

WILL NSF AT LAST GET THE DIRECTOR SCIENCE DESERVES IN WALTER MASSEY?

After almost two months of rumors, the odds-on favorite to succeed Erich Bloch as director of the National Science Foundation was nominated for the job by President Bush on 14 September. Bush's choice is Walter E. Massey, formerly director of Argonne National Laboratory and now professor of physics and vice president for research at the University of Chicago, which operates Argonne. Massey is a highly regarded insider in science policy circles. He served as president of the American Association for the Advancement of Science during 1989 and is currently vice president of The American Physical Society, a position that would automatically elevate him to APS president in January 1992, though that is not likely to happen once he is confirmed by the Senate for NSF.

Bush's decision on Massey ends a summer of speculation about who would be picked as the ninth director of NSF, now in its 40th year as the nation's premier funding agency for academic science. An unscientific sampling of university researchers and administrators suggests that Massey is a prize catch. "Walter's almost too good to be true," says Leon M. Lederman, who resigned last year as director of Fermilab, Argonne's neighbor, and is now at the University of Chicago and president-elect of the AAAS. "His credentials are just right. He understands 'small science' because he was once an individual researcher and 'big science' because he has had that experience at Argonne. He also knows the importance of education better than most people because of his own roots." To Robert Rosenzweig, president of the Association of American Universities, which represents the top 58 research universities, Massey "is as ideal a choice as anyone could find."

Massey wasn't originally on the White House list of potential candidates for NSF's top spot. His name turned up on a short list submitted by a search committee led by Mary Good,

who heads the National Science Board, which is required under NSF's enabling legislation, enacted back in 1950, to recommend qualified people for a vacancy in the director's office. In fact, Massey was one of three physicists on the list. In July, D. Allan Bromley, the President's assistant for science and technology, asked Massey if he would be interested in heading NSF. "It wasn't an offer," Massey recalled in a telephone interview. "Allan made no promise and neither did I. For my part, I was reluctant. It meant another career change—one in a long series for me—and some sacrifices."

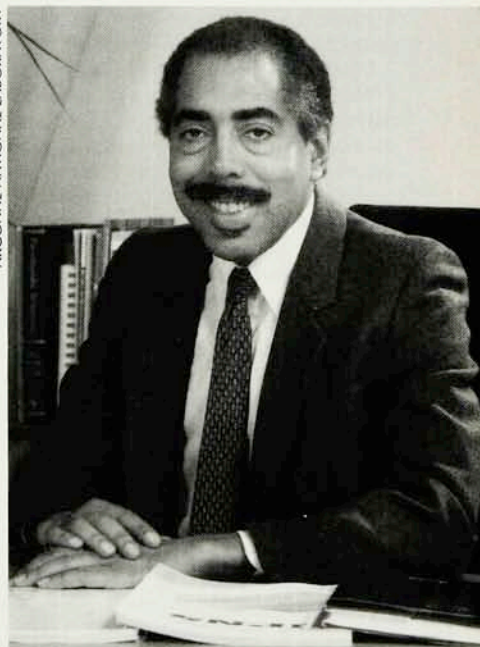
Member of corporate boards

Massey sits on the boards of a handful of Fortune 500 companies with headquarters in Chicago—namely, Amoco, First National Bank of Chicago, Motorola and the Tribune Co. In addition he is a director of the Rand Corporation and the John D. and Catherine T. MacArthur Foundation. In joining the government he would have to resign all his board memberships, which taken together with his University of Chicago salary pay more than twice the \$96 600 of the NSF director's job.

The White House knew that Massey would not require the investigations and paper trails that would be necessary for any of the other candidates. The FBI checks and financial disclosures had been completed before Massey was permitted to join the President's Council of Advisers on Science and Technology, which is under Bromley's chairmanship (see *PHYSICS TODAY*, March 1990, page 49). Because PCAST meets regularly with the President, its 12 members were cleared before their appointment.

On PCAST Massey had access to the President across a conference table or at lunch. He also was invited to private talks with Bush on issues ranging from pre-college science education to national energy strategies. "They got along famously," says a

ARGONNE NATIONAL LABORATORY



Massey: Right man at the right place.

PCAST member who prefers to remain unnamed. "I don't think Allan had trouble convincing the President that Walter is the best person to direct NSF for the next six years."

But there were others in the White House who weren't convinced. According to some accounts, John H. Sununu, the President's chief of staff, favored another candidate, an engineering school administrator at Tufts University, where Sununu once taught mechanical engineering before entering politics and becoming governor of New Hampshire. A struggle reportedly ensued between Bromley and Sununu, which seemed to end in Massey's favor in August, just before Sununu went to Moscow to arrange the summit conference between Bush and Soviet President Mikhail S. Gorbachev in Helsinki. On Sununu's return, however, Massey's nomination was held up again by unexpected second thoughts in the White House corridors of power.

Throughout the flap, Massey was in Europe on a six-month sabbatical. He has been studying the transfer of technology from academic and government labs to the marketplace in Western Europe, in anticipation of the economic unification of the European Community in 1992. He is examining the cooperative R&D projects that the EC has already put in place, such as Esprit, Eureka, JESSI and, of course, CERN (see *PHYSICS TODAY*, April 1990, page 41). In pursuit of his study, Massey has met with science ministers, business leaders and research administrators—establishment figures who can be useful connections to an NSF director.

Of course, Massey still needs to be confirmed by the Senate. It is unlikely the Senate will hold hearings on his confirmation before next January because lawmakers are now mired in intractable budget negotiations and, even more relevant for them, about one-third of the members are up for reelection in November.

Child of the deep South

Massey was born in Hattiesburg, Mississippi, in 1938. His father was a steelworker and his mother a schoolteacher, both of whom considered learning the surest way out of poverty. When he was in the 10th grade of his all-black school, his math talents were recognized and he was whisked off, without a high school diploma, to traditionally black Morehouse College in Atlanta on a Ford Foundation fellowship. After graduating from Morehouse, he attended Washington University in St. Louis on fellowships, earning his PhD in theoretical physics in 1966.

"I went into theoretical physics because I wanted something I could do by myself," he told an interviewer from *The Chicago Tribune* in 1985. "A long time ago I had a feeling that if I were ever to get out of Mississippi, escape that environment, I would have to do it myself. When you're black and you grow up segregated, so much depends on how people think of you. In theoretical physics, no one reading your papers would know if you were black or white. There's no such thing as black physics."

After a brief period as a postdoc at Washington University, he joined Argonne's research staff, working on the many-body theory of quantum liquids and solids. There he continued his studies, started as a pupil of Eugene Feenberg at Washington University, in applying correlated basis functions to both liquid and solid He^3 and He^4 . In 1968 he was offered an assistant professorship at the University of

Massey on the ideals of physics

As a candidate last year for vice president of The American Physical Society, Walter Massey prepared a platform on which he stood for election. In it, Massey showed foresight in setting forth his ideals and interests on the subject of physics. The statement, excerpts of which are published below, are likely to be developed further before the Senate during hearings on his confirmation as the ninth director of the National Science Foundation.

These are very exciting times for science, and for physics in particular. New insights and breakthroughs in areas ranging from elementary particles to condensed matter, from supercolliders to superconductivity, have generated increased interest in physics, not only within the scientific community but among the public at large. However, this excitement is not motivating American students to pursue careers in physics, nor has it resulted in significant increased support for physics research by the Federal government, state governments or private sources....

The idea of *physics as fun* unfortunately seems to have diminished over the past several years. The case for sustained support for research also has to be better articulated to those who decide on the funding of research.

The increased intertwining of science, public policy and economics has implications for the way we train graduate students. In order to better prepare future generations of physicists to deal in an increasingly complex world where their teaching and research will be more and more affected by issues outside of physics and indeed outside of science itself, graduate students should be exposed to these issues while in graduate school....

The role of the APS should be... to convey the seriousness and urgency of improving the quality of science education for all citizens. The changing demographics of the nation will require that we devote even more efforts to attracting women and underrepresented minorities to physics and other areas of science.

The shared tradition of our field, the integrity and unitary nature of the science of physics are what the APS must strive as primary goals to preserve.

Illinois and grabbed it. "That was the time when all the ferment was taking place on campuses," he told the *Tribune* reporter, "and I felt that I was not in the mainstream." Massey was central to black activities on campus. He has told friends how on his first night at Illinois he championed the cause of 264 black students who were jailed for protesting racial discrimination on campus. Massey went to the jailhouse to smooth things out. "Being black, I felt a certain responsibility," he has said.

In 1970, admitting to feeling "burnt out" by his activities in tutoring and counseling black students and recruiting young blacks for the university, Massey was invited to take an associate professorship at Brown University, an Ivy League school. There he extended his research on methods for calculating properties of mixtures of He^3 in He^4 and surface properties of quantum fluids. Possibly his most significant work was in collaboration with Humphrey Maris in explaining the anomalous attenuation of sound in superfluid He^4 in terms of three-phonon interactions. At Brown too he found that many blacks were simply unprepared to handle science and math courses. So Massey origin-

ated and directed Inner City Teachers of Science (abbreviated to ICTOS), a program for Brown students preparing to teach in Providence's ghetto area schools.

While at Brown, Massey grew increasingly concerned with university administration, and during 1974 he received a fellowship from the American Council on Education to study the subject at the University of California at Santa Cruz. The following year he became dean of Brown's undergraduate college, which made him the chief faculty administrator for curriculum development and student affairs. His work with minority students earned him the Distinguished Service Citation of the American Association of Physics Teachers in 1975. The same year he was named by *Change* magazine as one of the 100 most important educators in America. Though he continued teaching physics, he had almost no time for his own research in solid-state physics.

Massey's rising reputation as an administrator and educator came to the attention of many academic leaders, including Hanna Holborn Gray, then provost of nearby Yale University. In 1979, the year after she became president of the Universi-

ty of Chicago, Gray asked him to direct Argonne, which Chicago was about to take over entirely from a consortium of universities with which it shared the management of the lab for the Department of Energy. Bromley, who was at Yale at the time, recalled in an interview that Massey proved to be the right person in the right place at the right time. Virtually single-handedly, Walter changed Washington's impression of Argonne. At the time, Argonne was fraught with problems as it searched for a mission and sought to improve morale among its scientific staff. "He introduced what can only be called participatory democracy, and in turn the scientists responded with a dazzling array of ideas for the lab's research efforts," says Bromley. Gray claims that one of her great achievements was luring Massey from Brown to Chicago. "I can't say enough good about him," she declares. "He has an engaging style, a wonderful sense of humor, great clarity of intelligence, and he's a good listener to boot."

As Argonne's director, Massey was responsible in the early 1980s for one

of the nation's most diverse energy R&D labs, with a staff of nearly 4000 and an annual budget of more than \$250 million. He became a force in forging practical and lasting relationships involving industry, government and research universities. He was also active in civic affairs, heading the Chicago Mayor's Task Force on High Technology Development and serving on the Illinois Governor's Science Advisory Committee. He is still a trustee of the newly formed Academy for Mathematics and Science Teachers, formed to train some 17 000 Chicago public school teachers in math and science. The academy's most prominent champion is Lederman, who headed the campaign for DOE and the state to sponsor it.

Massey is already familiar with the NSF culture. From 1978 to 1984 he was a member of the National Science Board, the agency's policy-making body. In addition, he served on the physics advisory committee, the advisory committee on science and engineering education, and the committee on international programs.

The selection of Massey is inter-

preted in Washington as a conspicuous way of restoring NSF's small science programs, which are widely seen as having been weakened during Bloch's tenure by his support of engineering and supercomputer centers, and of strengthening the agency's pre-college and undergraduate education programs.

Those who know him characterize Massey as smart, savvy and very smooth. When the White House released its announcement about Massey's nomination, he took it all in stride. He was attending a board meeting of the First National Bank of Chicago and delayed his departure to Paris by four hours to answer phone calls from well-wishers and reporters.

"Walter's tickets are punched in all the right places," says a friend. Equally important will be Massey's style of operation in Washington. While Bloch was cocky and contentious, Massey is said to be conciliatory and charismatic. The friend notes: "Walter has no character flaws I know about and many strengths that will benefit NSF and science."

—IRWIN GOODWIN

AT NEW KIND OF SUMMIT, GORBACHEV SEEKS GREATER R&D COLLABORATIONS

In the annals of the 17 superpower summits, dating back to President Eisenhower's meeting with General Secretary Khrushchev in 1959, it is rare to find the leaders mentioning science. The closest Khrushchev came to the subject was when he slogged around Roswell Garst's 3000 acres of cornfields near Coon City, Iowa, in 1959 and saw the tangible benefits of scientific farming. On his return to the Soviet Union he found Garst's methods hard to introduce while Trofim Lysenko's crazy notions dominated crop genetics. In 1972, Nixon and Brezhnev reached agreements to cooperate in public health, environmental protection, outer-space exploration for peaceful purposes, and high-energy physics and magnetic-fusion research. At Geneva in 1985, Reagan and Gorbachev signed general agreements on a range of fields in science, technology, education and culture, which their sherpas had hauled to the summit. But the three-day Soviet-American summit conference held in Washington and Camp David in early June was different in style and scope.

It is natural in assessing summits to add up the subjects agreed to and subtract those still in disagreement,



Subsummit on science: US-USSR talks in the US Academy boardroom.

and by this arithmetic the Washington conference was only a modest success. With the exception of important new restrictions on chemical weapons and an agreement to reduce long-range nuclear weapons by a

third, many of the accords signed by Bush and Gorbachev were not only conventional but even humdrum: extension of the 1973 ocean studies agreement to include joint use of research ships and open publication