Congressional and Administration Updates

Congressional Update: Senate Holds Confirmation Hearing for Dr. Eric Lander, Biden Nominee for OSTP Director

On April 29, the Senate Committee on Commerce, Science, and Transportation held a hearing on the nomination of Dr. Eric Lander to the position of Director of the White House Office of Science and Technology Policy (OSTP). Dr. Lander was a principal leader of the Human Genome Project and from 2004 until January 2021 was the President and Founding Director of the Broad Institute of MIT and Harvard. He also co-chaired the President’s Council of Advisors on Science and Technology (PCAST) from 2009 to 2017 under former President Barack Obama. He currently serves as the Science Adviser to the President, a position that does not require Senate confirmation.

Dr. Lander’s responses to Senators’ questions offered insight into how the Biden Administration would implement an ambitious research and development agenda. When asked by Senator Roy Blunt (R-MO) about the Administration’s proposal to create a new Advanced Research Projects Agency for Health (ARPA-H) within the National Institutes of Health (NIH), Dr. Lander stated that establishing ARPA-H as a separate entity outside the NIH would likely result in competition and duplication. Dr. Lander did not provide many additional details on the scope or approach of the proposed ARPA-H, other than indicating that ARPA-H would help tackle...
market failures in the development of treatments and cures for major diseases like cancer and Alzheimer’s Disease.

Dr. Lander also expressed the need to strengthen all aspects of the American innovation ecosystem to ensure that science can solve some of the country’s most challenging problems. On several occasions, Senators asked for his comments on the Endless Frontier Act (EFA) currently making its way through Congress. Conversations on EFA and the need to grow funding for the National Science Foundation (NSF) and expand its role were generally bipartisan. However, the most notable exchange occurred between Senator Ben Ray Luján (D-NM) and Dr. Lander. Senator Luján, whose constituents include the Department of Energy’s (DOE) Los Alamos and Sandia National Laboratories, received Dr. Lander’s support for expanding National Laboratories’ ability participate in the NSF technology focus areas as articulated by EFA. EFA does not envision a significant role for DOE’s National Laboratories as currently written.

Dr. Lander would be the last of President Biden’s cabinet to be confirmed. The delay is primarily due to the process of extricating himself from potential conflicts of interests. In addition to directing the Broad Institute, Dr. Lander was also a prominent fundraiser for its activities. The latter prompted scrutiny by senators during Thursday’s hearing and were compounded by reporting of potential ties to Jeffrey Epstein, the convicted sex offender and a prolific donor. Dr. Lander responded that he only met Epstein on two brief occasions and did not have any other meaningful interactions. Senator Tammy Duckworth (D-IL) also criticized Dr. Lander for downplaying the accomplishments of women scientists and referenced the Broad Institute’s legal battle with Dr. Jennifer Doudna and her lab at the University of California, Berkeley. The Broad Institute sued Dr. Doudna and the University in a dispute over the intellectual property rights stemming from development of the CRISPR-Cas9 gene editing technology.

It’s unlikely these concerns will jeopardize his confirmation, but they may delay it. Resolving any Senator’s outstanding concerns could take weeks, followed by a vote of the full Senate at some point in the subsequent weeks or months.

Additional Resources:
- A link to the Committee notice of Dr. Lander’s hearing and a recording of the webcast is at https://www.commerce.senate.gov/2021/4/nomination-hearing/cfae127c-0c1f-4e0d-8492-32ba7671c3c9.

Policy Update: Biden Administration Announces $1.8 Trillion American Families Plan
On April 28, President Biden announced a $1.8 trillion proposal, the American Families Plan (the Plan), to invest in childcare, education, and healthcare. President Biden will highlight the proposal in his formal address to a joint session of Congress this evening. The American Families Plan outlines massive investments in preschool, child nutrition, community colleges, Pell Grants, and healthcare spending. This Plan builds upon the President’s American Jobs Plan announced in late March, which focused on infrastructure, climate action, workforce development, and global competitiveness. Key highlights of note for academic and healthcare communities in the American Families Plan include:
- $109 billion to make two years of community college education free
- $80 billion to increase the maximum Pell Grant by $1,400
- $62 billion for retention and completion programs at colleges that serve large numbers of low-income students

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• $39 billion to subsidize tuition at Historically Black Colleges and Universities and other minority-serving institutions
• $200 billion to expand the Affordable Care Act’s premium tax credits
• Significant tax changes for high-earners to generate $1.5 trillion to partially offset the Plan costs

The likelihood of passing this proposal, as well as the earlier infrastructure proposal remains uncertain. Similar to the American Jobs Plan, Congress will now have to translate the American Families Plan into legislation, filling in specific details on how to implement the broad outline. While some Democrats have long pushed for universal pre-K and free college, the American Families Plan is already incurring strong Republican pushback with questions being raised on the trillions already spent through the various COVID aid packages this past year. With a bipartisan deal unlikely, congressional Democratic leadership will need to decide whether to use the policy-limited, budget reconciliation process, requiring only a simple majority, to move proposals under the Plan.

The following analysis offers further details on the American Families Plan’s proposals of interest to the education and healthcare communities.

Higher Education
The American Families Plan proposes historic investments in higher education via support for free community college, investments in Historically Black Colleges and Universities (HBCUs), Tribal Colleges and Universities (TCUs), and institutions such as Hispanic-serving institutions (HSIs), Asian American and Native American Pacific Islander-serving institutions (AANAPISIs), and other minority-serving institutions (MSIs), and investments in teacher training, among other proposed funding increases.

Highlights of the Plan include:
• **$109 billion for two years of free community college**  
  o This would support first-time students, DREAMers, and workers looking to reskill. The proposal notes that students would be able to use the benefit over three years and, if needed, up to four years.
• **$80 billion investment in Pell Grants**  
  o This proposal would support a $1,400 increase to the maximum Pell Grant award. The Plan notes that this is “a down payment on President Biden’s commitment to double the maximum award.” DREAMers would also be eligible for Pell Grants.
• **$62 billion to invest in community colleges and institutions that serve students from disadvantaged communities**  
  o Funding via grants would be provided to States, territories, and Tribes to provide funding to colleges that serve high numbers of low-income students and adopt “innovative, proven solutions for student success, including wraparound services ranging from childcare and mental health services to faculty and peer mentoring; emergency basic needs grants; practices that recruit and retain diverse faculty; transfer agreements between colleges; and evidence-based remediation programs.”
• **$46 billion to support investment in HBCUs, TCUs, and MSIs**  
  o Within this proposal, $39 billion is proposed to create a program that provides two years of subsidized tuition for students from families earning less than $125,000 enrolled in a four-year HBCU, TCU, or MSI. $5 billion is proposed to expand existing institutional aid grants to HBCUs, TCUs, and MSIs, which could be used to create or expand educational programs in high-
demand fields. $2 billion is proposed to support building a pipeline of skilled health care workers with graduate degrees.

- **$9 billion to train, equip, and diversify American teachers**
  - This would support increasing scholarships for future teachers from $4,000 to $8,000 per year. $2.8 billion would also be provided for “Grow Your Own programs” and year-long, paid teacher residency programs. Within that proposal, $400 million would be for teacher preparation at HBCUs, TCUs, and MSIs and $900 million for the development of special education teachers. The Plan also calls for $1.6 billion to provide educators at schools with a significant portion of low-income students or significant teacher shortages with opportunities to obtain additional certifications in high-demand areas. This funding would go through the states, and would be available until expended. $2 billion is proposed to support programs that leverage teachers as leaders, such as high-quality mentorship programs for new teachers and teachers of color.

**Early Childhood Education and Childcare**
The Plan calls for a $225 billion investment in free universal preschool for all three and four year-olds, support for early childhood educator training, professional development, and increases in minimum pay. The Plan also proposes to make the Child and Dependent Care Tax Credit permanent and extend for five years the increase to the Child Tax Credit allowed under the American Rescue Plan.

**Healthcare**
The American Families Plan calls for a large expansion of the Affordable Care Act’s premium tax credits. The Plan calls for making permanent the temporary increase in the premium tax credits from the American Rescue Plan, for use in the healthcare marketplace. The Plan also calls for changes to Medicare’s prescription drug program, and assistance to states that have yet to expand Medicaid in order to do so. It also proposes the creation of a national comprehensive paid family and medical leave program.

Additional healthcare highlights include:

- **$200 billion to expand the Affordable Care Act’s premium tax credits**
  - The American Families Plan calls for making permanent the temporary increase in premium tax credits for the marketplace. Under the American Rescue Plan, individuals and families are eligible for a temporary increase in premium tax credits for the 2021 and 2022 plan years. Out of pocket costs towards premiums were capped at 8.5 percent of household income for a benchmark plan or a less expensive plan. Making this policy from the American Rescue Plan permanent is estimated to cost $200 billion.

- **Medicare drug price savings**
  - According to the White House, President Biden would allow Medicare to negotiate prescription drug prices and provide an option for individuals to enroll in Medicare at age 60.

- **Address the Medicaid coverage gap;**
  - The American Families Plan calls for helping states close the Medicaid coverage gap. Currently there are 12 states that have yet to expand Medicaid.

**Nutrition**
The Plan includes $45 billion to tackle nutrition insecurity, an issue which disproportionately affects low-income communities and families of color.

Highlights of the Plan include:
• **$25 billion for the expansion of the summer Electronic Benefit Transfer (EBT) program**
  - The Summer Pandemic-EBT was created in March of 2020 to help provide food to children who missed meals due to school closures resulting from the COVID-19 pandemic. The Plan would make the summer EBT program permanent and would be available to over 29 million eligible children.

• **$17 billion for the expansion of health school meals in high-poverty school districts**
  - The Plan proposes changing the reimbursement rates and lowering the eligibility thresholds for schools using the Community Eligibility Provision (CEP), a non-pricing meal service option for schools and school districts in low-income areas.

• **$1 billion for a healthy food demonstration program**
  - The Plan proposes a demonstration program to support schools that are expanding healthy food offerings to children that exceed current school meal standards.

• **Facilitating re-entry into the Supplemental Nutrition Assistance Program (SNAP) for formerly incarcerated individuals**
  - Currently, SNAP eligibility for formerly incarcerated individuals is determined on a state-by-state basis.

**Tax Policy**

The *American Families Plan* includes approximately $1.5 trillion in tax increases over ten years. According to the Plan, a number of tax advantages in the code favoring high-income earners would be closed, and high-income earners will be subject to greater scrutiny by the IRS. With the American Jobs Plan, which included corporate tax reform, the White House believes all spending would be fully paid for over the next 15 years.

Highlights of the Plan include:

• **Rollback of the 2017 tax cut for high-income earners**
  - The American Families Plan will roll back the 2017 tax cut and return the top income tax rate to 39.6 percent, from the current 37 percent.

• **Greater tax enforcement**
  - The Plan calls for an increased investment in the IRS, adding resources for the agency to ensure households with the highest incomes are not avoiding paying tax. The plan also calls for additional resources to enforce the code on large corporations, businesses, and estates. According to the White House, this plan would raise $700 billion over 10 years.

• **Changes to capital gains tax and step-up basis**
  - The Plan calls for equalizing the payment of tax between investment income and wages by requiring households with earnings over $1 million annually to pay 39.6 percent on all income.
  - The *American Families Plan* calls for closing this step-up basis loophole, for inherited assets, for gains in excess of $1 million or $2.5 million per couple when combined with existing real estate exemptions, and ensuring the increased gains are taxed if the asset is not donated to charity.

• **Close the carried interest loophole**
  - The Plan calls on Congress to close the carried interest loophole, which is primarily used by private equity partners. Under current law, individuals who take advantage of this loophole, by earning income from managing other people’s money, are taxed at the lower capital gains rate rather than the ordinary income tax rate.

• **Changes to the Medicare tax for high-earners**
  - Under the *Affordable Care Act*, individuals with incomes above $200,000 and couples with incomes above $250,000 pay the 2.9 percent combined employee and employer Medicare payroll tax rate, plus a 0.9 percent high-earner Medicare tax rate, for a total of 3.8 percent.
However, many high-income households have worked to modify their adjusted gross income to avoid the increased tax rate. The American Families Plan calls for applying the 3.8 percent rate to all individuals earning $400,000 or more.

Sources and Additional Information:
- The White House statement on the American Families Plan can be found at https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/28/fact-sheet-the-american-families-plan/

Funding Opportunities and Agency Updates

Earth Day 2021 Snapshot

Summary
In honor of Earth Day, President Biden, members of the Cabinet, and members of Congress re-affirmed their commitment to promoting environmental protection, addressing climate change, and utilizing science as a critical tool to inform policy action. To this end, President Biden hosted the Leaders Summit on Climate while both Democratic and Republican Members of Congress introduced new environment and climate-focused legislation. The Biden Administration also plans to significantly grow federal research and development investments in clean energy, climate, and environment programs, and will be seeking both formal and informal input from the research community to shape those future investments. This document provides a summary and analysis of the most relevant climate and environment initiatives and legislation of interest to the research community.

Leaders Summit on Climate
President Biden and members of his Cabinet hosted the Leaders Summit on Climate on April 22-23, 2021. The goal of the Summit was to increase global ambitions to reduce greenhouse gas (GHG) emissions leading into this November’s negotiations under the UN Framework Convention on Climate Change (COP-26) in Glasgow, UK. The Summit not only convened the world’s 17 largest economies and GHG emitters, as many previous administrations have done, but for the first time also included leaders from many other countries who are especially vulnerable to the impacts of climate change. Several countries made significant announcements during the Summit. On Friday afternoon, the White House released a fact sheet containing a list of U.S. announcements and pledges delivered during the Summit. Of most relevance to the scientific community:

1) To enable the U.S. to reduce GHG emissions by at least 50-52% relative to 2005 levels by 2030, as outlined in the new U.S. Nationally Determined Contribution, the Biden Administration supports significant increases in research and development (R&D) spending over the next four years, beginning with its fiscal year 2022 budget request. However, agency officials have not yet defined priorities and performance targets for new research programs designed to reduce emissions in the transportation, electricity, land, building, and industrial sectors. To inform domestic R&D priorities to help achieve the new climate mitigation targets, agency officials are likely to seek formal and informal feedback from thought leaders in academia, the private sector, and civil society over the next several months. Many of the announcements shared during the Leaders Summit on Climate also initiate new domestic partnerships to establish grant programs or “moonshot-style ventures” that will bring together academics, researchers at national labs, and/or private industry partners to target emission
reductions in the electricity and transportation sectors. Details on funding levels and specific research objectives will be developed and will reflect stakeholder feedback.

2) There may be new international collaboration opportunities focused on climate-related research, development, and deployment (RD&D) in areas of strategic significance to the climate negotiations. These collaborations will utilize S&T to increase U.S. credibility as a leader in both climate diplomacy as well as in scientific technological innovation – and may result in opportunities for academic researchers to collaborate with U.S. agencies and international research partners. During the Summit, the U.S. announced several new collaborative initiatives:

- A partnership with the United Arab Emirates to launch an R&D program to lower emissions in the agriculture sector;
- A cooperative forum between Canada, Norway, Qatar, and Saudi Arabia, representing 40 percent of global oil and gas production, to support the RD&D of clean-energy and carbon capture and storage technologies, among other activities;
- A partnership with India to, among other things, demonstrate and scale up innovative clean technologies needed to reduce GHG emissions across sectors including industry, transportation, power, and buildings.

3) There will be further opportunities to engage on climate adaptation and resilience focused research, as these were elevated as domestic and international priorities during the Summit. Domestically, adaptation and resilience is a growing area of interest, which will encompass consideration of environmental justice and climate change-induced health disparities in addition to topics such as climate resilient agriculture, water management, resilient infrastructure, nature-based solutions. The U.S. announced its goal of tripling contributions to international adaptation finance by 2024. Further details of how the U.S. will invest in international adaptation, which may include limited funds for development-focused adaptation research, are likely to be defined as a part of the U.S. Agency for International Development’s Climate Change Strategy, expected to be released in November 2021, and consistent with the International Climate Finance Strategy.

4) To retain leadership in scientific research pertaining to climate-related technologies and innovation, the Biden Administration may consider utilizing multilateral platforms to spearhead joint funding of climate change-focused research and development. To date, international research collaborations have been primarily supported by research agencies on an hoc basis, with each side of collaboration funded by each domestic science agency. There is growing interest in supporting more coordinated and consistent international engagement efforts to maintain U.S. leadership in the development, manufacturing, and supply chain of products that advance the climate agenda. Driving this renewed interest is that China outspent the U.S. by nearly 2:1 on energy transition-related investments between 2010 and 2020 – and its R&D spending outpaced the U.S. in 2020. If the U.S. and other developed country partners wish to compete, the Biden Administration is exploring whether coordinated R&D activities, such as through the G-7 or the Organisation for Economic Co-operation and Development (OECD), can outcompete China.

Congressional Actions and Announcements
Congress remained busy during “Earth Week” with Democrats launching several new climate-focused bills and re-introducing several others with the hopes that the legislation might be more successful under the Biden Administration. While most of the focus was on the Leaders Summit on Climate Change, Members of Congress are focused on legislation that could advance President Biden’s $2.5 billion American Jobs Plan which includes support for energy and climate research, resilient infrastructure, and the creation of a Civilian Climate Corps.
In response, Republican leaders announced their $568 billion infrastructure plan on April 22 that would support a narrower list of projects, such as traditional infrastructure projects like roads and bridges and water and wastewater infrastructure, and would offset those costs with unspecified user fees. In addition, Republican Leader Kevin McCarthy (R-CA) launched the party’s climate plan early in the week focused on the energy sector, innovation, and conservation. The plan, called the Energy Innovation Agenda, consists of a series of bills which would support renewable energy infrastructure and natural gas, new strategies for farmers to help reduce emissions, and several bills focused on forestry and wildfire prevention. This package shows the growing number of Republican members who are looking for pragmatic responses to constituent demands for action on climate change.

Across the aisle, Democrats used the symbolism of Earth Day to introduce several messaging bills for climate action with varying levels of impact and buy-in from other members of Congress and the White House. One bipartisan bill introduced by Senate Agriculture Committee Chair, Debbie Stabenow (D-MI), is the Growing Climate Solutions Act. The bill has over 30 co-sponsors including Agriculture Committee Ranking Member John Bozeman and would create a carbon credit system intended to reward farmers for changing their farming practices to those with ecological and environmental benefits. It would also establish an advisory panel of scientists and economic experts to oversee its creation and management. The bill’s strong showing among both Democrats and Republicans indicates that agriculture is likely to be a place for common ground in climate policy. The more progressive wing of the Democratic party, however, is continuing to call for more as Rep. Alexandria Ocasio Cortez (D-NY) and Senator Ed Markey (D-MA) re-introduced the Green New Deal resolution and called for the Biden Administration to make larger and more urgent moves to combat the climate crisis with the backdrop of Earth Week and ahead of the Leaders Summit on Climate.

Congress is unlikely to pass climate bills as stand-alone legislation. Instead, many of the proposed initiatives are likely to be adopted in an infrastructure package or annual appropriations bills. Those bills that have bipartisan support and can advance through Committees of jurisdiction are more likely to influence future negotiations and be included in future spending packages.

Conclusion
Both executive and Congressional actions present opportunities for shaping future environment and climate priorities. The Biden Administration has laid out ambitious plans to achieve new carbon emission reduction targets, including through an increase in funding for climate-focused research, development, and innovation, and to support both international and domestic partnerships. Nonetheless, the Biden Administration’s success in addressing climate change hinges on the ability of Congress to appropriate funds and pass authorizing legislation that will be needed to transform the U.S. economy and work with international partners.

Funding Opportunity: NSF Releases Solicitation for Resilient and Intelligent NextG Systems (RINGS)
The National Science Foundation (NSF) announced a new program in partnership with other federal agencies and industry partners titled, the Resilient and Intelligent Next-Generation Systems (RINGS) program. The RINGS program seeks to accelerate research in areas that will have significant impact on Next Generation (NextG) wireless and mobile communication, networking, sensing, and computing systems, along with global-scale services, with a focus on greatly improving the resiliency of such networked systems among other performance metrics. In this program, the NSF Directorates for Computer and Information Science and Engineering (CISE) and Engineering (ENG) are partnering with the Office of the Under Secretary of Defense for Research and Engineering (OUSD R&D) in the Department of Defense (DOD), the National Institute of
Standards and Technology (NIST), as well as industry partners including Apple, Ericsson, Google, IBM, Intel, Microsoft, Nokia, Qualcomm Technologies, and VMware.

The goal of the RINGS program is to “approach the design of NextG network systems from a different perspective by considering resilience as the primary consideration while aiming for superior performance.” NSF highlights that future networks and systems “will provide key support to societal priorities such as education, transportation, public health and safety, defense and associated critical infrastructure.” The RINGS program complements the current NSF research portfolio that supports basic research of individual emerging topics, including artificial intelligence (AI)/machine learning (ML), edge computing, radio communications, innovative transmit/receive technologies, and effective spectrum utilization.

Proposals submitted to this program must address one or more “research vectors (RV)” from each of the two groups listed below. Each proposal should clearly identify the RVs chosen and proposals are strongly encouraged to include cross-layer collaboration to meet the stated goals. The program consists of two groups which include, Resilient Network Systems (Group A) and Enabling Technologies (Group B) and proposals must clearly describe the synergy between RVs chosen in Group A and Group B. The RINGS program will support collaborative proposal teams.

Group A: Resilient Network Systems
- A1: Full Stack Security
- A2: Network Intelligence/Adaptability
- A3: Autonomy
- A4: Exploratory Resiliency Components

Group B: Enabling Technologies
- B1: Radio Frequency (RF) and Mixed Signal Circuits, Antennas and Components
- B2: Novel spectrum management technologies
- B3: Scalable device-to-edge-to-cloud continuum
- B4: Merging digital/physical/virtual worlds

The RINGS program is NSF’s largest public-private partnership solicitation. The companies listed in the solicitation will provide annual contributions to NSF to support proposals awarded through this program and will not be involved in the review process. All questions regarding industry involvement should be directed to NSF staff and not the company. Proposals may include cloud computing resources, which can be obtained through an external cloud access entity (CloudBank) supported by NSF’s Enabling Access to Cloud Computing Resources for CISE Research and Education (Cloud Access) program. Proposals may also use publicly available wireless- and cloud-related resources, such as wireless testbeds, to evaluate or demonstrate their research.

In addition to the standard NSF merit review criteria: Intellectual Merit and Broader Impacts, this solicitation will include the following additional review criteria:
1. “What is the potential for the project to advance impactful research in resilient NextG networks?
2. How effectively does the proposed research ensure synergy between the Resiliency RVs (Group A) and Enabling Technology RVs (Group B)
3. Does the proposed research contain the required collaborative teaming to address resiliency challenges across the chosen enabling technologies?”

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Due Dates: Full proposals are due by July 29, 2021.

Webinar: NSF will hold a webinar on this solicitation in May – date is yet to be announced.

Award Information: The anticipated total funding amount is $37.5 million to $40 million. NSF anticipates making 36-48 awards, each up to $1 million total and up to three years in duration.

Eligibility: Institutions of higher education are eligible to submit proposals under this solicitation. While there is no institutional limit, individuals may only serve as PI, co-PI, and/or senior personnel on no more than two proposals.

Sources and Additional Information:
- Additional information on Advanced Wireless Research at NSF is available at https://www.nsf.gov/cise/advancedwireless/.

[back to the top]