



DEFENSE POLICY NEWSLETTER

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VIEW FROM THE HILL

Congress and the White House Strike a New Two-Year Budget Agreement Lifting Spending Caps

In a bipartisan vote of 284-194 on July 25, the House passed a bill to extend the debt limit and set spending levels for the coming two fiscal years. The House took quick action to pass the deal after the White House and House Speaker Nancy Pelosi (D-CA) reached a tentative two-year budget deal that would raise spending caps by \$320 billion and suspend the debt ceiling for two years. The deal faced tougher criticism in the Republican-led Senate. Ultimately, on August 1, the Senate passed the agreement with a vote of 67-28. It is now awaiting President Trump's signature.

The budget agreement would avoid a \$126 billion, or 10 percent, cut in discretionary spending in fiscal year (FY) 2020 required in the *Budget Control Act of 2011*. Instead, the budget agreement would increase discretionary spending in both FY 2020 and FY 2021 above FY 2019 funding levels. Defense spending would grow by \$22 billion, or 3 percent, above FY 2019 enacted levels. This would be \$5 billion more than the House Democrats' proposal but short of the Trump Administration's \$750 billion request. Defense spending includes \$666.5 billion for core defense programs and \$71.5 billion for the Overseas Contingency Operations account. The budget agreement would suspend the debt ceiling until July 1, 2021.

Despite being \$12 billion less than what the White House requested for the Department of Defense (DOD) in FY 2020, which could pinch modernization efforts, newly-installed Secretary of Defense Mark Esper said he is pleased with the budget deal's recommendation for the Pentagon. Esper is focused on the two-year budget predictability that the deal offers and the potential to avoid continuing resolutions that disrupt DOD's

efforts to plan for its funding.

With a budget agreement in place, the Senate is expected to finish drafting its FY 2020 appropriations bills and start to advance them through committee in September. To date, the Senate has not advanced or passed any of the 12 annual appropriations bills. If the Senate moves forward quickly with its appropriations bills, similar to last year, Congress is expected to group together several appropriations bills in what is called a minibus package and pass it before the end of the fiscal year. DOD appropriations remain a priority for Capitol Hill and will likely be considered in the first minibus package along with funding for the Departments of Labor, Health and Human Services, and Education, as well as energy and water appropriations. Those bills will likely be drafted during the August congressional recess, with a goal of passage by the end of September. However, it is likely that Congress will have to pass a continuing resolution to avoid a government shutdown and continue funding at FY 2019 levels for all, if not most, government agencies.

Of interest to the academic and research community, while the budget agreement would provide a boost in funding in FY 2020, there would be almost no growth in funding in FY 2021. The budget agreement would provide only a \$2.5 billion increase in non-defense spending in FY 2021. Advocacy focused on robust funding in FY 2020 for federal science agencies as well as federal programs that fund research and health care priorities for the academic and research communities is even more important.

House Passes NDAA, Moving Bill to Conference

The House of Representatives passed the fiscal year (FY) 2020 *National Defense Authorization Act* (NDAA) this month on a 220-197 party line vote. The defense policy bill, which has been passed on a bipartisan basis for the last 58 years, reflects the priorities of House Armed Services Committee (HASC) Chairman Adam Smith (D-WA) and the House Democrats. The bill will face complications due to partisan disagreements over the level of funding authorized and a number of policy provisions that have raised objections from Republicans, such as prohibiting the use of DOD funds towards constructing a wall on the Southern border, limiting the deployment of additional nuclear weapons, and barring DOD from sending new detainees to Guantanamo Bay. The White House [released](#) a statement of administration policy warning that it would recommend the President veto the bill.

A number of amendments were passed that would increase the funding authorized for basic research at DOD. Other relevant amendments would:

- Direct the Assistant Secretary of Defense for Health Affairs to establish a University Affiliated Research Center (UARC) to focus on health challenges facing wounded servicemembers, such as opioid dependence, new methods for pain management, and mental health
- Direct DOD and the Air Force to establish a “Quantum Information Science Innovation Center,” with an authorized funding level of \$10 million
- Increase authorized funding for the Defense Language and National Security Education Office by \$13 million for Chinese language and culture studies, in response to congressional concerns over Confucius Institutes
- Direct the Undersecretary of Defense for Research and Engineering (USD(R&E)) to provide a briefing on the application of distributed ledger technology, known as blockchain, for defense purposes
- Require DOD to assess the STEM workforce within DOD and identify job gaps to address to support DOD’s mission
- Direct the National Security Commission on Defense Research at Historically Black Colleges and Universities and other Minority Institutions to work with the Department of Education to develop a list of covered institutions. Another amendment would direct the Commission to assess DOD’s efforts to attract and retain STEM students from relevant institutions
- Increase authorized funding for health research pertaining to brain injuries and triple negative breast cancer
- Increase authorized funding for Army basic research on improving the resilience of infrastructure on military bases

The Republican-controlled Senate handily passed its NDAA earlier in June by a vote of 86-8. The bill will now go to a conference committee so that the Senate and House can negotiate on the differences between each chamber’s version of the bill. Due to significant disagreements between the two bills, the timing and outlook of the bill’s passage is unclear.

Sources and Additional Information:

- A full list of amendments considered on the house floor is available [here](#).
- Lewis-Burke's earlier analysis of the Senate NDAA and the HASC Committee's approval of the bill can be found [here](#).

NATIONAL SECURITY NEWS

Mark Esper Confirmed as Defense Secretary, Focuses Efforts on Filling Vacancies

The Senate confirmed Mark Esper to become the Secretary of Defense in a 90-8 vote on July 23. Esper is the first permanent defense secretary in nearly six months since James Mattis stepped down last winter. Esper also served as acting defense secretary following Patrick Shanahan's withdrawal from his nomination to the position in June and was the Secretary of the Army from 2017 to 2019. Esper is a Gulf War veteran and previously worked as a Hill staffer and lobbyist for Raytheon. David Norquist, former Secretary of the Navy, served as acting defense secretary during Esper's nomination process and was confirmed to be Esper's deputy on July 31. Despite Esper and Norquist's confirmations, there are still many senior roles at DOD that lack permanent appointees. During a press briefing just hours after taking office, Esper said he is focused on filling empty spots quickly at the Pentagon – including 14 of 59 political appointments and four of the top six roles in the DOD still filled by acting individuals – “to make sure we have that civilian control of the military.”

One of those empty spots is Secretary of the Army, now vacant with Esper's promotion. Ryan McCarthy, the Under Secretary of the Army, has been nominated to fill the full role. On July 31, the Senate Armed Services Committee (SASC) conducted a hearing on the nomination of Vice Admiral Michael M. Gilday to be the Chief of Naval Operations (CNO), replacing Admiral John Richardson. Gilday, currently the director of the Joint Staff, was selected to become CNO July 17 when Adm. Bill Moran, who had recently been confirmed to become CNO, instead decided to retire shortly before he was scheduled to take over from Richardson. Moran's abrupt decision to retire came while the Navy was investigating an ongoing professional relationship he maintained via email with a now-former public affairs officer who was accused of mistreating multiple women at a 2016 holiday party.

Army Gen. Mark Milley was confirmed July 25 as the 20th Chairman of the Joint Chiefs of Staff, following an 89-1 vote in the Senate. Milley, the former Army chief of staff, is expected to replace Marine Corps Gen. Joe Dunford as the nation's top uniformed officer sometime in September. Milley and Defense Secretary Esper worked side by side for two years when Esper was Army Secretary. Senator Jeff Merkley (D-OR) was the lone no vote. As nominee, Milley has thrown his support behind nuclear modernization and new capabilities for information warfare.

Air Force Gen. Paul J. Selva, the vice chairman of the Joint Chiefs of Staff, retired July 31 after more than four decades of distinguished military service. Selva has served as vice chairman since July 2015. Selva's potential replacement has become controversial during the confirmation process. Air Force Gen. John Hyten, President Trump's nominee to be vice chairman of the Joint Chiefs of Staff, was accused by Army Col. Kathryn Spletstoser of sexual assault and non-sexual misconduct, which she says occurred when she was working for him at U.S. Strategic Command, where he is now commander. Hyten denied the allegations during a Senate hearing on his nomination July 30 and was defended by several Republicans and some Democrats, including former Air Force Secretary Heather Wilson and Senator Martha McSally (R-AZ), an Air Force veteran who revealed recently that she was raped by a superior officer while at the Air Force Academy. An Air Force investigation of the accusations this year concluded there wasn't sufficient evidence to take action against Hyten.

With the recent departure of Frederica Darema as Air Force Office of Scientific Research (AFOSR) Director, Lewis-Burke has learned that current leadership consists of Colonel Jason Mello, Chief of the Science and Engineering Division and a space program specialist, as well as Colonel Michelle Ewy, who is serving as acting deputy director and has conducted fuel science research. The acting chief scientist is Dr. Venke Sankaran, an Air Force senior scientist for propulsion. The Director's job was recently posted online and is expected to take time to fill.

Director of National Intelligence Resigns, President Trump Names New Intel Chief

Director of National Intelligence (DNI) Dan Coats [resigned](#) from his role on July 28. President Trump announced the same day as Coats' resignation that he will nominate

Rep. John Ratcliffe (R-TX) to the position. Rep. Ratcliffe is a former U.S. attorney and will assume the role on August 15. Coats served as the DNI since March of 2017 and previously served as a U.S. Senator from Indiana. He was regarded as an independent voice within the Trump Administration, which likely contributed to his departure, according to several reports. Although a 2004 law known as the Intelligence Reform and Terrorism Prevention Act states that the Principal Deputy Director of National Intelligence, currently Susan Gordon, “shall act for, and exercise the powers of, the Director of National Intelligence...during a vacancy in the position...,” President Trump has indicated his intent to nominate an acting DNI.

Army Futures Command Leadership Illuminates Approach to Small Business and Academic Outreach

As the Army Futures Command (AFC) headquartered in Austin, TX, approached its full operational capability on July 31, just one year after its launch. General John “Mike” Murray, AFC Commander, and the Army’s acquisition chief Bruce Jette detailed the Command’s approach to innovation at a July 19 Pentagon press briefing.

Murray described AFC’s efforts to create institutes and hubs at universities to focus on technologies that align with the Command’s six modernization priorities and eight Cross-Functional Teams (CFTs). For example, the Army is building a robotics institute at the University of Texas to help the Command develop technology for autonomous breaching missions and improve battery technologies and energy storage capabilities. The robotics institute will also work on assured Positioning, Navigation, and Timing (PNT), Murray told reporters. Murray also described plans at Texas A&M University to build a Soldier Development Center, which would provide an agile development capability to pair soldiers with engineering students and faculty to solve problems on the battlefield. He noted Texas A&M’s alignment with hypersonics and directed energy research and development, major priorities across the Department of Defense and the Army. Murray and Jette also highlighted the AI Task Force at Carnegie Mellon University and an Educational Partnership Agreement with Vanderbilt University focused on supporting the 101st Airborne Division at Ft. Campbell.

Murray and Jette also highlighted efforts to better engage small businesses, including the establishment of the Army Applications Lab at Capital Factory, a hub for start-ups in

Austin. AFC is forming another team at its headquarters to better engage small businesses. General Murray said he is planning an Austin event to match small businesses with defense prime contractors to help them scale and manufacture solutions.

DOD Chief Technology Office Launches New Web Sites

The Office of the Under Secretary of Defense for Research and Engineering (OUSDR&E), known as the Department's Chief Technology Office (CTO), launched two new web sites in late July to provide information on how two of its directorates support the office's mission to foster technological dominance across the Department of Defense (DOD).

The first web site, <https://rt.cto.mil>, for the Directorate of Defense Research and Engineering for Research and Technology (DDR&E (R&T)), includes information about the latest research and technology through DOD science and technology (S&T) programs, DOD laboratories infrastructure, federal funded institutions, and programs that help cultivate the next generation of S&T professionals for the DOD. The web site includes information about offices and programs such as Research Technology and Laboratories; Strategic Technology Protection and Exploitation; Defense Technical Information Center; Reliance 21; and DOD STEM and its outreach efforts. The Office of Basic Research falls within this directorate.

The second new web site, <https://ac.cto.mil>, captures the Directorate of Defense Research and Engineering for Advanced Capabilities (DDR&E (AC)), which focuses on technology transition and fielding new capabilities for the warfighter. This directorate works with a network of technology transition partners within and external to DOD to mitigate gaps through accelerate prototyping, demonstration, and fielding. The web site features its primary offices, Developmental Test, Evaluation, and Prototyping; Chief Engineer for Advanced Capabilities; and Test Resource Management Center.

AFRL Joins IBM Q Network to Form New Quantum Information Technology Hub in New York

The Air Force Research Lab (AFRL) recently [announced](#) that it has joined the IBM Q Network to gain access to commercial quantum systems to create an AFRL Quantum Hub in Rome, New York. The IBM Q Network has already established quantum hubs throughout the world to bring together academia, industry, and other quantum-focused

minds. This partnership is the first of its kind at DOD and will allow AFRL to work with IBM researchers to investigate Air Force problems concerning hardware to gain a “quantum advantage” over conventional computing. Dr. Paul Alsing, principal physicist and an AFRL fellow, stated that the alliance will accelerate quantum computing experimentation. The State University of New York (SUNY) has joined AFRL and IBM as an academic partner of the hub.

DARPA Announces Launch of Microsystems Exploration Program

The Defense Advanced Research Projects Agency (DARPA) Microsystems Technology Office (MTO) recently [announced](#) the launch of its Microsystems Exploration program. In line with DARPA’s fast-track “[disruptioneering](#)” initiative and modeled after the existing Artificial Intelligence (AI) Exploration program, the Microsystems Exploration program will make short-term investments into technical research areas of interest to MTO. The first three potential topics are “hardware security, novel materials, and new computing architectures for heterogeneous systems.” Specific MTO research topics of interest also include: “microsystem intelligence and localized processing; novel electromagnetic components and technologies; microsystem integration for functional density and security; and disruptive microsystem applications in C4ISR, electronic warfare, and directed energy.” More information on the Microsystems Exploration program can be found on www.fbo.gov under solicitation number “DARPA-PA-19-04.”

DOD to Stand Up New Information Security Office on Cybersecurity

The Department of Defense (DOD) [plans](#) to stand up a new Chief Information Security Office (CISO) on cybersecurity to improve DOD’s effectiveness in responding to cyber threats. Katie Arrington, former U.S. House of Representatives candidate, will lead CISO under Kevin Fahey, the Assistant Secretary of Defense for Acquisition. Arrington has been working as the special assistant for cybersecurity to Fahey since January and has been involved in a Department-wide effort to develop a Cybersecurity Maturity Model Certification (CMMC) to create a consistent framework for the cyber demands it imposes on industry.

NSA to Launch First Cybersecurity Directorate this Fall

The National Security Agency (NSA) plans to [establish](#) its first cybersecurity directorate on October 1. The cybersecurity directorate’s central mission is to enhance the agency’s

“white hat mission” by sharing information about network threats and vulnerabilities with the industry and public to protect national security and the defense industrial base. The directorate aims to create new cybersecurity partnerships and clients, and better collaborate with government partners, such as the U.S. Cyber Command, Department of Homeland Security, and Federal Bureau of Investigation to prevent and eliminate national cybersecurity threats. The directorate will be led by Anne Neuberger, who led NSA’s “Election Security Group” and served as both NSA’s first chief risk officer and deputy director of operations. She will report directly to NSA Director and U.S. Cyber Command chief Army Gen. Paul Nakasone.

White House Releases Updated Strategic Plan for AI R&D, Congress Develops AI Legislation

The Trump Administration recently released *The National Artificial Intelligence Research and Development Strategic Plan: 2019 Update*, a modified version of a similar plan originally released in 2016. The plan creates a framework for guiding federal AI R&D activities in accordance with the Administration’s February 2019 Executive Order establishing the *American Artificial Intelligence Initiative*.

The document outlines AI R&D areas that industry is unlikely to address on its own and offers eight individual strategies for how the federal government can help to advance them. These strategies are:

1. Make long-term investments in AI research;
2. Develop effective methods for human-AI collaboration;
3. Understand and address the ethical, legal, and societal implications of AI;
4. Ensure the safety and security of AI systems;
5. Develop shared public datasets and environments for AI training and testing;
6. Measure and evaluate AI technologies through standards and benchmarks;
7. Better understand the national AI R&D workforce needs; and
8. Expand public-private partnerships to accelerate advances in AI.

While all the strategies are of likely interest to the academic community, Lewis-Burke highlights two in particular—fundamental research and the societal and ethical implications of AI. The updated strategic plan notes that much of the progress made since 2016 on the first strategy—making long-term research investments in AI research—has centered on

narrowly focused AI applications and that sustained investment in core areas relevant to AI would be required to realize general purpose AI. In particular, more capable, reliable, and explainable machine learning will necessitate additional research in “commonsense reasoning and problem solving, probabilistic reasoning, combinatorial optimization, knowledge representation, planning and scheduling, natural language processing, decision making, and human-machine interactions.” These research areas are consistent with investments being made across federal agencies, including the National Science Foundation (NSF), the Department of Energy (DOE), and the Department of Defense (DOD). The strategy also emphasizes the centrality of shared data and infrastructure to enabling such advances. Lewis-Burke’s full report on the strategic plan for AI R&D can be found [here](#).

FUNDING AND ENGAGEMENT OPPORTUNITIES

Air Force Academy Releases BAA for New Approaches in Artificial Intelligence Education

The U.S. Air Force Academy (USAFA) released a call under its general broad agency announcement (BAA) seeking fundamental research that can lead to new approaches in artificial intelligence (AI) and autonomous systems (AS) education. USAFA’s Academy Center for Cyberspace Research (ACCR), which focuses on computer and cyber science, is specifically seeking research proposals that may lead to the development of lesson plans, exercises, and classroom activities at USAFA and public institutions. Proposals should also include mentorship for cadets to develop capstone projects addressing concepts for AI/AS systems and deployment of those systems. Research areas should include algorithms, educational best practices, techniques, and pedagogical approaches.

Entities from academia and industry are eligible to apply. White papers are due on **August 30, 2019 by 4:30 p.m. MST** and full proposals, if invited, are due 30 days after the request for proposal is sent to a potential awardee. USAFA anticipates awarding one cooperative agreement with a total estimated funding of \$420,000 for a performance period of 36 months.

Sources and Additional Information:

- More information on this solicitation can be found on www.grants.gov under solicitation number “USAFA-BAA-2015-CALL-0008.”
- USAFA’s general BAA, which lists its research interests, can be found at www.grants.gov under solicitation number “USAFA-BAA-2015.”

AFRL to Issue BAA for Operationalizing Machine Learning for Command and Control

The Air Force Research Laboratory (AFRL) Rome, NY, Information Directorate made an initial announcement July 25 regarding a forthcoming BAA seeking to identify, develop, and evaluate novel applications of Artificial Intelligence (AI) and Machine Learning (ML) to support operational aspects of Command and Control (C2). The OpML program will achieve its goal of “re-envisioning Air Force C2 operations through the use of AI/ML methods.” The OpML Program Team’s initial analyses considered wide-ranging applications of ML in the air combat and air mobility operations centers, as well as interesting applications for air battle management C2. Based on the analyses, AFRL is seeing out solutions that focus on the problems of planning, operational and tactical level decision making, and operational execution management. The Air Force expects the development of prototype applications, respective use cases, workflows, and data requirements to be critical to establish the viability and usefulness of the assessed candidate applications for assessment in an operational setting. AFRL plans to host an [industry day](#) on August 2, 2019 at Griffiss Institute in Rome, NY. Total funding for the BAA is about \$24.9 million. Multiple individual awards will not exceed 24 months and will range from \$300,000 to \$1 million.

The program will consist of two tasks. The first will concentrate on prototype development and evaluation within a single domain (air, space) for AI/ML applications supporting the operational C2 tools and processes, with several efforts spun up as quickly as possible to address multiple operational challenges. Task 1 will also contain an optional task to expand the original workflow to multi-domain use cases. Task 2 is specifically focused on applying Reinforcement Learning to air combat and mobility operational-level planning processes, including the design of a necessary supporting simulation and evaluation environment for training and execution of AI/ML algorithms for C2 planning. The full pre-solicitation notice can be found at www.fbo.gov under solicitation number “FA8750-19-S-

7014.”

AFRL Announces Defense Production Act Title III FOA for Domestic Production Capability and Capacity

The Air Force Research Laboratory (AFRL) Materials and Manufacturing Directorate recently released its Defense Production Act (DPA) Title III Expansion of Domestic Production Capability and Capacity funding opportunity announcement (FOA). DPA Title III aims to strengthen and expand “domestic productive capacities” and government access to critical technology. “Each DPA Title III Program effort will provide incentives to domestic manufacturers to create, maintain, protect, expand, or restore their critical production technologies and to develop and/or adopt best business and marketing practices to achieve joint manufacturing capacity, quality, affordability, and economic viability requirements.”

As a result of changes to the program administered by the Air Force, the FOA offers two options for proposals: 1) an open FOA period during which white papers may be submitted until **July 12, 2024** and 2) a FOA with Calls for proposals in specific topic areas. At this time, only white papers are being requested for the open FOA. The government anticipates making multiple awards ranging from \$10,000,000 to \$25,000,000. The full solicitation can be found on www.grants.gov under solicitation number “FA8650-19-S-5010.”

Army Center Seeks Information on Cybersecurity Defense Operations and Research

The U.S. Army Combat Capabilities Development Command’s Command, Control, Communication, Computers, Cyber, Surveillance, and Reconnaissance (C5ISR) Center is seeking information on cybersecurity defense operations and research. C5ISR’s Cybersecurity Defense Operations and Research (CDOR) Branch is focused on cybersecurity efforts including battlespace awareness, securing operating areas, command and control, and defense of DOD information. CDOR’s request for information includes various questions on defense cyber operations and innovations which can be found in the full solicitation. Responses are due on **August 19, 2019 no later than 3:00 p.m. ET**. The full solicitation can be found at www.fbo.gov under solicitation number “W56KGU-19-R-DC0.”

Army Research Laboratory Issues RFI for Partnership Intermediary Agreement

In support of the Army Futures Command, the U.S. Army Research Laboratory (ARL)

issued a request for information (RFI) for potential Partnership Intermediary Agreement (PIA) partners to create a more efficient and effective defense laboratory that can be adaptive and responsive to the challenges of 21st century national security. ARL is interested in leveraging a partnership intermediary to convene multiple disciplines to engage in collaborative projects through both formal and informal interactions. ARL is exploring the establishment of a PIA to serve as an intermediary to assist ARL in the following areas:

- Outreach - Facilitate creation and execution of partnerships to enable the transition of knowledge and technology
- Facilitation of Collaborative Research - Assist ARL in facilitating access to leading research facilities and researchers and expand research programs to include fluid collaboration venues (physical and virtual). Research areas of interest to ARL can be found in its posted Broad Agency Announcement located at <https://www.arl.army.mil/www/pages/8/SUMMARYOFCHANGES-W911NF-17-S-0003-Amendment07.pdf> and on the website <https://www.arl.army.mil/www/default.cfm?page=2512>
- Business Development - Develop and maintaining synergistic relationships with the entrepreneur community
- Technology Assessments - Assess the merit of technology concepts both from ARL and external sources
- Research and Technology Forecasting - Forecast future technology directions, disruptive innovations, and other opportunities for technologies to meet future Army needs
- Administration of the PIA

Responses to the RFI must be received no later than **5:00 p.m. on August 8, 2019**. The RFI is available [here](#).

CDMRP Releases Pre-Announcements for New Programs in Pain Management and Combat Readiness

DOD's Congressionally Directed Medical Research Programs (CDMRP) released two pre-announcements for new fiscal year (FY) 2019 CDMRP programs: 1) Chronic Pain Management Research Program (CPMRP) and 2) Combat Readiness – Medical Research

Program (CRRP).

The CPMRP program focuses on “improving the health and quality of life of Service Members, Veterans, and all Americans living with chronic pain.” FY 2019 CPMRP funding opportunities will include investigator-initiated research awards in the focus area of ‘chronification’ of pain, with maximum funding of \$900,000 for a performance period of four years and translational research awards in the focus areas of comparative effectiveness and implementation science, with maximum funding of \$1,400,000 for a performance period of four years. More information on the CPMRP program and solicitation can be found [here](#).

The CCRP program supports therapeutic research and military-relevant advanced technology that can “promptly address life-threatening injuries, medical threats, and treatments” of soldiers. FY 2019 CCRP funding opportunities will include rapid development and translational research awards in focus areas including but not limited to wound care, hemorrhage, and acute pain. Maximum funding is \$1,500,000 for a period performance of two years, and pre-application in the form of a letter of intent is required. More information on the CCRP program and solicitation can be found [here](#).

Note: Pre-applications are required for both programs and must be submitted through the electronic Biomedical Research Application Portal (eBRAP) at <https://eBRAP.org> prior to the pre-application deadline.

Chemical and Biological Defense S&T Conference Registration Opens

Registration for the 2019 Chemical and Biological Defense Science & Technology (CBD S&T) Conference on November 18-21, 2019 in Cincinnati, Ohio is now open. Participants must register by **November 1, 2019** and can register at the conference website www.cbdstconference.com. As previously reported, the CBD S&T Conference is an opportunity to engage with DTRA’s Chemical and Biological Technologies program managers, as well as collaborate and connect with other researchers, scientists, and industry representatives. Through the conference, DTRA seeks to review and identify cutting-edge basic and applied research in chemical and biological defense.

Additional Sources and Information:

- Additional information on the call for papers, including topic descriptions and session leaders, is available at <https://www.cbdstconference.com/2019-call-for-papers/2019-topics>.
- All CBD S&T Conference details, including registration and abstract submissions, are available at <https://www.cbdstconference.com/2019homepage>.

DARPA MTO Releases First Microsystems Exploration Program Solicitation

DARPA's Microsystems Technology Office (MTO) issued its first in a series of Microsystems Exploration Program solicitations on July 18, shortly after announcing the kick off of the program at the Electronics Resurgence Initiative Summit in Detroit. The first Microsystems Exploration topic is called Safeguards against Hidden Effects and Anomalous Trojans in Hardware (SHEATH). The goal of the SHEATH Microsystems Exploration topic is to identify and demonstrate technical feasibility for real-time detection against hardware Trojans installed in complex COTS circuit boards. Technologies which detect anomalous excursions with low probability of false alarms could involve any of the following: single-stream or multi-modal sensing, side-channel extractions, trigger discovery via active stimulation, or performance-based machine learning architectures. Proposals are due no later than **4:00 p.m. ET on August 19, 2019**. Awards will utilize the Other Transaction for Prototype mechanism. More information and the full solicitation are available at <https://www.fbo.gov/spg/ODA/DARPA/CMO/DARPA-PA-19-04-01/listing.html>.

DARPA Publishes BAA for Information Innovation Office Intent-Defined Adaptive Software (IDAS)

DARPA's Information Innovation Office (I2O) issued a Broad Agency Announcement (BAA) for its Intent-Defined Adaptive Software (IDAS) seeking innovative research proposals for novel software engineering technologies. The goal of the IDAS program is to develop technologies that "capture the intentions of software engineers, to enable rapid code generation to support the continual adaptation of DoD software-enabled systems." Technologies developed through the program will enable "rapid adaptation" of software in different operating environments. The four technical areas (TAs) are:

- TA1 – Automated software generation
- TA2 – Problem set generation

- TA3 – Integrated test and evaluation
- TA4 – Experimental control and transition

DARPA anticipates awarding multiple awards for TA 1 and one award each for TAs 2-4. Proposals are due on **September 10, 2019 at 12:00 p.m. ET**. More information can be found at www.grants.gov under solicitation number “HR001119S0074.”

DARPA Announces SBIR/STTR Opportunity for Side Channel Attack Testbench Estimator (SCATE)

DARPA’s Small Business Programs Office (SBPO) is soliciting innovative research proposals focused on side channel security. Through this Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) opportunity, DARPA’s Side Channel Attack Testbench Emulator (SCATE) program will aim to address side channel and fault injection vulnerabilities specifically “in the context of emissions from the parts of the design that perform on-chip cryptographic functions.” Proposals are due on **August 6, 2019 at 2:00 p.m. ET**. Accepted proposals will have multiple phases with different funding awards. More information can be found at www.grants.gov under solicitation number “HR001119S0035-05.”

DMRDP Releases Restoring Warfighters with Neuromusculoskeletal Injuries Research Award (RESTORE)

DOD’s Defense Medical Research and Development Program (DMRDP) recently released a FOA for its Restoring Warfighters with Neuromusculoskeletal Injuries Research Award (RESTORE) program. RESTORE is seeking research proposals that address the management, treatment, and restoration of neuromusculoskeletal injury from the battlefield, especially “acute combat/non-combat injury, repetitive overuse injury, limb loss, and limb trauma.” Proposals should address specific focus areas and research levels listed in the full solicitation.

DMRDP anticipates awarding 25-30 proposals and has allocated approximately \$40 million for funding. Pre-applications are due on **September 3, 2019 at 5:00 p.m. ET**, and invitations to submit an application will be made in October 2019. Applications are then due on December 16, 2019 no later than 11:59pm ET. The full announcement can be found at www.grants.gov under solicitation number “W81XWH-19-DMRDP-CRMRP-

RESTORE.”

Military Operational Medicine Research Program Releases RFI for Pilot Program on Psychological Conditions Associated with Sexual Assault

The Joint Program Committee-5/Military Operational Medicine Research Program recently released a request for information (RFI) for psychological and behavioral health research. The Defense Health Agency (DHA) is seeking industry feedback on current capabilities to establish a military-civilian partnership to conduct a pilot program for intensive outpatient programs to address psychological health conditions associated with sexual assault, including posttraumatic stress disorder (PTSD). Responses to the RFI should address specific questions listed in the full solicitation. Responses are due on **August 21, 2019 at 4:00 p.m. ET**. More information can be found at www.fbo.gov under solicitation number “HT9402RFI201906250001S.”

Military Operational Medicine Research Program Releases RFI for PREVENTS National Research Strategy

The Office of Science and Technology Policy (OSTP) and Department of Veterans Affairs (VA) released a request for information (RFI) to help develop a National Research Strategy for the President’s Roadmap to Empower Veterans and End the National Tragedy of Suicide (PREVENTS). The RFI seeks input on ways to “increase knowledge about factors influencing suicidal behaviors and ways to prevent suicide; inform the development of a robust and forward-looking research agenda; coordinate relevant research efforts across the nation; and measure progress on these efforts.” Responses are due on **August 5, 2019**. The RFI can be found [here](#).

NITRD NCO Issues RFI on Strategic Computing

The Networking and Information Technology Research and Development (NITRD) National Coordination Office (NCO) has issued a request for information (RFI) seeking input on a planned update to the objectives that guide the National Strategic Computing Initiative (NSCI). The need for this is based on the fact that the strategic computing landscape has changed significantly since NSCI was first launched under the Obama Administration in 2015, and that as such, the objectives themselves should be revisited. These are the strategic objectives that currently guide NSCI:

1. Accelerating the delivery of capable exascale computing systems
2. Increasing technology coherence between technology base used for modeling and simulation and that used for data analytic computing
3. Establishing, over the next 15 years, a viable path forward for future HPC systems, even after the limits of current semiconductor technology are reached
4. Creating an enduring national HPC ecosystem
5. Developing an enduring public-private partnership to ensure that the benefits of the research and development advances are, to the greatest extent, shared between the United States Government and industrial and academic sectors

Comments should specifically address one or more of the seven questions included in the RFI, which can be found at [here](#). Responses are due **August 23, 2019**.

WHAT WE'RE READING

Electronic Warfare Spending on the Rise

National Defense reports that DOD plans to increase investment in electronic warfare (EW) and request \$10.2 billion for EW activities in FY 2020. In FY 2019, Congress allocated \$700 million more for EW projects than President Trump's budget request. Specific electronic warfare capabilities of interest to DOD include directed energy weapons and new unmanned systems with electronic warfare weapons. The article states that Gen. Joseph Dunford, the outgoing chairman of the Joint Chiefs of Staff, told *National Defense* that EW is the No. 1 functional area where DOD needs to invest in the coming years. Read more [here](#).

The U.S. Army is Making Synthetic Biology a Priority

DefenseOne reports on the Army Futures Command's efforts to accelerate synthetic biology to support military applications. This includes developing new materials that may help soldiers cloak themselves by looking like their natural environments or masking their heat signatures, or that may repel insects. Dimitra Stratis-Cullum, who oversees the Army Research Laboratory's efforts in this area, also notes that ARL will seek to forecast how potential adversaries may be developing or attempting to use synthetic biology. Read more [here](#).

Think Tank Makes Recommendations on the U.S. Defense Department's Role in Health Security

The *Center for Strategic & International Studies* (CSIS) recently released a report on DOD's current capabilities and recommendations for future efforts around Health Security. The report details current efforts to protect against biological threats to the U.S. caused by weapons of mass destruction as well as threats to the armed forces from disease and environmental hazards. It also recommends prioritizing health security within DOD's overall mission and leadership, as well as supporting research on infectious diseases and medical countermeasures specifically relevant to the military, among other recommendations. The full report can be found [here](#).

DARPA'S \$1.5-Billion Remake of U.S. Electronics: Progress Report

In a recent interview, *IEEE Spectrum* sat down with [Mark Rosker](#), director of the Defense Advanced Research Projects Agency (DARPA) Microsystems Technology Office (MTO) to discuss progress on the Electronics Resurgence Initiative (ERI). The ERI is DARPA's five-year initiative to improve electronics performance and the U.S. microelectronics enterprise through collaboration among industry, university researchers, and the defense industrial base. Rosker discusses, in advance of the 2nd ERI Summit from July 15-17 in Detroit, recent MTO programs and new focus areas for the ERI such as new materials and devices, specialized functions circuits, tools to organize special functions and improve microelectronics security, and heterogenous integration. The full interview can be found [here](#).

VA Appoints First-Ever Artificial Intelligence Director

Nextgov reports on the Department of Veterans Affairs' first ever director of Artificial Intelligence (AI), Dr. Gil Alterovitz. Alterovitz will lead the Department's efforts to understand how AI technologies can analyze data on 9 million veterans to improve diagnoses and patient treatments, and potentially lead to new medical breakthroughs for veterans' healthcare. Before his new role, Dr. Alterovitz helped write the White House's recently updated AI strategy, and served on the Precision Medicine Task Force during the Obama Administration. Read more [here](#).

