



ENERGY SCIENCES COALITION

August 4, 2020

To the Professional Committee Staff of the Energy Subcommittee of the U.S. House of Representatives Science, Space, and Technology Committee:

Thank you for the opportunity to provide feedback and recommendations on the draft Department of Energy Office of Science Reauthorization Act. On behalf of the Energy Sciences Coalition (ESC), we want to thank you for your leadership, and we support the legislation. We believe the legislation supports several key aspects critical to the future success of the Office of Science: 1) growing core research in the physical sciences and other Office of Science-supported scientific disciplines, 2) investing in new research initiatives to maintain U.S. leadership, and 3) accelerating the construction of world-class scientific user facilities. We also want to thank you for incorporating elements of the Securing American Leadership in Science and Technology Act in your draft bill to continue the tradition of bipartisan support for the Office of Science.

Below are specific feedback and recommendations for your consideration:

- **Provide 5 percent real growth annually for core research across all six Office of Science programs over the next five years.** The Office of Science is not only the largest government sponsor for basic research in the physical sciences, but also the primary funder for several subdisciplines – including high energy physics, heavy-element chemistry, plasma physics and catalysis – as well as a leading sponsor in the biological sciences, advanced materials, geosciences, computing and engineering. Robust investments in core research programs are necessary 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 our investments in world-class scientific infrastructure. However, over the last several years, core research funding has declined in all six Office of Science programs. For this reason, ESC recommends 5 percent real growth annually, or approximately a seven percent increase each year, which would take into account inflationary pressures and declining purchasing power.
- **Recognize the important role the Office of Science plays in advancing industries of the future but separate investments in these initiatives from core-research funding.** The Office of Science is a leader in advancing critical industries of the future, such as quantum information science, artificial intelligence, strategic computing, advanced communications networks, and engineering biology. ESC is aware of other legislation that directly addresses the role of the Office of Science in industries of the future such as the National Quantum Initiative Act, the National AI Initiative, and the Engineering Biology Research and Development Act. However, there is value in directly recognizing the role of the Office of Science in advancing these industries of the future in the Reauthorization bill, describing these initiatives as cross-cutting across the six major programs and encouraging coordination with other DOE offices as the science and technology mature and new applications emerge. In addition, part of the reason core research has declined in the last several years is growing investments in these new

initiatives at the expense of core research. ESC recommends authorized investments in industries of the future to be funded separately from, and in addition to, core research.

- **Advance new research initiatives.** ESC strongly supports the new research initiatives proposed in the draft bill. These include program-specific initiatives such as the Coastal Zone Research Initiative, the Next Generation and Energy Efficient Computing programs, the Quantum Science Network, and the Milestone-Based Fusion Energy Development program, as well as cross-cutting initiatives such as a High Intensity Laser Research program. ESC also strongly supports new funding mechanisms, such as climate and environmental mid-scale research centers and a mid-scale instrumentation program, that will take advantage of new world-class scientific user facilities.
- **Accelerate construction of world-class user facilities.** ESC supports authorizing an accelerated construction and upgrade schedule for major, large-scale scientific facilities. These projects are necessary to maintain U.S. leadership and help attract and retain the best scientific talent.
- **Support for alternative financing of research facilities and infrastructure.** ESC supports the inclusion of new provisions that allow DOE and the national labs to utilize alternative financing to modernize critical infrastructure at the national labs. The Office of Science faces close to \$1 billion in deferred maintenance across the 10 Office of Science national labs. Alternative financing is a potential tool to help address aging general-purpose infrastructure – such as office space, general laboratory space, storage space and utilities – which forms the backbone of the DOE enterprise. Proposing new ways to maintain, repair, upgrade and replace general purpose infrastructure would foster safe, efficient, reliable and environmentally responsible operations, while also boosting morale of the scientific and engineering workforce at the national laboratories.
- **Increase funding for workforce development programs, support and provide dedicated funding for diversity, equity and inclusion programs, and expand collaborations for K-12 students.** ESC recommends at least \$40 million in authorized funding for the Workforce Development for Teachers and Scientists program. Despite the growing needs for a highly-trained STEM workforce and the record of success of existing programs such as the Graduate Student and the Science Undergraduate Laboratory Internship programs, these efforts have stagnated over the last decade and should be made a higher priority. In addition, ESC strongly supports the bill’s new direction to grow participation of underrepresented groups in STEM fields relevant to the Office of Science and coordinating with the National Science Foundation on its Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science National Network (INCLUDES) program. To ensure that these efforts are successful, ESC recommends a portion of funding authorized for workforce development programs be allocated to diversity, equity, and inclusion programs. ESC also recommends that DOE submit a plan not just on coordination efforts with NSF’s INCLUDES program, but also key goals, metrics, and new programs, if needed, to address diversity, equity, and inclusion in DOE-relevant STEM fields. ESC also supports the bill’s provisions expanding collaborations not only between university students and national laboratories in STEM fields, but also K-12. Early engagement in STEM fields is critical to developing a domestic pipeline of talent.

Thank you for your consideration. We look forward to working with the Committee to advance this important legislation and are happy to answer any questions. Please stay healthy and safe.

Contacts: Christopher Carter
Co-chair
610-216-5656
ccc317@lehigh.edu

Leland Cogliani
Co-chair
202-289-7475
Leland@lewis-burke.com

The Energy Sciences Coalition (ESC) is a broad-based coalition of organizations representing scientists, engineers and mathematicians in universities, industry and national laboratories who are committed to supporting and advancing the scientific research programs of the U.S. Department of Energy (DOE), and in particular, the DOE Office of Science.