



Science for the Future Campaign Toolkit

Investing in Scientific Advancement

The Environmental Justice Coalition

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Table of Contents

Section I. Background	3
Section II. Summary of the Science for the Future Act of 2021	4
Section III. Details of the Science for the Future Act of 2021	5 - 6
Section IV. Templates to Contact Legislators	7 - 8
Section V. Other Ways to Support	9 - 11
Section VI. Sources	12

Background On Science in America's Eyes

According to the National Science Foundation's Science and Engineering Indicators 2020 report, the United States continues to perform the largest share of global research and development. The federal government spends \$36.9 billion on research in science, technology, engineering and mathematics (STEM) as of 2015. Today we see funding dwindling, but the U.S. remains a powerhouse in scientific and technological advancement (National Science Foundation, 2018). STEM research plays a necessary role in developing new technologies to improve the human condition. In America, however, there are certain ideologies which sow mistrust in science. Anthony Fauci, Director of the National Institute of Allergy and Infectious Diseases, said “science still holds a place of esteem and authority in the wider culture, it has become a proxy for those who want to lash out against authority figures,” addressing a growing trend in anti-science views. To put it into perspective, six-in-ten (61%) U.S. adults believe that scientists should take an active role in policy debates about scientific issues while about four-in-ten (39%) say, instead, that scientists should focus on establishing sound scientific facts and stay out of such debates (Funk, 2020). There is a growing stigma around the integrity of research and advancements being made in the STEM world, which is causing controversy over innovation efforts. For example, about six-in-ten Americans (57%) said that genetic engineering of animals to grow organs or tissues for humans needing a transplant would be appropriate while four-in-ten (41%) said it would be taking technology too far. Still scientists continue to discover all that the sciences have to offer. Here are a few recent breakthroughs made:

- Food security technologies
- Soil preservation resources
- Particle detector upgrades
- Quantum education resources
- Computing system advancements

The distrust in STEM research and findings have resulted in a number of U.S. adults believing that climate change and global warming are hoaxes despite the mounting scientific evidence saying otherwise. Such stigma prevents legislators from realizing the need to invest in STEM research to aid in the creation of evidence-based scientific policies in fields such as public health, climate action, and energy. This toolkit will help explain and contextualize the Science for the Future Act of 2021 and provide resources for you to help it get passed.

Summary On DOE Science for the Future Act

The Department of Energy Science (DOE) for the Future Act of 2021 provides a detailed outline for increasing the number of as well as diversity, equity, and inclusion of highly skilled science, technology, engineering, and mathematics (STEM) professionals working in the DOE. The bill supports specified research and development activities of the DOE Office of Science.

The bill establishes various programs, including:

- a **basic energy sciences research** and development program;
- a **biological systems science** and **climate** and **environmental science** research and development program;
- **earth** and **environmental systems science** research;
- a **coastal zone** research initiative;
- a **Quantum User Expansion for Science and Technology** program or QUEST program;
- a collaborative research and development program of **fusion energy technologies**;
- a research program on the fundamental constituents of **matter and energy** and the nature of **space and time**;
- a **high energy physics** research program;
- research activities on the nature of the **primary contents of the universe**, including the nature of **dark energy and dark matter**;
- a research program to discover and understand various forms of **nuclear matter**; and
- a **high intensity laser** research initiative.

Details of Science for the Future Act of 2021

The Science for the Future Act was introduced by Representative Eddie Bernice Johnson (D-TX) on May 28, 2021 in the 117th congress as H.R.3593. Its purpose is “to provide guidance for and investment in the research and development activities of the Department of Energy Office of Science.” The bill has been passed in the House and moved to the Senate in its next step to becoming a law.

Throughout the bill, there are references to previous proceedings, acts, and publication leading to the Science for the Future Act. These references are as follows:

1. **“Department of Energy Research and Innovation Act”**: Bill H.R.589 was introduced to the House by Representative Lamar Smith (R-TX) and Representative Eddie Bernice Johnson (D-TX) and to the Senate by Senator Lisa Murkowski (R-AK) and Senator Maria Cantwell (D-WA). The purpose was to establish the Department of Energy policy for science and energy research and development programs and reform National Laboratory management and technology transfer programs. The bill has since become federal law.
2. **“Department of Energy Organization Act”**: As outlined by the DOE Science for the Future Act, under section 209 of the DOE Organization Act, the Director will carry out a research and development program in basic energy sciences, including materials sciences and engineering, chemical sciences, physical biosciences, geosciences, and other disciplines, to understand, model, and control matter and energy at the electronic, atomic, and molecular levels and provide the foundations for new energy technologies. It will also address scientific grand challenges and support the energy, environment, and national security missions of the Department. To learn more about this Act, click the following link:
[http://uscode.house.gov/view.xhtml?req=\(title:42%20section:7139%20edition:prelim\)](http://uscode.house.gov/view.xhtml?req=(title:42%20section:7139%20edition:prelim))
3. **“Report on Facility Upgrades”**: Under the guidelines approved by the Basic Energy Sciences Advisory Committee, the Secretary will provide for the upgrade to the Advanced Photon Source. This includes the development of a multi-bend achromat lattice to produce a high flux of coherent x-rays within the hard x-ray energy region and a suite of beamlines optimized for this source. To learn more about this Report, refer to H.R.3593 or click the following link:
<https://www.congress.gov/115/crpt/hrpt555/CRPT-115hrpt555.pdf>

4. **“Facilities for the Future of Science: A Twenty-Year Outlook”**: Back in 2003, Energy Secretary Spencer Abraham released a report to signal a change in the perception of the programs of the Office of Science and the role that these programs will play in America's future, expressing how "these additional world-class Office of Science user facilities and upgrades to current facilities will lead to more world-class science, which will lead to further world-class R&D, which will lead to greater technological innovation and many other advances, which will lead to continued U.S. economic competitiveness." To read the Report, click the following link:
<https://www.aip.org/fyi/2003/facilities-future-science-twenty-year-outlook>

5. **“Four Years Later: An Interim Report on Facilities for the Future of Science: A Twenty-Year Outlook”**: Published by the Office of Science of the Department of Energy in August, 2007, the interim report provides a status update on the original 28 facilities about their scientific purpose and significance and their prospective societal and other benefits. In cases where Department decisions about facilities have changed, a summary of the rationale behind those decisions is provided. To learn more about the Interim Report, click the following link:
<https://www.energy.gov/articles/doe-office-science-publishes-update-landmark-plan-facilities-future-science-twenty-year>

6. **“Energy Policy Act of 2005”**: Bill H.R.6 = was introduced in the 109th Congress to the House by Representative Joe Batron (R-TX-6). The purpose was to set forth an energy research and development program covering: energy efficiency; renewable energy; oil and gas; coal; Indian energy; nuclear matters and security; vehicles and motor fuels, including ethanol; hydrogen; electricity; energy tax incentives; hydropower and geothermal energy; and climate change technology. The bill has since become federal law.

Templates to Contact Legislators about Supporting the Science for the Future Act of 2021

How to Find Your Senators

To locate your state's Senator's website and contact information, click on the link here: <https://www.senate.gov/senators/senators-contact.htm>. Select your state from the "Choose a state" drop-down menu. Remember that each state has only two senators.

Email Template

Copy the email template below and enter all of the information that pertains to you and your state in the bracketed portions of the text.

Dear Senator [Last Name],

My name is [Name], and I am emailing you to ask for your support of the Science for the Future Act of 2021 and to consider cosponsoring the act in Congress if you have not already.

I sincerely believe that your support of the Science for the Future Act will mean a better future for all Americans, including the scientists behind some of the world's greatest scientific advancements. We need these programs to further America's scientific endeavors. Science for the Future can help destigmatize the public opinion of scientific research and open doors for STEM professionals to make breakthroughs. With the proper funding as outlined in the bill, America's scientists can reach groundbreaking discoveries and improve our nation's health and safety. Science for the Future ensures a better tomorrow for generations to come.

Thank you in advance for your time, consideration, and support of the Science for the Future Act.

Sincerely,

[Name]

Phone Template

When gathering the contact information about your Senator, note down their office's cell phone number, which can be used to call them. If you choose to call, you can use the phone calling template below to speak to their office and arrange a meeting with your Senator.

Hello, my name is [insert your name], and I am a constituent from [city and state]. I am calling to ask [senator's name] to support the Science for the Future Act of 2021. This bill will mean a

better future for all Americans and specifically the scientists behind all of the world's greatest scientific advancements. We need the programs outlined in Science for the Future to further America's scientific endeavors. The bill can help destigmatize the public opinion of scientific research and open doors for STEM professionals to make breakthroughs. With the proper funding as outlined in the bill, America's scientists can reach groundbreaking discoveries and improve our nation's health and safety. Science for the Future ensures a better tomorrow for generations to come.

Please vote in favor of passing the Science for the Future Act to the next stage in the legislative process. Thank you for your time, consideration, and commitment to STEM research and STEM professionals in the U.S.

Other Ways to Support the Science for the Future Act of 2021

Petitions to Sign

- “Save the Arecibo Observatory”
https://www.change.org/p/nsf-save-the-arecibo-observatory-from-decommissioning?source_location=topic_page
- “Restore Science & Tech Advice to Government”
<https://www.change.org/p/paul-ryan-restore-science-tech-advice-to-government>
- “Support for the innovation engine of American science: immigrants”
<https://www.change.org/p/scientists-support-for-the-innovation-engine-of-american-science-immigrants>
- “Defend Scientific Integrity”
<https://actionnetwork.org/petitions/put-the-science-back-in-science/>
- Petitions with the Planetary Society:
<https://secure.planetary.org/site/SPageNavigator/actioncenter.html#/>

Places to Donate

- Natural Resources Defense Council
https://act.nrdc.org/donate/donate-one-time/?source=MRNRDCc3FR&gclid=CjwKCAjwuvmHBhAxEiwAWAYj-PPp-P-Mh00xDJ6Vj44om9h_76L7X_sWfbcrlQ8cT547XTWzX7oUxoCotgQAvD_BwE&gclsrc=aw.ds
- The Planetary Society
<https://secure.planetary.org/site/SPageNavigator/supportprojects.html>
- Association for Women in Science
<https://www.awis.org/>
- Science Friday Initiative
<https://www.sciencefriday.com/donate/>
- Brain and Behavior Research Foundation
<https://donate.bbrfoundation.org/civicrm/contribute/transact?reset=1&id=1>

Scientific Organizations to Volunteer With

- American Association for the Advancement of Science (AAAS)
- Space Foundation
- NOAA National Severe Storms Laboratory
- Earthwatch Institute
- National Oceanic and Atmospheric Administration (NOAA)

Videos to Learn More about the Future of Science and its Impact

- “Impact of Science - The Endless Frontier, and the Next 75 Years in Science”
<https://www.youtube.com/watch?v=dBCvB3B6Q1M>
- “Future of Science in America”
<https://www.aspeninstitute.org/events/future-of-science-in-america-summit/>
- “Martin Rees on the Future of Science and Humanity”
<https://www.quantamagazine.org/videos/martin-rees-on-the-future-of-science-and-humanity/>
- “National Science Foundation: Advancing Research For the Future of U.S. Innovation”
<https://science.house.gov/hearings/national-science-foundation-advancing-research-for-the-future-of-us-innovation>

Helpful Reports to Read about the Impact of Science

- “Imagining the Next 100 Years of Science and Technology”
<https://www.nyas.org/magazines/imagining-the-next-100-years/imagining-the-next-100-years-of-science-and-technology/>
- “Future technology: 25 ideas about to change our world”
<https://www.sciencefocus.com/future-technology/future-technology-22-ideas-about-to-change-our-world/>
- “Perceptions of Science in America”
<https://www.amacad.org/publication/perceptions-science-america>
- “Public sees science and technology as net positives for society”
<https://www.pewresearch.org/science/2016/07/26/public-sees-science-and-technology-as-net-positives-for-society/>
- “A path forward for the future of American science and technology”
<https://thehill.com/blogs/congress-blog/technology/558428-a-path-forward-for-the-future-of-american-science-and>

Get Involved with the Environmental Justice Coalition

The Environmental Justice Coalition is the first grassroots, youth-led movement mobilizing the next generation of activists in the fight for intersectional environmental justice and uplifting BIPOC, low-income, and marginalized communities most impacted by environmental racism and injustices through political advocacy, policy development, community organizing, educational initiatives, and content creation. We are working towards a future in which there is fair and equal treatment, equitable distribution of resources, and meaningful involvement of all people regardless of race, ethnicity, gender identity, sexuality, or income level in the development, implementation, and enforcement of sustainable environmental laws, regulations, and policies on the local, state, and federal level.

For position descriptions, eligibility requirements, sample projects, and application forms, please visit our [Job Board](#) to learn more about joining our executive team, enrolling in our fellowship program, or becoming a staff writer and reach out to team@environmentaljusticecoalition.org with any questions!

Follow the Movement

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LinkedIn: [Environmental Justice Coalition](#)

Medium: medium.com/environmental-justice-coalition

Twitter: [@envjustco](#)

Linktree: linktr.ee/environmentaljusticecoalition

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