The U.S. government's atomic bomb project began with Albert Einstein's letter to President Franklin Roosevelt. And Gen. Leslie Groves brought the a-bomb to completion. But in between there was Vannevar Bush, the man behind the scenes of the atomic bomb project.

Bush joked that people called him "Van" because they didn't know how to pronounce Vannevar (vuh-NEE-ver; rhymes with "achiever"). Most people didn't know his name at all during World War II, and few today realize what he did to bring about the invention of the atomic bomb.

Bush was not one of the scientists who worked on the atomic bomb, nor was he a nuclear physicist. He confessed that most of the a-bomb science "was over my head" (Vannevar Bush, *Pieces of the Action*, pg. 60). But he was an engineer, an inventor, and, most importantly, a skilled administrator.

In 1932 Bush became a vice-president and dean at MIT. During the 1930s he grew worried by the increasing instability in Europe and Asia and by the possibility that America might be drawn into war. He accepted the presidency of the Carnegie Institute in 1939, largely for the opportunity to promote research and technology to the military. Most importantly, this and his position as chairman of the National Advisory Committee for Aeronautics marked his entrance into the world of Washington politics.

As the war in Europe grew, Bush felt the U.S. needed a much closer collaboration between its military, science, and industry to prepare for war. Using his new Washington connections, he arranged a meeting with President Roosevelt in June 1940.
Bush proposed the creation of an organization that would promote and organize military technology research. FDR immediately approved the creation and funding of the National Defense Resource Committee (NDRC), with Vannevar Bush as its chairman (G. Pascal Zachary, *Endless Frontier: Vannevar Bush, Engineer of the American Century*, pg. 110-112). Soon Bush was FDR's primary military research advisor.

Bush began bringing other military research committees under the NDRC to coordinate their efforts. One of them was the Uranium Committee, whose purpose was to study the possibility of building an atomic bomb. But the Uranium Committee worked very slowly and had little funding. And it continued its slow pace after it was absorbed into the NDRC. Bush did not want to divert resources and money from projects that might help the U.S. in World War II to a weapon whose feasibility he felt was "remote" (Zachary, pg. 191).

But three factors convinced Bush in 1941 that the U.S. should embark on an all-out program to make an atomic bomb:

- Urging from a few of the scientists who thought the a-bomb might be possible.
- The MAUD Report, written by British scientists, which said an a-bomb was possible and could be made in time to help during World War II.
- Most importantly, the fear that Germany would get an a-bomb. As Bush later put it, "the result in the hands of Hitler might indeed enable him to enslave the world. It was essential to get there first" (Bush, pg. 59).

Bush met with Roosevelt on Oct. 9, 1941. He told him of the MAUD Report's findings and of the possibility of a German a-bomb project. Bush obtained Roosevelt's approval for full-scale research and planning on the a-bomb. But plant construction and development of the bomb were not to begin without FDR's approval (Bush-Conant Files, RG 227, microfilm 1392, roll 1, folder 1, *Memorandum For Dr. Conant, Oct. 9, 1941*, National Archives; Harrison-Bundy Files, RG 77, microfilm 1108, roll 4, folder 58, Bush letter to FDR, March 9, 1942, National Archives). At Bush's request, the Top Policy Group was formed to advise FDR on atomic bomb policy (Martin Sherwin, *A World Destroyed*, pg. 37). On this small group, Bush would be the most influential. And Bush, along with his close colleague James Conant, would continue to run the a-bomb project.

The exact date that FDR gave the go-ahead to build an atomic bomb is uncertain. But by Dec. 1941 Bush was making plans for construction of the plants necessary to create fissionable material for the atomic bomb (Bush, pg. 61; Zachary, pg. 198-199, Richard Hewlett & Oscar Anderson, *The New World*, pg. 50-51). And on March 9, 1942 Bush sent a memo to FDR with a strong argument for building the a-bomb:

"Present opinion indicates that successful use is possible, and that this would be very important and might be determining in the war effort. It is also true that if the enemy arrived at results first it would be an exceedingly serious matter."

"The best estimates indicate completion [of the atomic bomb] in 1944, if every effort is made to expedite." (Harrison-Bundy Files, RG 77, microfilm 1108, roll 4, folder 58, *Report to the President, March 9, 1942*, National Archives).
Two days later, Bush received FDR’s reply:

"I think the whole thing should be pushed not only in regard to development, but also with due regard to time. This is very much of the essence." (Zachary, pg. 201).

Bush now had the go-ahead to build the atomic bomb and to build it quickly.

To keep the project and its large funding a secret and to obtain needed materials, Bush also requested in his March 9 memo that the project be turned over to the Army. FDR agreed, and the atomic bomb project was given to the Army in June 1942.

But Bush did not intend to relinquish his involvement with the atomic bomb. So at his request, the Military Policy Committee was formed in Sept. 1942 with Bush as its chairman. It would receive information from the Manhattan Project, as it was now called, discuss and examine a-bomb issues, and offer recommendations to President Roosevelt. The Manhattan Project would be run by Gen. Leslie Groves, and the Military Policy Committee would oversee it. (Hewlett & Anderson, pg. 81-82; Bush, pg. 61-62, 293; Sherwin, pg. 46).

FDR seldom shared his thoughts with anyone on the atomic bomb. But he expressed a concern to Bush at a Sept. 22, 1944 meeting about whether the a-bomb should be used:

"the President raised the question of whether this means should actually be used against the Japanese or whether it should be used only as a threat with full-scale experimentation in this country".

Bush replied that it would be some time yet until that complex decision needed to be made (Bush-Conant Files, RG 227, microfilm 1392, roll 5, folder 38, Memorandum For Dr. Conant, September 23, 1944, National Archives).

Bush’s concern over post-war atomic bomb problems increased as his influence with FDR waned. Bush was "much disturbed" to learn at his Sept. 22nd meeting with FDR that the President had discussed post-war nuclear relations with Churchill four days earlier without first consulting his advisors. Bush feared that a U.S.-U.K. nuclear relationship that excluded Russia "might well lead to extraordinary efforts on the part of Russia to establish its own position in the [nuclear weapons] field secretly, and might lead to a clash, say 20 years from now" (Bush-Conant Files, RG 227, microfilm 1392, roll 5, folder 38, Memorandum For Dr. Conant, September 25, 1944, National Archives).

Bush’s fears led him and James Conant to write two documents for Sec. of War Henry Stimson, in the hope that Stimson would recommend their advice to Roosevelt. In their Sept. 30, 1944 cover letter and reports, Bush and Conant advised, "This country has a temporary advantage which may disappear, or even reverse, if there is a secret arms race on this subject.” They warned that a nuclear arms race could lead to the hydrogen bomb and also to nuclear war. While not calling for international control of nuclear weapons or a ban, they recommended "complete international scientific and technical interchange on this subject, backed up by an international commission acting under an association of nations and having the authority to inspect", to begin after the first use of the atomic bomb. But no "manufacturing and military details” were to be divulged. (Bush-Conant
Files, RG 227, microfilm 1392, roll 4, folder 19, letter to The Secretary of War; Salient Points Concerning Future International Handling of Subject of Atomic Bombs; Supplementary Memorandum; all dated September 30, 1944, National Archives).

Bush and Conant also recommended that the first use of an atomic bomb "might be over enemy territory, or in our own country, with subsequent notice to Japan that the materials would be used against the Japanese mainland unless surrender was forthcoming." (Ibid.).

But the Sept. 30 recommendations were set aside by Stimson. The use of the atomic bomb and post-war problems seemed far away, compared with immediate war issues and increasing concerns over Russian behavior in Eastern Europe.

In early Dec. 1944 Bush and Conant began pressing the War Department to create an advisory committee on post-war U.S. nuclear legislation and planning. The result, half a year later, was the formation by Stimson of the Interim Committee. Bush and Conant were members, and they made the Committee members aware of their international nuclear concerns. But after the war, distrust between Russia and the West proved to be more powerful than efforts at nuclear cooperation.

Bush never expressed regrets over the bombing of Hiroshima and Nagasaki with the weapon he had helped to create. In 1949 he wrote:

"The use of the atomic bomb ended the war. Without doubt, the war would have ended before long in any case, for Japan had been brought nearly to her knees. ...Yet in the face of these facts we had planned and had in motion at the time the bomb fell a vast program of invasion by land forces. ...it was clear that such a campaign might have cost hundreds of thousands of casualties among our troops." (Vannevar Bush, Modern Arms and Free Men, pg. 91-92).

Bush also hoped the use of the atomic bomb would alert the world not only to the dangers of nuclear war but to the dangers of modern warfare in general. Shortly after the atomic bombings he wrote to a friend:

"...I believe that it is fortunate that the bomb arrived when it did and in a fully spectacular fashion. Otherwise we would have drifted into a situation, and from here out we at least approach it with our eyes open." (Vannevar Bush Papers, Box 76, R. D. Mershon file, Aug. 25, 1945 letter to Colonel R. D. Mershon, Library of Congress).

By promoting a closer relationship between government, science, and industry, Bush helped increase the military-industrial complex significantly. Ironically, he was never comfortable with big government during the post-WWII years or with the increased military influence over science. But by then the changes he had fostered had eclipsed his power to control them.

- Doug Long

For further information:
Vannevar Bush, *Modern Arms and Free Men*

Vannevar Bush, *Pieces of the Action*

*Vannevar Bush Papers*, Library of Congress

*Bush-Conant Files*, RG 227, microfilm 1392, National Archives


Martin Sherwin, *A World Destroyed*

G. Pascal Zachary, *Endless Frontier: Vannevar Bush, Engineer of the American Century*

G. Pascal Zachary, *Vannevar Bush Backs the Bomb* article on Bulletin of the Atomic Scientists web page