

Gore and Bush Offer Their Views on Science

Science is rarely an issue on the campaign trail. But politicians are increasingly acknowledging its importance as a major factor in sustaining the country's longest economic boom.

Such recognition, in turn, has focused attention on issues that contribute to the health of the U.S. scientific enterprise, from training the next generation of scientists and fostering innovation to improving management of the national labs and filling senior slots promptly. Science invited the Democratic and Republican nominees for president to present their views on some 20 topics chosen by our editors.

Both candidates honored our request to be brief, allowing us to run their complete responses to the following questions.

Science: What are your top three priorities in science and technology?

GORE: We must first ensure that the climate for investment in research and development remains strong throughout the private and public sectors. Sound fiscal policy and regulations with respect to research will help maintain U.S. leadership across the frontiers of science. We need to make the research and experimentation tax credit permanent and expand it so that it also works for small businesses. We must update the tax code to help companies depreciate their equipment in ways that reflect the fast pace of modern technical developments.

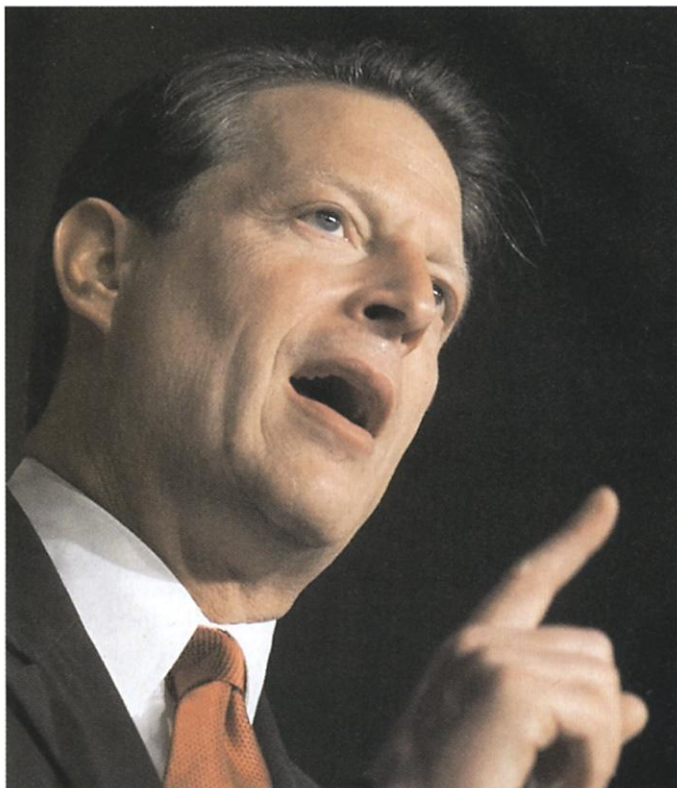
Second, we must be certain that our research and development portfolio is balanced. We must support all critical areas of research in life sciences, physical sciences, and other scientific disciplines. This should

include increasing biomedical research by \$18 billion over 10 years, doubling information technology research in 5 years, and rapidly expanding research in areas that can improve the environment.

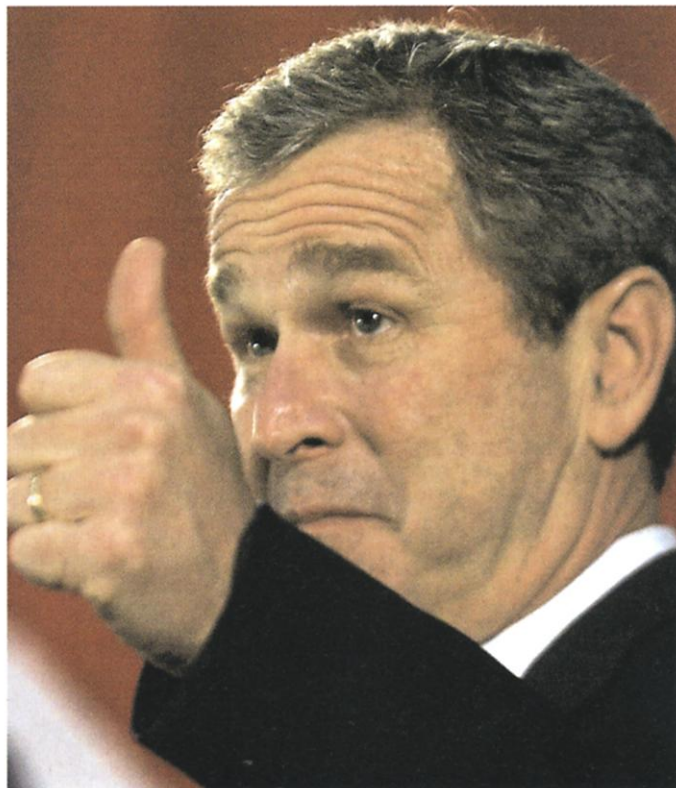
Finally, all Americans must have the education and training they need to ensure that the pace of innovation continues in our research laboratories and that our economy makes full use of the power of these inventions. Science, mathematics, and engineering education in K-12 must be strengthened by supporting the training of teachers, as well as increasing research to improve the use of computers in schools. Federal fellowships, scholarships, and traineeships for students pursuing careers in science, math, and engineering must be increased.

BUSH: If elected president, I will pursue policies to ensure that our workforce is

AL GORE JR.



GEORGE W. BUSH



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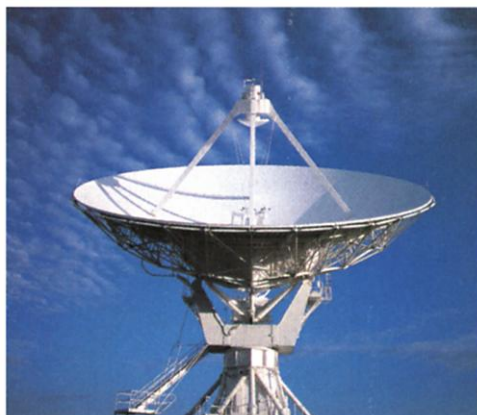
THE CANDIDATES ON

The National Science Foundation

Science: *Would you submit budget requests aimed at doubling the National Science Foundation's (NSF's) budget over 5 years?*

GORE: The Administration, with my support, strove to put the NSF budget on a 5-year doubling path with a requested 17% increase for fiscal year 2001. I hope to submit budget requests that will keep NSF, and other parts of the 21st Century Research Fund, on that path.

BUSH: I support increasing the federal investment in basic research and development, and funding NSF as the primary agency for supporting peer-reviewed, competitively awarded, long-term, high-risk research conducted through our nation's universities. I also support the principles of the Networking and Information Technology Research and Development Act (H.R. 2086), which will help reverse the downward trend in support for the computer sciences.



prepared to seize the opportunities of the high-tech economy. I will work to reform schools that do not work and will not change, by raising standards, measuring progress, and blowing the whistle on failure. I will also give schools unprecedented flexibility in using federal education technology funds.

I believe that we should encourage greater investment in research and development (R&D). That is why I support making the R&D tax credit permanent. I have proposed increasing defense R&D spending by \$20 billion over 5 years to propel our armed forces generations ahead in military technology. I have also proposed doubling the research budget of the National Institutes of Health as part of an overall effort to refocus and reinvigorate the federal government's role in promoting cutting-edge research.

I will also work to lift barriers to innovation and fight efforts to impose new obstacles. I will pursue an international agenda that supports America's high-tech companies and innovation, by making the Internet a duty- and tariff-free zone worldwide, dismantling nontariff barriers to trade in information technology, combating piracy of American ideas and intellectual property, and promoting the development of internationally compatible standards for e-commerce.

Science: *How would your Administration raise the quality of science and math education at all levels, from the*

first grade through graduate school? Many people are worried that U.S. universities have become overly dependent on foreign students to fill undergraduate and graduate science and engineering programs. Do you agree? If so, how would you address the problem?

GORE: We must strengthen America's educational system, from preschool through graduate school, paying special attention to the needs of women and minorities so that our technical workforce reflects the face of America. I would test all new teachers to make sure they are qualified. I would recruit and hire 100,000 new teachers to reduce class sizes in the early grades and in

high school. I would also invest to help local school districts construct new schools and modernize classrooms. We must finish connecting every public school classroom and library to the Internet, and we need to focus on the basics, like teaching math.

American universities are the envy of the world, and we benefit enormously from the talents of students from other countries. But we must ensure that more American students are motivated to pursue careers in science and math and that they have the support they need. Our program includes a \$50 billion plan to make high-quality, voluntary preschool universally available; pay incentives, training, and assessments to ensure that the 2 million K-12 teachers who will be hired during the next decades are qualified in the subject areas they teach; programs to ensure that students have appropriate

access to the Internet and teachers are trained to be productive using the new technology; and a new research program to develop and evaluate innovative ways to learn science, mathematics, and other subjects using information technology. We would make college tuition tax deductible, provide new savings plans, expand Pell grants, and take other steps to achieve our goal of having three-quarters of high school graduates attend college and half of all college-age Americans earn their degrees by 2010.

BUSH: Every child in America deserves to be challenged by high expectations and supported by a commitment to excellence. As governor of Texas, I have worked to improve the achievement of all students—particularly minority and disadvantaged students. As president, I will work to create

THE CANDIDATES ON

Nuclear waste

Science: *Do you support the use of Yucca Mountain as a site for long-term storage of nuclear waste?*



GORE: Until the scientific analysis of the Yucca Mountain site is completed, it is premature to make a determination about its use as a disposal site. For that reason, I have strongly supported the Administration's successful fight against legislation that would move waste to the Yucca Mountain site before the scientific evaluation is complete.

BUSH: Sound science—not politics—should prevail when determining long-term storage of nuclear waste. I will respect the current Administration's timetable on Yucca Mountain, which calls for a decision before the end of 2001. I oppose shipping nuclear waste anywhere until all the necessary scientific studies at its destination site have been completed.

a culture of achievement for all students in all subjects, including math and science.

I believe that we must strengthen math and science curricula, encourage more students to take challenging coursework, and increase the number of qualified math and science teachers. That is why I have proposed creating a \$1 billion Math and Science Partnership Fund to build partnerships between states and institutions of higher education. Participating states would be required to meet clear accountability measures in boosting student achievement in math and science. Participating universities would provide their expertise to strengthen state math and science standards and resources. I have also proposed making available \$1 billion for enhanced Pell Grants to provide incentives to high school students to take college-level math and science courses.

I also believe that we should encourage math and science majors to teach in schools with a high percentage of low-income students. That is why I have proposed providing \$345 million to increase, from \$5000 to \$17,500, the amount of student loans that may be forgiven for science, math, technology, and engineering majors and minors who commit to teaching in high-need schools for at least 5 years.

Science: *The first analyses of the complete sequence of the human genome will soon be published. Should there be any restrictions on the use of this infor-*



THE CANDIDATES ON:

Reasonable pricing for new drugs

Science: *Do you favor some type of "reasonable pricing" clause on new drugs and medical technologies developed as a result of federally funded research?*

GORE: I think the data show that previous approaches did not serve the best interest of the public. In 1995, the NIH dropped a reasonable pricing clause in its agreements with industry after concluding that the clause had driven industry from potentially beneficial scientific collaborations with government scientists. On the other hand, I believe that the government needs to take an active role in securing fair treatment for the contributions it makes to new products. Some interesting legislation on this topic is pending, and I remain open to continued discussion of these issues so long as we focus on developing products and avoid price controls.

BUSH: Development of effective medications is not served by price controls, which stifle the research needed to produce new life-saving drugs.

Many of our senior citizens face a situation in which they are forced to choose between heat or medicine, food or pills. In a wealthy nation, this is a scandal. In a compassionate nation, it is a call to action. That is why I have proposed giving direct aid to our neediest senior citizens now, by expanding state prescription drug assistance programs. I have also proposed that every health

plan that participates in Medicare must also offer a policy that includes prescription drugs and that every senior be provided federal assistance to make such coverage affordable.

mation in areas such as genetic engineering, DNA patenting, and obtaining health insurance?

GORE: Raw, fundamental genome sequence data, which cannot be patented, should be made freely available to scientists around the world for use in developing the next generation of medical diagnostic products, treatments, and cures. Unencumbered access to this information will promote discoveries that will reduce the burden of disease, improve health around the world, and enhance the quality of life for all humankind. Intellectual property protection for gene-based inventions also plays a critical role in stimulating the development of important new health care products.

Information about the genetic makeup of individual people has the potential to be used against them for dis-

criminatory purposes. This must be prevented. In 1998, I raised the issue of genetic discrimination at the National Academy of Sciences, because Americans need to be reassured that their genetic information won't be used to prevent them from obtaining or keeping their health insurance or their jobs. As president, I would strongly support such assurance.

In the area of DNA and gene patents, I believe that the Patent and Trademark Office is moving in the right direction by raising the bar on its standards for patents. Patent law has stood us in good stead since the framers of the Constitution put it in place to "promote progress in science and the useful arts."

BUSH: I oppose all types of discrimination, including discrimination based on the use of genetic information. As governor I worked with the state legislature to achieve legal protections in Texas against genetic discrimination. In 1997, I supported and signed a model genetic privacy law that makes it illegal for insurers and employers to make decisions based on genetic test results.

Science: *Do you think that the government is getting its money's worth from the Department of Energy's labs and the hundreds of others run by other agencies? Would you favor a review aimed at reduc-*

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ing the number of labs and/or redefining their missions? In particular, how would you combat the perception that a hostile atmosphere toward Asian-American scientists now exists at the weapons labs?

Gore: The Department of Energy's national laboratories continue to play an essential role in the nation's research and security. They manage some of the nation's most ambitious and successful research. They operate particle accelerators, light sources, and fast-flux reactors available for both university and corporate research. They play a central role in research that has led to advances in fuel cells, high-efficiency lighting, efficient windows, and other products that are vital to our energy and environmental programs.

One role of the laboratories must be maintained and strengthened: We must ensure the viability of U.S. nuclear weapons. This is a complex and critical task in the absence of nuclear testing. The laboratories must have a strong program for ensuring that such stewardship can be achieved by providing them with adequate and stable support.

Much has changed in the world, however, since the original laboratories were formed to develop atomic weapons. It may be time again to take a careful look at the nondefense tasks where the national laboratories have a key comparative advantage over research conducted in universities or corporate research facilities.

Discrimination against people of any ethnic origin is abhorrent and wrong. The United States owes much of its vibrant economy and strong military to the genius of immigrants who have come here from all over the world. We have acted to forbid racial profiling by police and security forces everywhere in the United States, and our agencies and national laboratories cannot be exempt from such policies.

Bush: Since their establishment, America's national laboratories have been fundamental to our defense science and technology base and crucial to our national security. I believe the cutting-edge work done at our national labs will be even more important in the future.

Unfortunately, the tenure of the current Administration has not been good for our national laboratories. Inadequate leadership, oversight, and management by the Department of Energy have left a dark cloud over our national labs. America's security should not be a matter of lost and found. In my Administration, our national labs will be secure again, our vital information will be sealed again, and our nuclear secrets will be secret again.

If elected president, I will put in place



new leadership at the Department of Energy that will restore confidence in our national laboratories and among those who work there.

Science: *Do you think that the United States should make it easier for foreign students to remain in the country after they have finished their scientific training so that the U.S. economy can benefit from their expertise? If so, how would you change immigration laws to accomplish that goal? In addition, do you favor raising the current limit on the number of H1-B visas that can be granted to attract foreign high-tech workers? To what annual level?*

Gore: The number of foreign students currently studying science and engineering in the United States is a testament to the quality of our higher education system. Still, a high workforce priority must be to increase the participation of U.S. citizens and permanent residents in science, mathematics, engineering, and technology (SMET)—paying particular attention to encouraging industry to recruit minorities, women, and other traditionally underrepresented groups. We must also ensure that immigration is not artificially holding down wages, making some science and technology jobs less attractive. Nevertheless, most current projections indicate that the United States will not be able to meet its SMET workforce needs without increased immigration.

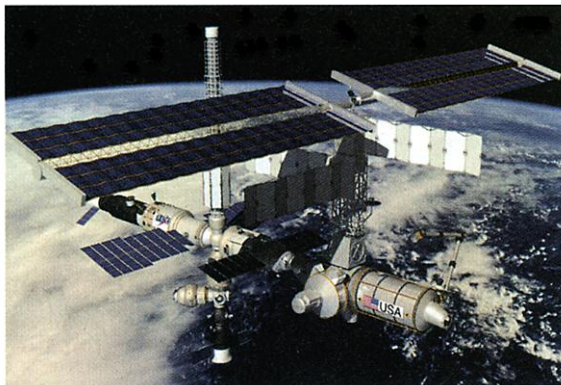
THE CANDIDATES ON:

The international space station

Science: *Does the value of the international space station justify its projected \$60 billion to \$100 billion cost?*

Gore: The projected cost is less than \$40 billion, including its \$13 billion operational costs during the next decade. A passion for discovery and a sense of adventure have always driven this nation forward, but this is far more than just an American venture. This project is the largest multinational peacetime technological effort ever undertaken. It will benefit all humankind.

Bush: The United States should maintain its leadership in the exploration and development of space. I believe that we should also be able to protect our network of satellites, which is essential to the flow of commerce and the defense of our country. Long-term projects such as the international space station should be subject to oversight to determine whether they are continuing to serve our nation's overall interests in space.



THE CANDIDATES ON:

Genetically modified crops

Science: *Do you think the risks of genetically modified crops and other products outweigh their potential benefits?*

GORE: This type of technology holds enormous promise to help increase crop yields, produce more nutritious foods, and improve environmental quality. Genetically modified crops can create new markets for our nation's farmers in areas like pharmaceuticals, energy, and raw materials for industrial chemicals. We need to maintain our science-based regulatory approach to capture the benefits and minimize the risks. We need to remember that modern agriculture is not a risk-free endeavor. We need to assess any risks associated with genetic engineering in the context of the risks regulators, farmers, and consumers have been dealing with for decades.



BUSH: I oppose barriers to safe food and believe that our health and safety regulations must be based on sound science. In 1999, 50% of the soybeans, 40% of the cotton, and about one-third of the corn produced in the United States was genetically modified. The European Union, however, has imposed a moratorium on the import of new biotech crops. Additionally, despite a ruling at the World Trade Organization, whose rules require adherence to sound science, the European Union continues to ban the import of U.S. beef treated with growth hormones.

The next president must carry a simple and unequivocal message to foreign governments: We won't tolerate favoritism and unfair subsidies for your national industries. I will fight to ensure that U.S. products are allowed entry into the European Union and that accepted scientific principles are applied in enacting regulations. American farmers are without rival in their ability to produce and compete, and the future prosperity of the U.S. farm sector depends in large part on the expansion of global markets for U.S. products.

I favor increasing the cap on H1-B visas in 2002 and 2003 to 200,000, with a large fraction of this increase going to individuals with master's or higher degrees. Visa fees would be used to provide education and training for incumbent and dislocated engineers, as well as for scholarships for low-income students. Beyond this, I do not favor changing immigration laws to increase the number of foreign students who remain in the country. The present situation, with approximately 50% of them remaining, is fair to the United States and to their home countries, which supported their education through the bachelor's degree level.

BUSH: America has the best industries in the world, and that means we need the best workers in the world. The current cap on H1-B visas hurts high-tech industries

that are currently facing a shortage of computer engineers, software programmers, technicians, and other workers with special skills. To maintain the competitiveness of our high-tech companies, I favor allowing them to recruit more temporary, high-skilled workers through an increase in the



current number of H1-B visas. The current Administration, by failing to support legislation to increase the number of highly skilled, highly trained immigrants, has stood in the way of continued economic growth.

Ultimately, H1-B visas are a short-term solution to a long-term problem. As America's need for highly trained specialists continues to grow, the solution is educational excellence. My aggressive agenda to improve education—based on the successful reforms in Texas—places a renewed emphasis on science and technology training.

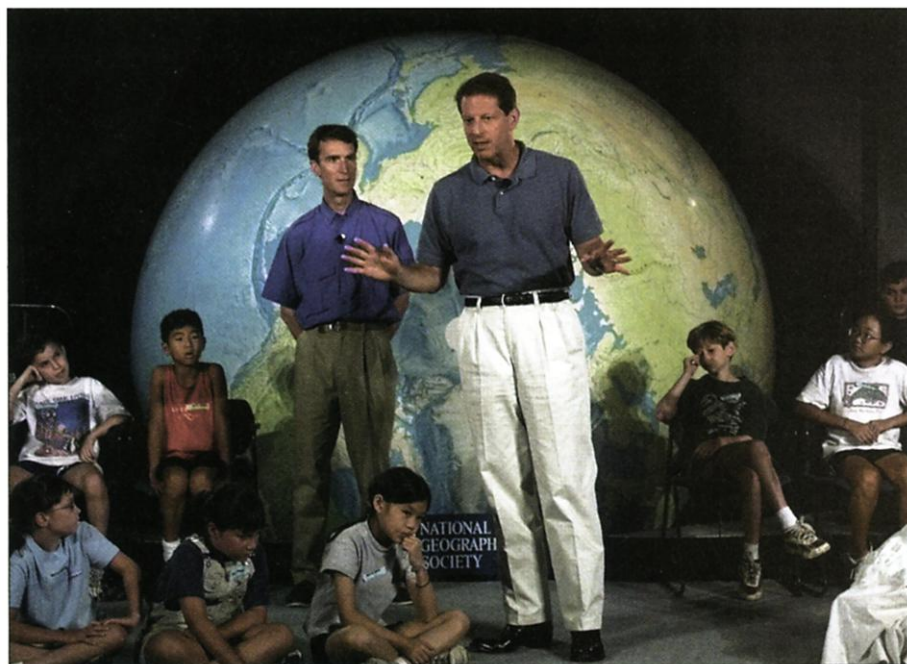
Science: *Many scientists say the proposed national ballistic missile defense system can be easily foiled by countermeasures. Do you have evidence that they are wrong? Would you seek independent scientific advice before making a deployment decision? And how would your Administration deal with the threat of nuclear, biological, or chemical weapons being smuggled into the United States by terrorist groups?*

GORE: The United States has always counted on technical superiority to secure our defenses. We will ensure that basic and applied research in the Department of Defense is supported in ways that guarantee that the U.S. military has the best equipment and training in the world. We should continue to support the demanding research under way to find cost-effective ways to defend ourselves against attack, including ballistic missiles.

President Clinton recently postponed a decision to deploy the current generation of missile defense technology. When in office, we will immediately review the status of the program in the context of a broader review of the nation's nuclear posture. A decision to deploy a ballistic missile system should be based on four criteria: 1) the nature of the threat, 2) the feasibility of the technology, 3) the cost, and 4) the overall impact on our national security, including arms control. We place a high value on ensuring that any such system is compatible with the Anti-Ballistic Missile Treaty.

The best way to combat terrorism is to disrupt terrorist networks before they attack. We will improve coordination internationally and domestically to share intelligence and develop operational plans at

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all levels of our government to target terrorist finances, break up support cells, disrupt training, and prevent attacks.

BUSH: America must build effective missile defenses, based on the best available options, at the earliest possible date. Our missile defense must be designed to protect all 50 states—and our friends and allies and deployed forces overseas—from missile attacks by rogue nations and from accidental launches. Unfortunately, the 1972 Anti-Ballistic Missile (ABM) Treaty makes it hard for us to fully explore the options available for missile defense. We need an Administration with a firm commitment to exploring all options. If elected president, I will offer Russia the necessary amendments to the ABM Treaty to make our deployment of effective missile defenses consistent with the treaty. If Russia refuses the changes we propose, I will give prompt notice, under the provisions of the treaty, that the United States can no longer be a party to it.

The protection of America itself—homeland defense—will assume a high priority in a new century. Our first line of defense is a simple message: Every group or nation must know, if it sponsors attacks on American soil, our response will be devastating. We will also defend the American homeland by strengthening our intelligence community—focusing on human intelligence and the early detection of terrorist operations both here and abroad. And when direct threats to America are discovered, I know that the best defense can be a strong and swift offense—including the use of special operations forces and long-range strike capabilities.

Science: *A recent report by the National Academy of Sciences criticizes the delays by past Administrations in appointing scientists to senior positions. It also recommends improving coordination of science within the Executive Office. What steps would you take to ensure the timely appointments of such key posts as the director of the National Institutes of Health (NIH) and the president's science adviser and director of the Office of Science and Technology Policy (OSTP)? Do you plan any changes in the organization of OSTP and the management of interagency activities relating to science?*

GORE: I know the academy has made some thoughtful recommendations for speeding up the time it takes to investigate nominees and for reducing the financial burdens on science and technology candidates. We will consider these carefully. Hopefully, the Senate will also carefully review the way it handles confirmations and quit turning our science and technology appointments into political footballs. The NIH and OSTP directors will be among my top priorities for early appointments.

Both Joe Lieberman and I have extensive experience working on science and technology policy issues, and we understand the importance of sound technical advice. Science and technology play a key role in many areas of public policy: national security, health care, the environment, the economy, and airline safety, among others. OSTP will be a key part of our Administration's team of advisers, playing a role comparable to that of the National Security Council, the National Economic Council, and the Domestic Policy Council. OSTP and the National Science and Technology Council will play a key role in establishing Administration research priorities and ensuring that all agencies are able to make full use of technical innovations in fulfilling their missions in agriculture, transportation, energy, housing, commerce, and other areas. OSTP will also ensure that our Administration profits from the advice and counsel of scientists throughout the nation in a timely fashion.

BUSH: In recent years, the process of presidential nominations and confirmations has become increasingly lengthy, partisan, and unpleasant, resulting in fewer good people

THE CANDIDATES ON:

Academic health centers

Science: *Should the federal government increase its support for academic health centers?*

GORE: Academic health centers face significant financial problems in playing their vital role in clinical research. The NIH is studying federal policies and practices that may contribute to those problems and will soon present recommendations that I will carefully study.

BUSH: The United States boasts the finest academic health centers in the world. If elected, I will be committed to strengthening these institutions so that they can enhance their fundamental role in education, patient care, treatments, and groundbreaking research. The National Institutes of Health—whose budget I have proposed doubling—is a unique, government-sponsored, academic health center, supporting important education and research across the country.



being willing to enter into high-level government service. As one recent nominee famously remarked, the process is "nasty and brutish without being short." If elected president, I will make the prompt submission of presidential nominees a top priority and challenge Congress to act on those nominees within 60 days. I believe that 60 days is a reasonable and achievable goal for Senate action on nominees.

Science: *What is your view of the scientific evidence that attributes global warming to human activity? Should the United States take steps in this decade to reduce its emission of greenhouse gases? If so, do you favor annual targets or another mechanism?*

GORE: There can no longer be serious doubts that human economic activity is affecting the global environment. While uncertainties remain, the debate has shifted to an examination of the speed and magnitude of climate change and what we might do to affect its course. All nations must take action to reduce the emissions that are causing these changes. The United States presently contributes nearly one-fourth of all greenhouse gases. During the past 7 years, we have worked to encourage the development and use of advanced technologies for electric utilities, cars, trucks, factories, farms, and houses that can provide us a more prosperous life while greatly reducing emissions of greenhouse gases. We've proposed tax credits and other incentives to speed the adoption of these innovative technologies. The Republican Congress has repeatedly cut research requests below the levels we rec-

ommended and failed to pass our proposals of the tax credits.

Yet, we've clearly achieved some success. During the past 2 years, the U.S. gross national product grew more than 8% with almost no net increase in production of carbon dioxide emissions. And much work remains. We have proposed a \$68 billion, 10-year program to support increased research, and tax incentives for the purchase of energy efficient and low-

carbon energy supplies. We're convinced that U.S. inventiveness in using information technology, advanced materials, biotechnology, and other innovations will permit the United States and nations around the world to prosper while protecting the environment.

BUSH: As governor, I've taken steps to reduce harmful, ozone-forming pollution. In 1999, I signed two landmark clean air bills that will reduce industrial air emissions an estimated 250,000 tons annually—the equivalent of removing 5.5 million cars from Texas roads and highways. One of those new laws mandates that by 2003 older power plants must reduce their emissions of nitrogen oxide (by 50%) and sulfur dioxide (by 25%). This law—which the Environmental Defense Fund calls "the strongest in the nation"—also requires that new renewable and clean sources of energy be built, making Texas the largest market for renewable energy in the country.

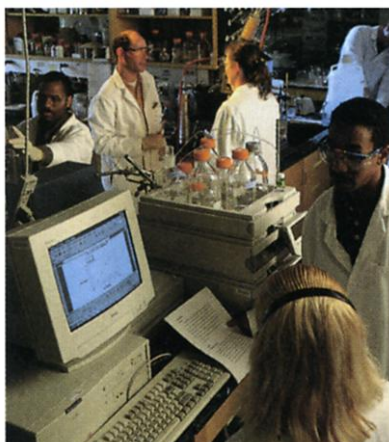
Efforts to protect our environment must be based on the best science. Scientific data show that average temperatures have increased slightly during this century, but both the causes and the impact of this slight warming are uncertain. Changes in Earth's atmosphere are serious and require much more extensive scientific analysis.

THE CANDIDATES ON:

Minorities and women in science

Science: *Do you support affirmative action programs to attract more minorities and women into science?*

GORE: Affirmative action programs provide a key tool to encourage women, Hispanics, African Americans, and other groups traditionally underrepresented in science and technology programs to enroll in science programs. We need to draw upon America's full talent pool. We risk creating an income gap between those with access to science education and those who miss the opportunity.



BUSH: I support what I call "affirmative access"—not quotas or double standards that divide our nation, but access—aggressive efforts to reach out and include people from all walks of life. Equal access doesn't guarantee equal results, but it does guarantee that everyone gets a fair shot based on his or her potential and merit. As governor, I have worked with the legislature to enact several innovative new laws to boost access for disadvantaged and minority students. One new law, for example, grants every high school graduate who finishes in the top 10% automatic admission to any public college or university. My vision of affirmative access for all is yielding strong results. More minorities are attending Texas colleges today than before I took office, and they make up a larger proportion of students on state campuses.

THE CANDIDATES ON:

UNESCO

Science: *Should the United States rejoin the United Nations Educational, Scientific, and Cultural Organization (UNESCO)?*

GORE: Great strides have been made to address the issues that led to our withdrawal in 1984, and we remain active in several of UNESCO's science and related programs. It can be an effective forum and mechanism to promote our foreign policy goals. Reentry remains on my list of priorities for the future.

BUSH: I believe that the United Nations can help in weapons inspections, peace-keeping, and humanitarian relief efforts. If I am president, America will pay its dues to the U.N.—but only if the U.N.'s bureaucracy is reformed and our disproportionate share of its costs is reduced.



PRESIDENTIAL FORUM

As president, I will work for a comprehensive, fair, and effective agreement—one that harnesses the power of the marketplace and encourages international efforts to develop the technologies to reduce greenhouse gas emissions. I believe reductions in global pollution through market-based mechanisms have worked in the past and can work in the future. I support investing in technologies that rely on clean, abundant, renewable energy sources, as well as the development of cleaner cars and cleaner burning fuels and alternative sources of fuel and new fuel alternatives.

Science: *What policies would your Administration adopt to foster innovation in the U.S. economy? In particular, do you support the Advanced Technology Program (ATP) at the National Institute of Standards and Technology? If not, describe alternatives that you believe would support a sound U.S. technology policy.*

GORE: Technical innovation is the engine of economic growth and is key to America's prosperity in the 21st century. A balanced federal budget and well-managed fiscal policy are essential to keeping interest rates low and encouraging rapid technical development and commercialization. Our strategy is to couple this economic discipline with policy reforms and sound investments. Establishing greater coordination between regulatory policy and the science and technology enterprise is a top priority, as is electric utility deregulation and accelerated use of performance-based environmental regulations. Continued reform of patent policy and vigorous defense of U.S. intellectual property abroad will encourage corporate research. Between 1993 and 1998, investments rose by more than half, as did patents issued to U.S. inventors. Yet, even as private research increases, we must ensure strong federal investments in education and research. The federal role in basic research is unique. It funds training for the next generation of discoverers and innovators. Equally important is federal support of key areas of generic applied research where incentives for private investment are weak. The ATP program is a model experiment of how public funding can be leveraged effectively through public-private partnerships to support research in innovative, high-risk applied technology. The high public returns to well-managed research programs such as the ATP are well documented.

BUSH: I am committed to pro-innovation and pro-research policies that will

strengthen America's technological leadership. I believe that we should encourage greater investment in research and development. That is why I support increasing the federal investment in basic research.

As governor, I have worked hard to establish a stable environment that encourages research and innovation without attempting to direct them. Texas is now among the most technology-friendly states in America and is now an established biotechnology leader.

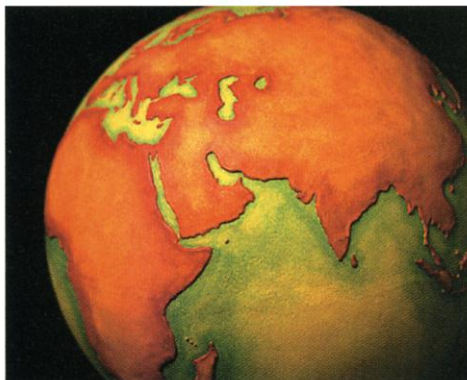
Science: *Please tell us about your personal involvement in science, including when it began and how it developed. Has that involvement left you with a special interest in any particular topic?*

THE CANDIDATES ON:

Science in the State Department

Science: *The State Department has been criticized for failing to incorporate science into its activities, including the staffing of its embassies. What would you do to improve this situation?*

GORE: Our policies in arms control, trade, intelligence, communications, environmental treaties, health, and a host of other issues must rely on sound scientific advice. We will



certainly follow through on the decision to appoint a senior adviser for the Secretary of State. We also will ensure that people with strong scientific backgrounds are appointed throughout the State Department and the Foreign Service. Key officials in the State Department should either have a background in science and technology policy or have demonstrated skills in searching out science and technology advice.

BUSH: Unless a president sets his own priorities, his priorities will be set by others—by adversaries or the crisis of the moment, live on CNN. American policy can become random and reactive—untethered to the inter-

ests of our country. American foreign policy must be more than the management of crisis. It must have a great and guiding goal: to turn this time of American influence into generations of democratic peace. This can be accomplished by concentrating on enduring national interests. The U.S. government should develop improved science capabilities where a better understanding of scientific issues will help promote those interests.

GORE: My favorite subject in school was science, and Professor Roger Revelle's [natural sciences] course at Harvard profoundly affected me. My interest in science and technology developed further when I first served in the House and worked on the House Science Committee. In the Senate, I played a substantive role in strengthening research in many areas, whether it involved arms control, launch of the High Performance Comput-

BUSH: As governor of Texas—a state that is home to some of our nation's finest universities and that has been a leader in high technology and the New Economy—I have gained an important perspective on the vital role of science in our schools, our universities, and our economy. I have made educational excellence my highest priority. Education will also be my paramount priority should I be elected president.