On May 28, President Biden released his full President’s budget request for fiscal year (FY) 2022. As expected, most details in the budget request align with the priorities highlighted in the skinny budget request released earlier this year, with specific emphasis on addressing racial justice and equity, tackling climate change, making education accessible for all, and improving public health. Some notable highlights from the proposal include $46.1 billion for the Department of Energy (DOE), $10.35 billion for the National Science Foundation (NSF), $95 million for Advanced Research Projects Agency for Climate (ARPA-C), and the creation of a new $6.5 billion Advanced Research Projects Agency for Health (ARPA-H) within the National Institutes of Health (NIH). While this budget request is just an aspirational proposal, it will be the starting point for congressional negotiations that will take place over the remainder of the fiscal year. The House will likely move forward before the Senate to pass its appropriations package this summer, but a continuing resolution (CR) of some length is still likely before finalization.

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

Congressional Update: U.S. Innovation and Competition Act Passes Senate

On June 8, the Senate took a major step to advance the Endless Frontier Act, passing it as part of a giant package of innovation, trade, and research security legislation called the U.S. Innovation and Competition Act of 2021 (USICA). The bipartisan vote of 68-32 indicated strong support for investment in research and technology development as key planks for enhanced competitiveness and economic development. The core of the legislation was not changed during Senate consideration. EFA would prioritize ten key technology focus areas such as artificial intelligence, advanced computing, resilience, advanced communications, wireless research, energy innovation, and biotechnology. It would authorize $81 billion in funding over five years for the National Science Foundation (NSF), dramatically expand the EPSCoR program and create other capacity building programs to diversify the recipients of NSF funding, and create a new Technology and Innovation
Directorate that would fund research in the key technology areas, University Technology Centers, research testbeds, workforce development, and commercialization efforts. The Department of Energy Office of Science would also be authorized for $16.9 billion in funding towards the same focus areas. Additionally, new Regional Technology Hubs would be created at the Department of Commerce (DOC), and a raft of other provisions would impact NSF, DOC, and the National Aeronautics and Space Administration (NASA).

In addition to EFA, USICA combines provisions from several Senate committees, including Foreign Relations; Homeland Security and Governmental Affairs; Finance; Banking; Judiciary; and Health, Education, Labor, and Pensions. There are numerous provisions of relevance, including those that would:

- Provide $50 billion in emergency appropriations for the previously passed CHIPS for America Act to fund semiconductor research, development, and manufacturing;
- Give new authorities for the State Department to restrict visa access for certain international students, post-docs, or faculty with ties to foreign military institutions;
- Reduce the Section 117 reporting threshold for foreign gifts to $50,000 from the current $250,000;
- Authorize agency activities in bioengineering and engineering biology and create a new National Engineering Biology Research and Development Initiative;
- Require universities to provide copies of contracts and agreements with Chinese entities to NSF;
- Establish a Research Security and Policy Office at NSF responsible for coordinating all research security policy issues;
- Restrict the involvement of personnel in foreign talent recruitment programs;
- Creates a new requirement that would require institutions of higher education maintain a searchable database of gifts and contracts received by faculty from foreign sources.
- Set new open access requirements for scholarly publications resulting from federally-funded research;
- Give the Office of Management and Budget (OMB) new authority to oversee interagency research security coordination;
- Create a new state grant at the Department of Education to expand k-12 computer science education;
- Direct NSF and DOC to improve STEM education in rural communities;
- Direct the Committee on Foreign Investment in the United States (CFIUS) to develop a process for vetting large foreign gifts (over $1 million) to institutions of higher education and another provision that would block CFIUS from taking on this expanded mission;
- Create an international Technology Partnership Office at the Department of State;
- Reauthorize currently funded Department of Education Title VI international education programs; and
- Create a new Department of Education program to expand state support for dual course enrollment for high school students, strengthen articulation agreements among 2-year and 4-year institutions, and other measures to boost postsecondary STEM pathways.

Over six hundred amendments were offered over two-plus weeks of floor consideration. Of these, only a handful received a vote and most of those that did were defeated. Of note, the Senate rejected amendments that would have rolled back American Rescue Plan funding, added onerous new intelligence agency screening requirements of US researchers, banned fetal tissue research, required institutions to make new free speech certifications, and banned research on human-animal chimeras. Two amendments of interest were approved, one that would create a Department of Energy Foundation called the Foundation for Energy Security and Innovation and another that would add $3.5 billion in annual authorized funding for the Defense Advanced Research Projects Agency (DARPA) from fiscal year (FY) 2022 to FY 2026.
Forty-two bipartisan amendments covering a wide range of topics were rolled into a Manager’s Package that failed to achieve unanimous consent and these amendments were not incorporated into the Senate-passed bill. However, the Senate is likely to try to add them in conference. Of relevance, these included provisions to enable use of Pell grant funding for short-term workforce training programs, add further restrictions on federal funding for institutions hosting a Confucius Institute, create a critical mineral mining and recycling research program at DOE, create a Department of Homeland Security (DHS) grant program on US-Israel cybersecurity cooperation, set aside $174 million of the authorized NSF funding for radio astronomy upgrades, create a new NSF program to help R2 Historically Black Colleges and Universities (HBCUs) achieve R1 status, make patent changes, and create an interagency working group on the telecommunications industry workforce.

The legislation now heads to the House of Representatives, which is aiming to produce its own package of competitiveness legislation to be voted on as individual bills through July. The furthest along of these bills are the NSF for the Future Act and Department of Energy Science for the Future Act, which will both be considered by the full House Science, Space, and Technology Committee on June 15 with full House consideration shortly thereafter. House leadership has charged all committees of relevance to produce additional competitiveness legislation or counterparts to USICA provisions. These bills are expected to be a mix of partisan and bipartisan legislation depending on the committee. The House and Senate are likely to use an informal conference negotiation to produce a final package merging USICA and relevant House-passed bills. This final package could be passed on its own or ride major must-pass legislation like the surface transportation bill in September.

Issues for the potential conference to resolve will likely include research security provisions, balance between a new NSF directorate and funding for NSF base programs, NASA human space flight and exploration provisions, trade issues, and Senate provisions to dramatically enhance the size of the EPSCoR program. While these issues may be challenging to resolve, the bipartisan vote in the Senate indicates strong support for policies to majorly boost authorized US investment in innovation and competitiveness and create a new directorate at NSF that would focus on use-inspired research and technology translation.

Sources and Additional Information:
- Lewis-Burke’s previous summary of committee action on EFA and NSF for the Future can be found at https://old.lewis-burke.com/sites/default/files/nsf_policy_and_competitiveness_bills_advance_in_the_house_and_senate__may_2021.pdf
- Lewis-Burke’s previous summary of the introduced version of EFA can be found at https://old.lewis-burke.com/sites/default/files/congressional_update_-_endless_frontier_act_-_april_2021.pdf.
Congressional Update: The House Is Ready To Advance A Department of Energy Office of Science Reauthorization Bill With New Research Initiatives

On May 28, 2021, the House Science, Space, and Technology Committee introduced bipartisan legislation to grow core research, accelerate construction of world-class science facilities, and launch new research initiatives at the Department of Energy (DOE) Office of Science. Known as the DOE Science for the Future Act (H.R. 3593), the legislation was sponsored by Committee Chairwoman Eddie Bernice Johnson (D-TX), Ranking Member Frank Lucas (R-OK), Subcommittee Chairman Jamaal Bowman (D-NY), and Subcommittee Ranking Member Randy Weber (R-TX). The legislation has broad research community support. The House Science Committee will debate and vote on the bill the week of June 14 and then advance the bill for a vote by the full House. This bill would then be incorporated into a broader innovation package that could be negotiated with the Senate and associated DOE provisions in the Senate-passed U.S. Innovation and Competition Act.

The bill proposes significant boosts in funding for the DOE Office of Science over the next five years—from a $7 billion fiscal year (FY) 2021 enacted level to $11 billion by FY 2026. The biggest boost in funding would come in FY 2022—a proposed 24 percent increase—followed by seven percent annual growth each year over four years. While proposed funding levels in the bill would be subject to annual appropriations or stimulus funds, there is strong, bipartisan support and recognition of the important role the Office of Science plays as the largest federal funder of the physical sciences, maintaining and operating the largest collection of world-class scientific user facilities, building a highly trained and diverse STEM workforce, and leading efforts to advance emerging technologies like quantum information science and Artificial Intelligence.

The increased funding boosts activities in three major areas: new research initiatives, core research funding across all six major Office of Science programs, and accelerated construction of user facilities. The analysis below provides detailed information in each of these areas.

New Research Initiatives

The bill would launch new research and funding initiatives of interest to the research community, including:

<table>
<thead>
<tr>
<th>New Initiative</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Crosscutting</td>
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<tr>
<td>High Intensity Laser Research Initiative</td>
<td>The bill proposes $750 million over five years to advance petawatt-scale and high average power laser technologies necessary for future facility needs in discovery science and to advance energy technologies, as well as support a user network of academic and national laboratory high intensity laser facilities, known as LaserNetUS. This is consistent with recommendations from a National Academies study and the Brightest Light Initiative workshop report.</td>
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<tr>
<td>Midscale Instrumentation</td>
<td>The bill would establish a mid-scale instrumentation program to design, build, and deploy novel, state-of-the-art instruments ranging from $1 million to $20 million each that would significantly accelerate scientific breakthroughs at user facilities. This would be a partnership between research universities, national labs, and private industry.</td>
</tr>
</tbody>
</table>
### Earth and Environmental Science

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<thead>
<tr>
<th>Midscale Research Centers for Earth and Environmental Systems Science</th>
<th>DOE would have the authority to launch multi-disciplinary, multi-institutional research centers to address research and technology grand challenges associated with earth and environmental systems sciences. These would be modeled after Energy Frontier Research Centers, which are typically university-led centers funded at $2 million to $4 million per year over four years. Research topics would be aligned with the <a href="#">Earth and Environmental Systems Sciences Division Strategic Plan</a>. This would bridge the gap between single Principal Investigator awards and larger-scale Atmospheric Radiation Measurement projects.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coastal Zone Research Initiative</td>
<td>The focus would be on improving understanding of coastal ecosystems on earth and environmental systems modeling, including new models to analyze the ecological, biogeochemical, hydrological, and physical processes in coastal zones. A key feature would be geographically diverse field research sites to improve the quantity and quality of observational data in the Great Lakes region, the Pacific coast, the Atlantic coast, the Arctic, and the Gulf coast.</td>
</tr>
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</table>

### Advanced Scientific Computing Research

<table>
<thead>
<tr>
<th>Next Generation Computing Program</th>
<th>This program would expand DOE’s activities to include post-Moore’s law computing architectures, novel approaches to modeling and simulation, artificial intelligence and scientific machine learning, quantum computing, edge computing, extreme heterogeneity, and distributed high-performance computing. This is also consistent with recommendations from the Advisory Committee report <a href="#">Transitioning ASCR after ECP</a>.</th>
</tr>
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<tbody>
<tr>
<td>Architectural Research in Heterogeneous Computing Systems</td>
<td>This program would focus on expanding understanding of the potential for heterogeneous computing systems to deliver high performance, high efficiency computing for DOE missions and exploring the convergence of big data analytics, simulations, and artificial intelligence.</td>
</tr>
<tr>
<td>Energy Efficient Computing Program</td>
<td>This would expand DOE’s activities in advancing energy efficient computing and data center technologies for high performance computing, artificial intelligence, and scientific machine learning. This would support both fundamental research as well co-design centers between national labs, academia, and industry to design, build, and test new software and hardware.</td>
</tr>
<tr>
<td>Quantum Network Infrastructure R&amp;D Program</td>
<td>The bill proposes $500 million over the next five years to build out a quantum internet and expand funding for quantum networking and communications research. This</td>
</tr>
</tbody>
</table>
is consistent with DOE's strategy, “America’s Blueprint for the Quantum Internet.”

| Quantum User Expansion for Science and Technology (QUEST) | This program would establish public-private partnerships for quantum resource use by giving U.S. researchers access to quantum computing hardware and quantum computing clouds at national laboratories, research universities, and private industry. |

Core Research Funding
The bill would increase core research funding across all six Office of Science programs by seven percent each year over five years compared to the FY 2021 enacted funding level. Core research funding includes research support to universities and national laboratories, such as in materials sciences, chemical sciences, geosciences, biosciences, particle physics, nuclear physics, plasma and high energy density physics, mathematics, and computer science. This type of investment would reverse declines in research funding over the last several years and take into account inflationary pressures and declining purchasing power. The goal is to grow research funding to maintain U.S. leadership in science and technology, form the foundation for advancing critical industries of the future and major research initiatives, train the next-generation workforce, and fully utilize investments in world-class scientific infrastructure. Over the last several years, the Appropriations Committees prioritized funding for construction and operations of new research facilities.

While the legislation provides DOE broad discretion in core funding research directions, the bill does highlight research interests in artificial photosynthesis; energy storage; carbon capture, storage, and utilization including direct air capture; earth and environmental system science including subsurface biogeochemical research and climate and earth modeling; engineering biology; and applied mathematics and computer science to develop and support high performance computing.

Construction of New Science Facilities
The bill would accelerate construction and upgrades of major, large-scale scientific facilities. The proposed authorization levels are based on technically-driven schedules rather than funding-limited schedules to stay ahead of international competition. These projects are seen as necessary to maintain U.S. leadership and help attract and retain the best scientific talent. The bill prioritizes funding for the highest priority construction and upgrade projects in each of the six major Office of Science programs consistent with advisory committee recommendations. Major projects include:

- **Line Item Construction Project**
  - Light Sources and Neutron Sources
  - Spallation Neutron Source Second Target Station
  - Advanced Light Source Upgrade
  - Linac Coherent Light Source (LCLS) II High Energy Upgrade
  - Nanoscale Science Research Centers Recapitalization
  - Cryomodule Repair and Maintenance Facility
  - Fusion and High Energy Density Physics Facilities
  - ITER
  - Matter in Extreme Conditions Instrument Upgrade at LCLS
  - High Energy Physics Facilities
  - Long-Baseline Neutrino Facility / Deep Underground Neutrino Experiment
  - Proton Improvement Plan-II Accelerator Upgrade Project
The table below provides additional information on proposed funding for each major Office of Science program from FY 2022-FY 2026 and provides a comparison to the FY 2021 enacted level. Core research refers to research and development activities as well as operations and maintenance of experiments, instruments, and facilities. The table also includes proposed funding levels for major line item construction projects associated with each major Office of Science program.

<table>
<thead>
<tr>
<th>Office of Science Program</th>
<th>FY 2021 Enacted</th>
<th>FY 2022</th>
<th>FY 2023</th>
<th>FY 2024</th>
<th>FY 2025</th>
<th>FY 2026</th>
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<tbody>
<tr>
<td>Basic Energy Sciences</td>
<td>2,245</td>
<td>2,728</td>
<td>2,829</td>
<td>3,019</td>
<td>3,162</td>
<td>3,292</td>
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<tr>
<td>Core Research</td>
<td>2,084</td>
<td>2,230</td>
<td>2,386</td>
<td>2,553</td>
<td>2,732</td>
<td>2,923</td>
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<tr>
<td>Spallation Neutron Source Second Target Station</td>
<td>42</td>
<td>70</td>
<td>127</td>
<td>204</td>
<td>279</td>
<td>300</td>
</tr>
<tr>
<td>Advanced Light Source Upgrade</td>
<td>62</td>
<td>75</td>
<td>135</td>
<td>103</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>LCLS II High Energy Upgrade</td>
<td>54</td>
<td>107</td>
<td>126</td>
<td>115</td>
<td>89</td>
<td>49</td>
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<tr>
<td>Nanoscale Science Research Center Recapitalization Project</td>
<td>5</td>
<td>20</td>
<td>30</td>
<td>20</td>
<td>20</td>
<td>20</td>
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<tr>
<td>Cryomodule Repair and Maintenance Facility</td>
<td>1</td>
<td>19</td>
<td>25</td>
<td>25</td>
<td>17</td>
<td>20</td>
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<tr>
<td>Biological and Environmental Research</td>
<td>753</td>
<td>820</td>
<td>886</td>
<td>956</td>
<td>1,020</td>
<td>1,099</td>
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<tr>
<td>Advanced Scientific Computing Research</td>
<td>1,015</td>
<td>1,086</td>
<td>1,162</td>
<td>1,243</td>
<td>1,330</td>
<td>1,424</td>
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<tr>
<td>Computational Science Graduate Fellowship</td>
<td>10</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>26</td>
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<tr>
<td>Fusion Energy Research</td>
<td>672</td>
<td>1,003</td>
<td>1,096</td>
<td>1,129</td>
<td>1,149</td>
<td>1,243</td>
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<tr>
<td>Core Research</td>
<td>430</td>
<td>460</td>
<td>492</td>
<td>527</td>
<td>564</td>
<td>603</td>
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<tr>
<td>ITER construction</td>
<td>242</td>
<td>300</td>
<td>325</td>
<td>350</td>
<td>350</td>
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<tr>
<td>High Energy Physics</td>
<td>1,046</td>
<td>1,356</td>
<td>1,513</td>
<td>1,654</td>
<td>1,681</td>
<td>1,651</td>
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<tr>
<td>Core Research</td>
<td>867</td>
<td>928</td>
<td>993</td>
<td>1,062</td>
<td>1,136</td>
<td>1,216</td>
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<td>Long-Baseline Neutrino Facility /</td>
<td>173</td>
<td>200</td>
<td>325</td>
<td>400</td>
<td>375</td>
<td>250</td>
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<td>Budget Category</td>
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<td>2021</td>
<td>2022</td>
<td>2023</td>
<td>2024</td>
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<td>-----------------------------------------------------</td>
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<tr>
<td>Deep Underground Neutrino Experiment</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Proton Improvement Plan-II Accelerator Upgrade Project</td>
<td>79</td>
<td>191</td>
<td>150</td>
<td>120</td>
<td>120</td>
<td>100</td>
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<tr>
<td>Cosmic Microwave Background Stage 4</td>
<td>6</td>
<td>37</td>
<td>45</td>
<td>71</td>
<td>50</td>
<td>85</td>
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<tr>
<td>Nuclear Physics</td>
<td>713</td>
<td>861</td>
<td>960</td>
<td>1,106</td>
<td>1,210</td>
<td>1,273</td>
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<tr>
<td>Core Research</td>
<td>627</td>
<td>677</td>
<td>724</td>
<td>775</td>
<td>829</td>
<td>887</td>
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<tr>
<td>Electron-Ion Collider</td>
<td>30</td>
<td>101</td>
<td>155</td>
<td>250</td>
<td>300</td>
<td>305</td>
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<tr>
<td>Workforce Development for Teachers and Scientists</td>
<td>29</td>
<td>40</td>
<td>40</td>
<td>40</td>
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<tr>
<td>Scientific Laboratories Infrastructure</td>
<td>240</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
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<tr>
<td>Safety &amp; Security</td>
<td>121</td>
<td>129</td>
<td>139</td>
<td>148</td>
<td>159</td>
<td>170</td>
</tr>
<tr>
<td>Program Direction</td>
<td>192</td>
<td>205</td>
<td>220</td>
<td>235</td>
<td>252</td>
<td>269</td>
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<tr>
<td>Office of Science Total</td>
<td>7,026</td>
<td>8,729</td>
<td>9,344</td>
<td>10,032</td>
<td>10,504</td>
<td>10,961</td>
</tr>
</tbody>
</table>

Sources:
- The current draft of the DOE Science for the Future Act (H.R. 3593) and a two-page summary is available [here](#).
- A bipartisan press release introducing the legislation is available [here](#).

Funding Opportunities and Agency Updates

**Funding Opportunity: NSF Releases Solicitation for Predictive Intelligence for Pandemic Prevention (PIPP) Program**

The National Science Foundation (NSF) released a solicitation for a new program titled *Predictive Intelligence for Pandemic Prevention Phase I: Development Grants (PIPP Phase I)*. PIPP will support fundamental research and the development of new capabilities to address grand challenges in infectious disease pandemics through prediction and prevention. PIPP is supported by the Directorates for Biological Sciences (BIO), Computer Information Science and Engineering (CISE), Engineering (ENG), and Social, Behavioral, and Economic Sciences (SBE). This solicitation follows a series of NSF workshops that Lewis-Burke reported on previously, held earlier in 2021 to help define research challenges in this space. PIPP Phase I will support planning activities; NSF also plans to release a PIPP Phase II competition in 2023 to support new PIPP Centers.

PIPP Phase I planning awards should focus on articulating grand challenges associated with pandemic predictive intelligence; identifying “novel conceptual research and technology developments that aim to advance state-of-the-art forecasting, real-time monitoring, mitigation, and prevention of the spread of pathogens;” and building multidisciplinary teams. Proposals must incorporate integrated computational, biological, engineering, and social/behavioral approaches to address critical problems related to PIPP. NSF
encourages high-risk/high-payoff convergent research through PIPP Phase I, and implies that teams should include scientific, disciplinary, geographic, and organizational diversity.

The solicitation highlights that “potential multidisciplinary research areas include, but are not limited to, (a) pre-emergence studies that predict rare events in multiscale, complex, dynamical systems; (b) technology innovation in sensing and data collection for predictive intelligence; (c) exploring the interdependence of biological and behavioral mechanisms across scales from the molecular to the global; and (d) the relationship between human behavior and disease development and transmission.” The overarching aim of PIPP is to transform the ability to predict potential pandemic events, detect outbreaks early, and provide effective response to limit transmission to prevent future epidemics and pandemics.

Competitive proposals will include:
- An ambitious and forward-looking scientific grand challenge (GC) problem;
- A high-level view of the project;
- A research agenda;
- Diverse, multi-disciplinary, and potentially multi-organizational team; and
- A plan for scaling to center operations.

Proposals must also include a Project Management Plan and a single Microsoft PowerPoint slide summarizing the vision of the PIPP Development Grant proposal.

Due Dates: Full proposals are due by October 1, 2021.

Award Information: The anticipated total funding amount is $25 million. NSF anticipates making 25-30 awards, each up to $1 million total and up to 18 months in duration.

Eligibility: Institutions of higher education are eligible to submit proposals under this solicitation. Minority Serving Institutions are encouraged to apply. While there is no institutional limit, individuals may only serve as PI, co-PI on no more than one project team.

Sources and Additional Information:
- The PIPP program page is available at https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505908.
- Additional information on the NSF PIPP workshops is available at https://www.nsf.gov/events/event_summ.jsp?cntn_id=302023

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Funding Opportunity: ED Announces Education Innovation and Research Program (EIR) Competition
The U.S. Department of Education’s (ED) Office of Elementary and Secondary Education released, on June 7, a notice inviting applications (NIA) for the fiscal year (FY) 2021 Education Innovation and Research (EIR) for Mid-Phase and Expansion program grants. The EIR program supports efforts to create, implement, and evaluate innovative, evidence-based solutions to academic challenges facing high-need students. The EIR program has three tracks: Early-Phase, Mid-Phase, and Expansion. Each track requires a different level of prior evidence of effectiveness and level of scale. Higher education institutions may apply as part of a consortium led by a state education agency (SEA), local education agency (LEA), the Bureau of Indian Education (BIE), or as a non-profit organization recognized under 34 CFR 75.71. ED intends to issue a total of $180 million in awards with $8
million as the estimated average size of an award. The NIA for Early-Phase program grants will be released at a later date.

Proposals must demonstrate a strong evidence base that justifies exploration into the topic and focus on field-initiated innovations. The FY 2021 Mid-phase competition includes a special focus on K-12 STEM and computer science education and expanding opportunities in computer science for underserved populations such as minorities, girls, and youth from rural communities and low-income families. ED intends to award an estimated $32 million in funds for STEM projects and $32 million in funds for social and emotional learning (SEL) projects.

The NIA for the Mid-Phase program grant includes four absolute priorities, one competitive preference priority and two invitational priorities.

- **Absolute Priority 1:** Moderate Evidence
  - Projects supported by evidence that meets the conditions in the definition of “moderate evidence” by identifying two study citations reviewed against the What Works Clearinghouse (WWC).

- **Absolute Priority 2:** Field-Initiated Innovations – General
  - “Projects that are designed to create, develop, implement, replicate, or take to scale entrepreneurial, evidence-based, field-initiated innovations to improve student achievement and attainment for high-need students.”

- **Absolute Priority 3:** Field-Initiated Innovations-- Promoting STEM Education, With a Particular Focus on Computer Science
  - Projects that create, develop, implement, replicate, or take to scale entrepreneurial, innovations to improve student achievement for high need students in one or more of the following categories: science, technology, engineering, math, or computer science (as defined in the notice).
  - **Competitive Preference (up to 5 points):** Within Absolute Priority 3, projects designed to improve student achievement, expand access to, and participation in computer science coursework for underrepresented students such as racial or ethnic minorities, women, and low-income individuals.

- **Absolute Priority 4:** Field-Initiated Innovations — Fostering Knowledge and Promoting the Development of Skills That Prepare Students To Be Informed, Thoughtful, and Productive Individuals and Citizens
  - 1) Same requirement as Absolute Priority 2
  - 2) Projects that promote SEL skills that improve student performance and prepare them for employment and responsible citizenship.

- **Invitational Priority 1:** Innovative Approaches to Addressing the Impact of COVID-19 on Underserved Students and Educators
  - “Projects that are designed to address the needs of underserved students most impacted by COVID-19.”

- **Invitational Priority 2:** Promoting Equity and Adequacy in Student Access to Educational Resources and Opportunities
“Projects that are designed to promote equity and adequacy in access to critical resources in Pre-K-12 for underserved students.”

The NIA for the Expansion program grant includes two absolute priorities and the same two invitational priorities as stated in the Mid-Phase program grants NIA.

- **Absolute Priority 1**: Strong Evidence
  - Projects supported by evidence that meets the conditions in the definition of “strong evidence” by identifying four study citations reviewed against the What Works Clearinghouse (WWC).

- **Absolute Priority 2**: Field-Initiated Innovations – General
  - Same requirement as Absolute Priority 2 in the Mid-Phase program grant NIA.

**Due Dates**: Full proposals for both competitions are due **July 7, 2021**. Applicants are encouraged to submit a notice of intent to apply by **June 28, 2021**.

**Total Funding and Award Size**: ED intends to award a total of up to $180 million in EIR grants under the solicitation, funding up to $8 million for Mid-Phase projects and $15 million for Expansion projects over a period of up to 60 months. Between 10 and 15 program grants are expected to be awarded in the Mid-Phase track and between one and four program grants are expected to be awarded in the Expansion track.

**Eligibility and Limitations**: SEAs, LEAs, non-profit organizations, and BIE are eligible to apply. However, an SEA, LEA, or BIE may apply in partnership with other entities, including higher education institutions. The grant requires cost sharing by recipients of at least 10 percent of the award amount.

**Sources and Additional Background**:  
- The official NIA for the Mid-Phase grants is available [here](#).
- The official NIA for the Expansion grants is available [here](#).
- More information regarding the FY 2021 competition, including the full solicitation for each funding track and informational materials, is available [here](#).
- The EIR program website can be found [here](#).

**Funding Opportunity: FY 2022 IES NCER and NCSER Grant Competitions Announced**
The U.S. Department of Education’s (ED) Institute of Education Sciences (IES) has announced its fiscal year (FY) 2022 competitions for education research and special education research. The funding notice explains that these awards will expand knowledge of “(1) developmental and school readiness outcomes for infants and toddlers with or at risk for a disability, (2) education outcomes for all learners from early childhood education through postsecondary and adult education, and (3) employment and wage outcomes when relevant (such as for those engaged in career and technical, postsecondary, or adult education).” The research programs will be administered through the Institute’s major grant-awarding centers, the National Center for Education Research (NCER) and the National Center for Special Education Research (NCSER).

IES plans to host seven competitions in FY 2022, with funding support from both the already enacted American Rescue Plan (ARP) COVID relief bill and the anticipated FY 2022 appropriations for IES. NCER will have many of
the usual topic areas in education research, including a continuation of research topics in career and technical education and civics education and social studies. NCSER’s competitions will be much different this year focusing exclusively on COVID-19 related special education research. NCER is also interested in COVID-19 related proposals but under its usual research topic areas, advising applicants to specifically notate a COVID focus within proposals, if relevant. NCER will also run a competition for early career faculty mentoring at Minority Serving Institutions. Details on the competitions are outlined below.

NCER will administer five competitions for grants pertaining to specific topic areas. Competitions and topics are listed below:

- **Education Research** – The education research competition invites applications that address one of the following topic areas:
  - Career and Technical Education
  - Civics Education and Social Studies
  - Cognition and Student Learning
  - Early Learning Programs and Policies
  - Effective Instruction
  - English Learners
  - Improving Education Systems
  - Postsecondary and Adult Education
  - Literacy
  - Science, Technology, Engineering, and Mathematics (STEM) Education
  - Social and Behavioral Context for Academic Learning

- **Education Research Training** – Applications for this competition must address one of three topics: Early Career Mentoring Program for Faculty at Minority-Serving Institutions, Postdoctoral Research Training Program in the Education Sciences, or Methods Training for Education Researchers.

- **Systematic Replication in Education** – Applications for this competition must address identifying what works in education through systematic replication.

- **Statistical and Research Methodology in Education** - Applications for this competition must address one of two topics: Regular Grants to support the development of methods, toolkits, guidelines, and syntheses or Early Career Grants.

- **Using Longitudinal Data to Support State Education Recovery Policymaking** – Applications must address State use of education longitudinal data systems as states and local education agencies reengage their students after COVID-19 disruptions.

NCER will administer two competitions in FY 2022 both related to Research to Accelerate Pandemic Recovery in Special Education. There will be no additional competitions held in FY 2022, but if additional funding is available for special education research from Congress, NCER will fund down the slate of FY 2021 proposals.

- **Pandemic Recovery in Special Education Research** – NCER applications should “address a pandemic related problem, issue, program, policy, or practice that is important to a State or local education agency, has the potential to improve outcomes significantly and rapidly for students with or at risk for disabilities, and will provide actionable and timely results to districts and schools.”

**Application Release Dates:** Applications for Statistical and Research Methodology, Using Longitudinal Data to Support State Education Recovery Policymaking, and Research to Accelerate Pandemic Recovery in Special Education competitions will become available by **June 15, 2021**. Applications for Education Research, Research Training Programs, and Systematic Replication competitions will become available by **June 30, 2021**.
Proposal Deadlines: Statistical and Research Methodology and Longitudinal Data to Support State Education Recovery applications are due **August 12, 2021**, while Education Research, Research Training, and Systematic Replication applications are due **September 9, 2021**. NCSE’s two Research to Accelerate Pandemic Recovery in Special Education application deadlines are **August 2, 2021** and **September 9, 2021**.

Total Funding and Award Size: The project period for Education Research, Research Training, and Systematic Replication competitions is up to five years, with approximate award sizes ranging from $100,000 to $900,000. The project period for Statistical Methodology and Using Longitudinal Data to Support State Education Recovery competitions is up to three years, and approximate award sizes ranging from $40,000 to around $300,000. The project period for the two Research to Accelerate Pandemic Recovery in Special Education is up to four years, and award sizes ranging from $500,000 to either $750,000 or $1,000,000.

Eligibility: Eligible applicants include, but are not limited to, nonprofit and for-profit organizations, public and private agencies, institutions of higher education, and state education entities. For the Early Career Mentoring Program, eligible entities are Department of Education designated Minority-Serving Institutions.

Sources and Additional Information:
- The Federal Register notice announcing the NCER and NCSER competitions is available at https://www.federalregister.gov/documents/2021/06/10/2021-12173/applications-for-new-awards-education-research-and-special-education-research-grant-programs.
- Later this month, the official Request for Applications for each competition and additional topic details are expected to be linked at https://ies.ed.gov/funding/.

Agency Update: Status and Upcoming Competition for DOE Energy Frontier Research Centers
In Fall 2021, the Department of Energy (DOE) plans to release a $100 million funding opportunity announcement to compete Energy Frontier Research Centers (EFRC) and fund 30 to 40 new or renewed centers. EFRCs are one of DOE’s leading center-level competitions and well-suited for research universities. Started in 2009, the EFRC program focuses on energy-relevant, basic research with a scope and complexity beyond what is possible in standard single-investigator or small-group awards. These multi-investigator, multi-disciplinary, multi-institutional centers accelerate scientific discovery and tackle transformative energy grand challenges in materials sciences, chemical sciences, geosciences, and biosciences—the top priorities of the Basic Energy Science (BES) program within the Office of Science which funds these centers.

While DOE has not yet finalized FY 2022 EFRC topic areas, the most likely topic areas include transformative manufacturing; clean energy research in direct air capture, hydrogen, solar, and energy storage; cryogenic electron microscopy for the physical sciences; microelectronics; and chemical upcycling of polymers.