

SCIENTISTS AND NUCLEAR WEAPONS, 1945-2015

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On August 8, 2015, twenty-nine scientists sent a letter to President Obama in support of the agreement with Iran that would block (or at least significantly delay) Iran's pathways to obtain nuclear weapons. This continues a tradition that began seventy years ago of scientists having a role in educating the public, advising government officials, and helping shape policy about nuclear weapons.

Soon after the end of World War II, scientists mobilized themselves to address the pressing issues of how to deal with the many consequences of atomic energy. Of prime importance was the question of which government entity would control the research, development and production of atomic weapons, and any peaceful applications. Would it be the military, as it was during World War II, or a civilian agency, such as the newly created Atomic Energy Commission (AEC)?

The Federation of Atomic Scientists was founded on November 1, 1945, as a collection of groups from the major Manhattan Project sites. The following January, it renamed itself the Federation of American Scientists and soon had



Public Meeting Announcement, November 3, 1957.

Source: SCARC Holdings, Oregon State University Libraries.

nearly 3,000 members, many of whom had been part of the Manhattan Project. The standard history on the early years is documented in Alice Kimball Smith's *A Peril and a Hope: The Scientists Movement in America, 1945-47*. On almost every milestone throughout the Cold War, scientists weighed in with an opinion – sometimes they were for the issue and sometimes against. This was accomplished through formal federal advisory committees, testimony before Congressional Committees, and articles published in such magazines as *The Bulletin of the Atomic Scientists*, *Scientific American* and the *Public Interest Report*.

In the face of the Soviet Union detonating a nuclear bomb in August 1949, ending an American monopoly, the issue for President Harry Truman was how to respond. The decision to approve or reject development of a hydrogen bomb

involved major American scientists. The Chairman of the AEC's General Advisory Committee was J. Robert Oppenheimer. He and the majority of the committee members recommended against development of an H-bomb, even referring to it as "a weapon of genocide." Stronger opposition was stated by a minority that included Enrico Fermi and I. I. Rabi. Included in their lengthy report, they believed that "it is necessarily an evil thing considered in any light." Edward Teller and his supporters, Ernest Lawrence, John von Neumann, and Luis Alvarez (among others), pressed Truman to proceed. The President's press release of January 31, 1950 directed the AEC to continue "work on all forms of atomic weapons, including the so-called hydrogen or super-bomb."

Scientists were later involved in the debate over a limited test ban treaty and whether radiation from atmospheric detonations was harmful. For example, in 1962, FAS member Linus Pauling won a Nobel Peace Prize for his efforts in mobilizing millions of

Americans, especially mothers, against nuclear testing, and in 1962 and 1963, FAS Chairman Freeman Dyson and other members of the FAS Council were very active in educating Congress about the test ban. (See the article in this issue by Professor Dyson.) More recently, the Comprehensive Test Ban Treaty was debated in the Senate in 1999, and although testing by the United States stopped in 1992, the treaty remains un-ratified. For decades from the late 1960s, scientists (particularly many FAS affiliated scientists) have had opinions about strategic arms control treaties with the Soviet Union and Russia, such as SALT and START, as well as the Intermediate Nuclear Forces treaty of 1987. In the

THE EMERGENCY COMMITTEE OF ATOMIC SCIENTISTS MEETS



The group in Princeton, N. J., yesterday where they issued an appeal for public subscription of \$1,000,000 to finance a nation-wide educational campaign on the social implications of atomic energy. Seated (left to right): Prof. Harold C. Urey, University of Chicago; Prof. Albert Einstein, Institute for Advanced Study, and Prof. Selig Hecht, Columbia University. Standing (left to right): Prof. Victor F. Weisskopf, Massachusetts Institute of Technology; Prof. Leo S. Szilard, University of Chicago; Prof. Hans A. Bethe, Cornell University; Prof. Thorfin R. Hogness, University of Chicago, and Prof. Philip M. Morse, Massachusetts Institute of Technology.

Associated Press

"Atom Bombs Held Cheap, Plentiful." *New York Times*, November, 18 1946.

Source: SCARC Holdings, Oregon State University Libraries.

1980s, FAS affiliated scientists (notably Hans Bethe, Frank von Hippel, and Richard L. Garwin) advised the U.S. government and the larger public about the strategic risks and technical challenges of the Strategic Defense Initiative, or the so-called “Star Wars missile defense system.” More recently, in 2000, FAS mobilized 50 Nobel Laureates to sign a letter, written by Hans Bethe, to advise then-President Bill Clinton to defer deployment of even a limited national missile defense system until the strategic and technical concerns were resolved. President Clinton did defer deployment, but his successor President George W. Bush went ahead with deployment and in parallel, withdrew the United States from the 1972 Anti-Ballistic Missile (ABM) Treaty.

On March 29, 2016, FAS published a letter, signed by 35 Nobel Laureates in the sciences, to the national leaders at the 2016 Nuclear Security Summit, held in Washington, D.C. from March 31 to April 1. The letter urged global action on three technical issues that, if fully resolved, would reduce the risks of nuclear and radiological terrorism close to zero in those three sectors. [See fas.org for a copy of the letter and full list of signatories.]

Throughout its history, the Federation of American Scientists has been an organization where scientists have served on its Board of Directors and the FAS Advisory Council and debated public policy positions on nuclear weapon matters. From the late 1940s through the 1990s, the Council would regularly issue policy position statements with the intention to advise political leaders. [Refer to previous issues of the *FAS Newsletter* and the *Public Interest Report* for news of these statements.]

In the 21st century, FAS remains committed to providing a platform for scientists to advise government officials about nuclear policy. Recently, FAS has been forming task forces and study groups (that include scientists and engineers, as well as legal and political experts) to examine the technical and policy aspects of challenging problems in nuclear security, nonproliferation, and arms control. Also, through the Nuclear Information Project and through publications of the Nuclear Notebook (distributed by the Bulletin of the Atomic Scientists), FAS continues to serve as the leading source of information on nuclear weapons around the world. In sum, FAS has (and will continue to have) an enduring role in ensuring that scientifically credible information and analysis remain an essential part of the public debate.