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Science in the White House

THE U.S. PRESIDENT'S SCIENCE ADVISOR—OFFICIALLY, THE ASSISTANT TO THE PRESIDENT FOR Science and Technology (S&T)—has the daunting task of providing accurate and timely input to the president, the vice president, and their senior advisors on the full range of S&T topics that bear on the policy challenges facing the nation, from economic recovery to national security to environmental sustainability. Besides these “S&T for policy” responsibilities, moreover, “policy for S&T” must be attended to: helping craft the S&T budgets for the executive-branch departments and agencies that support much of the country's R&D; partnering with the Domestic Policy Council and the Department of Education in efforts to strengthen science, technology, engineering, and mathematics (STEM) education; enhancing the capabilities and diversity of the science and engineering workforce; ensuring coordination and cooperation among the numerous governmental S&T initiatives that involve multiple agencies; advancing appropriate forms of international S&T cooperation; promoting openness, transparency, and scientific integrity in the conduct of the nation's S&T business; and more.

This wide array of responsibilities far exceeds the capabilities of any one person, of course. Fulfilling them requires the joint efforts of the White House Office of Science and Technology Policy (OSTP), which is directed by the science advisor and, at full strength, has some 60 staff members, including four Senate-confirmed associate directors; the President's Council of Advisors on Science and Technology (PCAST), a group coordinated by OSTP that will include about 20 senior figures from the business, academic, and nongovernmental organizations who advise the White House; and the National Science and Technology Council, which is chaired by the president and includes the heads of all of the executive-branch departments, agencies, and offices with substantial S&T roles. Adequately addressing all of the demands that arise in the White House in the domains of S&T for policy and policy for S&T also requires intensive engagement of the wider science, engineering, and innovation communities (as emphasized by President Clinton's second-term science advisor, Neal Lane, on this page last month). Much of that engagement is facilitated by the U.S. National Academies, the American Association for the Advancement of Science, and other science and engineering professional societies, but it also entails a good deal of reaching out—by the science advisor, PCAST, and the OSTP staff—to individual scientists and engineers for their input.

I see the top S&T priorities for the Obama administration in terms of four practical challenges and four cross-cutting foundations of success in addressing all of them. The practical challenges are: bringing S&T more fully to bear on driving economic recovery, job creation, and growth; driving the energy-technology innovation needed to reduce energy imports and climate-change risks while creating green jobs and competitive new businesses; applying advances in biomedical science and information technology together to help Americans live longer, healthier lives with reduced health care costs; and ensuring that we have the defense, homeland security, and national intelligence technologies needed to protect our troops, citizens, and national interests, and to verify the old and new arms control and nonproliferation agreements that are likewise essential to our security.

The cross-cutting foundations of success are: increasing the capacities and output of our country's fundamental research institutions, including our great research universities and major public and private laboratories and research centers; strengthening STEM education at every level, from precollege to postgraduate to lifelong learning; improving and protecting the information, communication, and transportation infrastructures that are essential to our commerce, science, and security alike; and maintaining and vigorously exploiting a cutting-edge set of capabilities in space, which must be understood not just as grand adventure and focus for expanding our knowledge of how the universe works, but also as a driver of innovation and a linchpin of communications, geopositioning technology, intelligence gathering, and Earth observation.

It is a lot to get done. But led by a president who deeply grasps the importance of S&T to our national goals and who is putting scientists, engineers, and innovators back into the center of what the executive branch does, “Yes, we can.”

— John P. Holdren

