

an ambitious study of government's role in science and technology over the next half century—an update of Vannevar Bush's famed report, *Science—The Endless Frontier*, which led to the establishment of the National Science Foundation (PHYSICS TODAY, December 1997, page 49).

Holt, who ran and lost in the district's Democratic primary two years ago, bears an impressive political heritage. His late father had served six terms in the West Virginia House of Delegates and one term as a US senator. In 1935–41, when Rush Holt Sr was elected to the Senate as a New Deal Democrat, he was only 29, the youngest person ever to serve in the Senate, still six months short of the Constitutional requirement to occupy a seat. Even so, he was allowed to sit

in the chamber, though he was forbidden to speak and vote until he turned 30. "You see, I was born and raised in politics," Rush Holt Jr said in an interview. "And I believe I will make a good congressman."

The campaign leading up to the election in November is expected to be costly and rough. Republicans say they need to hold the seat to maintain their slim margin in the House. Holt knows it will be expensive to challenge an incumbent, particularly in a district where the costs of TV and radio ads have few bounds. He admits to having few donors with deep pockets. "I expect to be raising money at the grass roots from nontraditional sources," said Holt. He has already received contributions from a half dozen Nobel Prize physicists.

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Washington Ins & Outs

NASA and DOE Each Lose Two, While Pentagon Gains Two

This is the season for many to break free, and so it is with some leading science managers at NASA and the Department of Energy (DOE).

NASA Administrator Dan Goldin is scouring the country for a scientist to succeed **Wesley Huntress**, the agency's experienced and effective associate administrator for space science, who is leaving in September to be director of the Carnegie Institution's Geophysical Laboratory. Huntress is "a real loss to our science program," said Goldin. As an associate administrator since 1993, Huntress has been responsible for NASA's programs in astrophysics, planetary exploration, space physics and a great deal more.

During his tenure, NASA space science produced many important discoveries and greatly increased the launch rate of missions. Among the highlights were the unexpected discovery of possible ancient microbial life in a Mars meteorite found in Antarctica, the suggested existence of an ocean under the frozen surface of Jupiter's moon Europa, the finding that powerful bursts of gamma rays originate some 12 billion light-years from Earth and the rich trove of "sightings" by the Hubble Space Telescope, which have raised cosmological conundrums about the origin and size of the universe, and a great deal more.

Before becoming the agency's head of space science, Huntress served as director of NASA's solar system exploration division (1990–93) and as spe-

cial assistant to the director of the Earth science and applications division of Caltech's Jet Propulsion Laboratory. Huntress joined JPL after receiving a BS in chemistry at Brown University (1964) and a PhD in chemical physics at Stanford University (1968). At JPL, he and his team gained international acclaim for their pioneering studies of chemical evolution in interstellar clouds, comets and planetary atmospheres. He served as coinvestigator for the ion mass spectrometer experiment in the Giotto Halley's Comet mission and as an interdisciplinary scientist for the Upper Atmosphere Research Satellite and the Cassini mission.

In his years at NASA, Huntress is particularly proud of the enthusiasm the spate of discoveries has generated in the press, public and Congress. The discoveries "created a momentum in the scientific community and the agency's staff," he noted during an interview in his corner office at NASA's headquarters. "What exciting things we have to talk about these days. New data are coming back constantly from the Hubble and other spacecraft. It's wonderful that young researchers are able to work with data that are only a couple of days old, not 11 or 12 years old. It promotes productivity. And we're audacious enough now, thrilled by our success, to go look for life on habitable planets."

It wasn't always like that at NASA. After the Moon landing in 1969, budgets withered for space exploration.

"When I came here," Huntress recalled, "space science was set to be reduced by 20% in five years. Money still isn't plentiful, but it's increasing. In the 1999 budget, the agency overall is down 4%, but space science is up 4%."

He's leaving NASA as space science strikes a brilliant high note. "It's been a long and difficult few years making it all happen," he stated. He claims to be mentally and physically tired, "and I need to jump off this juggernaut."

Goldin's plan is to have someone in Huntress's job by September. At Carnegie, Huntress will replace **Charles T. Prewitt**, who has been director of the Geophysical Laboratory since 1986, and is stepping down on 1 July but will remain as a scientific member of the lab staff. As the sixth director in the lab's history, Huntress will lead an interdisciplinary group of scientists in the traditional fields of high-pressure science and petrology, as well as the new fields of astrobiology and biogeochemistry. "We are very pleased that Wes has agreed to lead the laboratory into an exciting and innovative future," said Maxine Singer, Carnegie Institution's president.

Joe Alexander Jr., who was with NASA as a researcher and administrator for more than 30 years and most recently was deputy assistant administrator for science in the Environmental Protection Agency (EPA) Office of Research and Development, has joined the National Academy of Sciences's National Research Council as director of the Space Studies Board. In his new job, Alexander plans and directs the work of the board and maintains connections to sponsoring agencies, international organizations and scientific communities.

Alexander began his NASA career in 1962 at the Goddard Space Flight Center as a scientist and leader of research teams, conducting basic research in astronomy, planetary exploration and space physics. But he is probably best known as deputy to NASA chief scientist **Frank MacDonald** in 1985–87 and assistant associate administrator for space sciences and applications in 1987–1993, when **Leonard Fisk** ran the office. (MacDonald is now at the University of Maryland and Fisk at the University of Michigan.) While at the office of space science and applications, Alexander served concurrently for a year (1992–93) as acting director of life sciences.

When Fisk left NASA in March 1993, Alexander arranged a transfer to Goddard as associate director of space studies. There he quickly became a troubleshooter on programs relating to science spacecraft opera-

tions and data analysis. Once again, he was given a concurrent job as acting chief of the laboratory for extraterrestrial physics.

In October 1994, he made a clean break with NASA by joining EPA, where he coordinated a broad array of environmental science issues involving human health and ecological research. A decade earlier, Alexander seemed to have left NASA, when he went to the White House Office of Science and Technology Policy, then headed by **George (Jay) Keyworth**. Actually, Alexander was on detail from the space agency for 15 months in 1984–85 as a senior policy analyst specializing in issues connected with space science and technology, including the fledgling “Star Wars” project.

Alexander received both his BS and MA degrees in physics from the College of William and Mary.

David L. Hendrie, DOE’s director of nuclear physics for the past 13 years, retired at the end of April and moved to Port Ludlow, Washington, a small town across Puget Sound from Seattle. When he arrived at DOE in May 1985, nuclear physics was considered moribund. “It was the scientists themselves who turned the field around,” said Hendrie.

The first thing he encountered at DOE was a fierce shootout among three organizations—a newly organized group of universities that called itself the Southeastern Universities Research Association (SURA), Argonne National Laboratory and MIT. Each had sent DOE a proposal to design and build what would become the continuous electron beam accelerator facility (CEBAF), now the Jefferson Lab. In the end, and not before powerful senators from Illinois and Virginia came on the scientific battleground, SURA won on the basis of a design selected by a DOE review panel. But when Hermann Grunder of the University of California, Berkeley, was chosen as CEBAF’s director, the winning design was scrapped and a new one drawn. Grunder built the machine for the designated \$513 million (without detectors) and got it running flawlessly. “CEBAF is my pride and joy,” said Hendrie.

He also was responsible for shepherding Brookhaven’s Relativistic Heavy Ion Collider, which is now one year away from completion. In addition, Hendrie was DOE’s representative in organizing the partnership with Canada to build the Sudbury Neutrino Observatory, located in an active nickel and copper mine 2200 m below the north shore of Lake Huron. He is credited as the parent of the University of Washington’s Nuclear Theory Institute and of Oak Ridge National Labo-

ratory’s radioactive ion beam facility.

In retirement, he will be close to the University of Washington, where he got his PhD in physics in 1964. After graduation, he began working at Lawrence Berkeley Laboratory, with two years off to teach at the University of Maryland (1978–80) and to serve as a program manager of DOE’s nuclear physics office (1981–83). “My first DOE experience was in the same office I later headed,” he mused.

Another longtime DOE physicist, **Robert E. Diebold**, retired at the end of June. As the department’s director of many oversight operations for the Superconducting Super Collider since 1987, Diebold was present at the birth and death of the proposed gargantuan accelerator. After the demise of the SSC, he was designated as one of its pallbearers and had a significant role in dispersing the project’s “estate.”

Diebold wasn’t always a high-energy bureaucrat. After completing his PhD thesis on the photoproduction of neutral pions at the Caltech synchrotron in 1962, he spent two years at CERN, working first on radiative muon capture at the synchrocyclotron and then on inelastic diffraction of high-energy pions in a heavy-liquid bubble chamber. On his return to the US in 1964, he joined the Stanford Linear Accelerator Center, where he used spectrometers for a series of experiments in photoproduction and hadron physics.

In 1969, he joined Argonne National Laboratory’s high-energy physics division and moved steadily up the ranks to become division director, a position he held from 1981–84. It was then that he was on assignment from Argonne to DOE in Germantown, Maryland, to take part in the SSC’s celebrated gestation. In 1987 he was elevated to the Federal government’s senior executive service to work on SSC management issues.

“Getting the SSC approved by the White House and Congress was fun,” Diebold recalled in an interview, “but picking up the pieces was painful. During and after the fall, I’ve often thought, Could I have done anything different to save the project? Unfortunately, the experiment can’t be replayed. Everybody connected with the SSC has a whipping boy. Some blame it on the White House, many on Congress, others on various physicists in the field or in a field outside high energy.”

In retrospect, what does Diebold now think about his years in the bureaucracy? “One gets a different view of the process from the center of things,” he said. “It’s useful and satisfying to

know you’re doing something more than serving with a group of 100 or 200 other physicists on a high-energy physics experiment—or is that little more than an excuse for forsaking research?”

At the Pentagon on 10 May, **Fernando (Frank) Fernandez** was appointed director of the Defense Advanced Research Projects Agency (DARPA), succeeding **Larry Lynn**, who had left in March. Until he joined DARPA, Fernandez was president and chairman of AETC Inc, a small research company he founded in 1994 in San Diego. AETC specializes in technologies to improve the detection and identification of objects deep underwater or underground.

Prior to starting up AETC, Fernandez was president and chairman of Areté Associates, another small applied research firm, which he organized in Los Angeles in 1976. He also has been a vice president of Physical Dynamics and a program manager of R&D Associates, where he directed the first radar measurements of ocean wave effects. From 1963 to 1972, he worked first as a researcher and later as associate group director for the Aerospace Corp. During that period, he received a PhD in aeronautics in 1969 from Caltech.

On 19 May, the Defense Department announced that **Jay C. Davis**, a nuclear physicist at Lawrence Livermore National Laboratory, had been selected as the first director of the Defense Threat Reduction Agency, which is being assembled from several organizations at the Pentagon. In discussing his defense reform initiative, Defense Secretary William Cohen characterized the new agency as the department’s centerpiece for monitoring and responding to the alarming prospect of proliferation of weapons of mass destruction. The agency will be formed by combining the On-Site Inspection Agency, the Defense Special Weapons Agency, the Defense Technology Security Administration and several functions within the Office of the Assistant Secretary for Nuclear, Chemical and Biological Defense Programs.

Davis, who received his bachelor’s and master’s degree in physics from the University of Texas at Austin and his PhD in physics from the University of Wisconsin at Madison, joined Livermore in 1971 and most recently was its associate director for Earth and environmental sciences. He was a scientific adviser to the United Nations Secretariat, participating in two UN inspections of suspected nuclear and chemical weapons sites in Iraq.

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