacerbate the health effects from exposure to pollutants or contaminants in underserved communities?
2. What are the cumulative health impacts of climate change related stressors on vulnerable groups or susceptible life stages in underserved communities?
3. How can community-based scientific research results be translated and/or applied to provide effective solutions to reduce climate change impacts on human health in underserved communities?”

Although not required, applicants are encouraged to utilize EJ screening and mapping tools and EJ indictors to enable a data driven approach to the questions above.

**Award Information:** EPA intends to provide $8.1 million for a total of six awards, with award funding up to $1.35 million per project. Performance periods will not exceed three years.
Eligibility: This solicitation is open to institutions of higher education ( Minority Serving Institutions are highly encouraged to apply) and hospitals as well as state, local, and tribal Governments. Federally Funded Research and Development Centers (FFRDCs) may not apply, though FFRDC employees are able to participate in “planning, conducting, and analyzing the research directed by the applicant.” For-profit entities are ineligible to apply.

Evaluation Criteria: All proposals in response to this solicitation will be peer reviewed based on pre-established criteria described in the full RFA. Award decisions will be made based on merit, though the solicitation indicates that at least one award is intended for a new awardee, defined as an entity that has either never received EPA funding or has not received funding for a project period start date of 2016 or earlier.

Important Deadlines:
- An informational webinar for will be hosted on October 5, 2021, from 1-2 p.m. EST.
- Applications are due November 16, 2021.

Sources and Additional Information:

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Funding Opportunity: DOE Releases University-Based Regional Electric Power Cybersecurity Research and Development Centers

On September 22, the Department of Energy (DOE) Office of Cybersecurity, Energy Security, and Emergency Response released a $10 million Funding Opportunity Announcement to create a network of university-based, regional cybersecurity research and development centers across the United States. The centers will address research and development challenges related to cybersecurity and critical energy infrastructure, and will take into consideration the distinctive characteristics of each region’s electricity system, network infrastructure, and workforce expertise.

DOE’s goal is to create new tools and training opportunities for the energy sector through private-public partnerships between universities, energy sector owners and operators, regulatory bodies, and the DOE national laboratories. The network is intended to improve the cybersecurity posture of each region’s energy delivery systems, which will involve cybersecurity aspects of information technology, operational technology networks, and unique local grid physics. Some of the key requirements and expectations include:

- combining rigorous academic approaches with real-world expertise. Academic institutions are required to partner with asset owners/operators and provide solutions to develop tools to address unique cybersecurity energy sector gaps. Energy sector partners are expected to provide industry guidance and ensure all activities are relevant and yield useful results.
- creating new tools and approaches that advance the Biden Administration’s goals of protecting the nation’s energy infrastructure from cyber threats and creating a more resilient energy delivery system with a focus on clean energy systems, next-generation grid and energy management systems.

UMN Washington Update
Prepared by Lewis-Burke Associates LLC
October 1, 2021
• developing cybersecurity education programs to improve and train the nation’s energy sector workforce. Curriculums should be developed in collaboration with industry to satisfy sector needs. The course curriculum should also target different levels of energy sector entities (e.g. small, large regional grid operators, cooperative and municipal utilities) and should include hands on training at the energy sector facilities. The program should take into consideration lessons learned from prior and existing DOE programs, such as the CyberForce competition, CyberStrike, and OT Defender.

• maximizing opportunities for students to enter energy cybersecurity professions through internships and apprenticeships with local energy companies and aim to build a pipeline of students to enter the cybersecurity sector workforce.

Applicants are highly encouraged to include individuals from groups historically underrepresented in STEM on their project teams and each application must include a diversity, equity, and inclusion plan that describes the “actions the applicant will take to foster a welcoming and inclusive environment, support people from underrepresented groups in STEM, advance equity, and encourage the inclusion of individuals from these groups in the project; and the extent the project activities will be located in or benefit underserved communities.”

**Award Information:** DOE expects to make four awards of $2.5 million for each center over two years. Each center is expected to provide a $1 million or 29 percent cost share to match federal funding for a total center award of $3.5 million.

**Eligibility:** Eligible entities include universities, colleges, and non-profit research institutions that operate as divisions under colleges or universities, and incorporated or unincorporated consortia that operate under universities, colleges, and non-profit research institutions. Applicants may submit more than one full application to this funding opportunity announcement. Each application must describe a unique, distinct project.

**Due Date:** The submission timeline and key dates are as follows:

1. Concept papers are due on October 13, 2021.
2. Full applications are due on December 8, 2021.
3. Expected date for concept paper notifications is November 8, 2021.
4. Expected date for selection notifications is February 2022.
5. Expected date for award is April 2022.

**Sources and Additional Information:**

- The funding opportunity announcement is available at [https://www.fedconnect.net/FedConnect/default.aspx?ReturnUrl=%2ffedconnect%3fdoc%3dDE-FOA-0002503%26agency%3dDOE&doc=DE-FOA-0002503&agency=DOE](https://www.fedconnect.net/FedConnect/default.aspx?ReturnUrl=%2ffedconnect%3fdoc%3dDE-FOA-0002503%26agency%3dDOE&doc=DE-FOA-0002503&agency=DOE)

**Funding Opportunity: NIH Releases Solicitation for Modern Equipment for Shared-use Biomedical Research Facilities**

The National Institutes of Health (NIH) has released a funding opportunity for the Modern Equipment for Shared-use Biomedical Research Facilities: Advancing Research-Related Operations program. The solicitation provides support through the R24 mechanism for the purchase and installment of advanced equipment to “enhance and modernize research-supporting operations of biomedical research facilities.” All equipment funded by this opportunity must be placed in a core facility, an animal research facility, or a shared-use space that would benefit the overall research community at the institution. This opportunity does not support funding for research instruments that acquire experimental data or computer and data storage systems supporting data collection, storage, or analysis. Funding for maintaining current operations or fixing broken equipment is also not permitted.

Applications must emphasize how new equipment or an integrated equipment system would be integral in promoting the support of specialized research. An integrated system of equipment is defined as a piece of equipment that works in conjunction with another to perform a task that cannot be completed without the other. Applicants are also encouraged to use the highest level of energy efficient equipment to reduce environmental impacts.

**Award Information:** The maximum project award is $400,000 and projects under $25,000 will not be considered. Multiple pieces of the same equipment are permitted, however the minimum award amount for a single piece of equipment is $10,000. Minor alteration and renovation efforts that would ensure proper installation are also permitted, if applicable, but the cost should not exceed 15 percent of the equipment costs. The project period should not exceed one year.

**Applicant Information:** Any public or private institution of higher education and non-profit research institution is eligible to apply.

**Due Date:** Applications are due December 1, 2021.

**Sources and Additional Information:**

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**Agency Update: DOE Seeking Applications for Graduate Student Programs in STEM, Building Science**

The Department of Energy (DOE) is seeking feedback from stakeholders to help shape research priorities and funding opportunities in solar energy. DOE is also accepting applications to support graduate students in Office of Science STEM fields, buildings sciences, and carbon capture, utilization and sequestration. DOE is still accepting proposals for its annual nuclear research and infrastructure funding opportunities.

**New Engagement Opportunities**
- [Request for Information on Solar Impacts on Wildlife](https://.......): Responses due September 30
DOE’s Solar Energy Technologies Office is seeking information on current practices related to siting large-scale solar energy plants and how stakeholders evaluate the impacts, especially to wildlife, these plants may have on the surrounding environment.

The purpose is to solicit feedback from industry, academia, research laboratories, government agencies, and other stakeholders on issues related to siting strategies; measuring wildlife impacts and benefits; avoidance and mitigation measures; and data and other stakeholder needs.

Specifically, DOE is interested in information on current practices and trends, as well as identifying what data or resources would enable greater confidence in solar energy impact assessments.

Request for Information on Industrial Decarbonization through Concentrating Solar Thermal:
Responses due October 13

DOE’s Solar Energy Technologies Office is seeking input on pathways to use solar energy to decarbonize industries.

The focus is on the application of solar thermal heat, together with thermal energy storage, for both replacement of fossil fuel use and for reduction/elimination of CO2 emissions in three priority industries: bulk chemicals, steel, and cement. DOE is also interested in how hydrogen can be synergistically generated and used as part of solar-thermal-driven versions of these processes.

Specifically, DOE is interested in information on the research, planning, and execution challenges that must be overcome to deploy concentrating solar thermal heat energy (with or without electrification) into iron ore reduction and steel manufacture, cement production and chemicals production, including ammonia and hydrogen.

The responses will help DOE better understand the current status of concentrating solar-thermal technologies for industrial processes and then help guide future investments in solar electric and thermal energy.

The topic of this RFI was identified in DOE’s September 8 Solar Futures Study, which examines solar energy’s potential role in a decarbonized grid and lays out a blueprint for solar to contribute as much as 45 percent of the country’s electrical supply by 2050 and support the electrification of buildings, transportation, and industry.

Student Opportunities

Research Experience in Carbon Sequestration (RECS) program: Applications due October 15

This is an education and training program focused on carbon capture, utilization and sequestration (CCUS) which includes virtual CCUS site tours, live lectures, discussion, and group exercises.

Managed by the Office of Fossil Energy and Carbon Management, this year’s program is scheduled for early December and will be a virtual, online program.

The program is open to Ph.D. or graduate students in geoscience, engineering, physics, climate science, science communications, and related business and social science fields.

Enrollment is competitive and limited to 25 participants who are required to commit to the full program.

Applicants must be U.S.-based.

Office of Science Graduate Student Research program: Applications due November 10

This program supports awards to U.S. graduate students to conduct part of their graduate thesis research at a DOE national laboratory or host site in collaboration with a DOE laboratory scientist.
The program is open to current Ph.D. students in qualified graduate programs at accredited U.S. academic institutions, who are conducting their graduate thesis in STEM fields relevant to the Office of Science.

• **Innovation in Buildings Graduate Research Fellowship (IBUILD):** Applications due by December 1
  o This program is open to Master’s and Ph.D. students doing research in building sciences.
  o The focus of this year’s solicitation is on students working on deployment and market barriers research as well as those conducting collaborative research to increase market adoption around building energy efficiency and building decarbonization technologies.
  o Fellows would receive financial awards to support research at their home institutions and participate in professional development activities that provide access to a network of mentors and potential internships with national laboratories or industry.
  o The Fellowship is renewable for up to 3 years.
  o DOE will start accepting applications on September 22 and appointments will begin in Summer/Fall 2022.
  o An informational webinar is scheduled for October 13 at 3:30 pm EST.

### Current Funding Opportunities

- **$55 million Nuclear Research and Infrastructure Funding Opportunities:** Deadlines in September and November
  o Managed by the Office of Nuclear Energy, DOE released the FY 2022 funding opportunities announcements for Consolidated Innovative Nuclear Research (CINR) and Scientific Infrastructure Support for Consolidated Innovative Research.
  o These programs support nuclear science and engineering projects at research universities as well infrastructure and equipment at nuclear research reactors.

As reported previously, DOE is also seeking feedback from stakeholders to help shape research priorities and funding opportunities in long duration energy storage, quantum computing and biological and environmental research. DOE is also about to accept applications for its lab embedded entrepreneurship program.

### Ongoing Engagement Opportunities

- **Long Duration Storage Shot Summit:** Virtual Event September 22-23, 2021
  o Registration is open to stakeholders interested in learning about DOE’s Energy Earthshot focused on reducing the cost of grid-scale energy storage by 90 percent within the decade. A long duration energy storage system is any technology that can store energy for more than 10 hours at a time.

- **Long Duration Energy Storage Workshop:** Virtual Event September 22, 2021
  o The purpose of the workshop is to identify opportunity and how to overcome barriers in developing and deploying the next generation of long duration energy storage technologies.
  o Topics will include foundational innovations to accelerate long duration storage, long duration technologies beyond lithium, and demonstration projects that can help with commercial deployment.

- **Lab Embedded Entrepreneurship Program:** 2022 Cohort applications open starting on September 21, 2021
  o Entrepreneurial scientists and engineers are selected to help them commercialize clean energy technologies by embedding them with experts at DOE national laboratories and providing them access to unique tools and capabilities.
  o DOE is holding webinars for each of the three program sites that host entrepreneurial fellows:
• Chain Reaction Innovations at Argonne National Laboratory: Register to attend one of four informational webinars. Applications open on September 21, 2021.
• Innovation Crossroads at Oak Ridge National Laboratory: Register to attend one of four informational webinars. Applications open on September 21, 2021.
• Cyclotron Road at Lawrence Berkeley National Laboratory: Register to attend one of six informational webinars. Applications open on October 15, 2021.

• Request for Information on Access to Quantum Systems: Responses due September 30
  o DOE is seeking information to develop a roadmap and establish a program to provide researchers access to quantum systems at national laboratories, research universities, and the private sector.
  o The FY 2021 Energy and Water bill, which funds DOE, required DOE to “develop a roadmap to provide researchers access to quantum systems so as to enhance the U.S. quantum research enterprise, stimulate the fledgling U.S. quantum computing industry, educate the future quantum computing workforce, and accelerate advancement of quantum computer capabilities.”
  o Responses to this request for information will help DOE develop a roadmap and DOE is most interested in what quantum systems should be included in a user network and access models that meet the needs of quantum researchers.
  o Quantum systems currently being considered include systems for synthesis, characterization, and fabrication; sensors and measurement systems; networking and communication systems; and computers, processors, annealers, and analog simulators.
  o This roadmap is also consistent with the House-passed DOE Science for the Future Act, which includes authorization for a new program called the Quantum User Expansion for Science and Technology (QUEST) and recommended funding of $340 million over the next five years.
  o The FY 2022 President’s budget request proposed a 10 percent increase for BER.

• Request for Information on Assessing the National and International Standing of Biological and Environmental Research: Responses due October 31
  o DOE’s Office of Science is seeking input on how to maintain U.S. competitiveness in comparison to other international efforts and grow research efforts of the Biological and Environmental Research (BER) program.
  o Specifically, DOE is seeking information on the status of current capabilities, partnerships, funding mechanisms, and workforce development in atmospheric science; earth and environmental system modeling; environmental science; bioenergy and bioproducts; plant and microbial genomics; data analytics and management; and scientific user facilities.
  o Responses will feed into recommendations the BER Advisory Committee (BERAC) is preparing for DOE that was tasked with assessing BER’s standing in related research efforts nationally and internationally and to consider strategies that would increase BER’s ability to conduct world-class science in core BER research areas. BERAC is expected to issue its final report and recommendations in Spring 2022.
  o BER is expected to receive significant funding increases during the Biden Administration since it is aligned with two major Administration priorities: climate science and biotechnology. The FY 2022 President’s budget request proposed a 10 percent increase for BER.

Agency Update: Department of Homeland Security Publishes Notice of Proposed Rulemaking on DACA
On September 28, 2021, the U.S. Department of Homeland Security (DHS) published a notice of proposed rulemaking (NPRM) to preserve the Deferred Action for Childhood Arrivals (DACA) program. The NPRM was published in response to President Biden’s “Preserving and Fortifying Deferred Action for Childhood Arrivals (DACA)” memorandum and emphasizes the opinion of DHS that DACA recipients should not be prioritized for removal from the United States. The NPRM hopes to fortify DACA after a federal court in Texas ruled it to be unlawful and suspended the ability for DHS to process new DACA applications in July 2021.

Through engaging in negotiated rulemaking, the Biden Administration hopes to counter the main pillar of Judge Andrew Hanen’s July 2021 ruling that the DACA program is unlawful because the Obama Administration violated the Administrative Procedures Act when it created DACA through an executive order. DHS has opened a 60-day comment period for the public to submit comments regarding the proposed rule. After the comment period closes, the agency will consider all submitted comments and issue a final rule. Written comments must be submitted on or before November 29, 2021.

Within the NPRM, DHS does not expand DACA and largely reflects the guidelines defined by former Secretary of Homeland Security Janet Napolitano when the program was established in 2012. The most notable change is the separation of work authorization and deportation protection under DACA. The proposed rule would decouple the process of applying for deportation protections under DACA and work authorization in response to Judge’s Hanen’s ruling, which indicated it was unlawful to apply work authorization to DACA recipients. Under the proposed rule, DACA applicants would need to apply for work authorization separately. The NPRM does not alter the eligibility requirements for DACA, which are as follows: applicants need to have been born after June 1981 and were under the age of 30 on June 15, 2012; who came to the United States when they were under the age of sixteen and who resided in the United States “continuously for at least five years preceding June 15, 2012 and were present in the United States on that date;” are in school, have a high school diploma/GED, or have been honorably discharged from the military; and do not have a criminal record. Other minor modifications to the program include improving the existing filing process and clarifying DHS’s information sharing and use policy in relation to DACA requests.

Although this rule seeks to preserve the current DACA program, DHS recognizes that only legislative action by Congress can provide permanent protection for undocumented youth. The Biden Administration is expected to continue to push Congress to authorize the DACA program through legislation as it engages in the NPRM process through DHS and appeals the Texas court’s decision regarding the legality of the program.

**Due Date:** Written comments should be submitted by November 29, 2021. Those interested in submitting comments should do so through the Federal eRulemaking Portal at [http://www.regulations.gov](http://www.regulations.gov) using the DHS docket number 2021-0006.

**Sources and Additional Information**