

Cold War science

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The Cuban Missile Crisis of 1962 reached its climax on 27 October. By then, the US Navy had been blockading the Caribbean island for almost a week to prevent Soviet ships from delivering any more nuclear weapons. When US destroyers located a Soviet submarine near the cordon, they dropped small, “training” depth charges to compel the vessel to surface.

The commanders of the US warships did not know that the Soviet sub, the *B-59*, was armed with nuclear torpedoes. Because the *B-59* had been evading detection underwater, it had been out of radio contact with Moscow for three days. Its officers and crew did not know whether war between the US and the Soviet Union had already broken out.

Ordinarily, under the sub’s rules of engagement, the captain, Valentin Savitsky, could launch his nuclear torpedoes at enemy targets, provided he obtained the approval of the sub’s political officer, Ivan Maslennikov. The two men were in favor of attacking the US warships, but the presence on board of a third senior officer, flotilla commander Vasili Arkhipov, required all three to agree.

Arkhipov demurred. The sub surfaced. That same day, US president John F. Kennedy and Soviet leader Nikita Khrushchev signed the agreement that resolved the crisis. Two days later, I was born.

The Cold War went on to simmer for most of the rest of my life. As a schoolboy growing up in North Wales, I studied the technical specifications of MiG-25 and F-15 jet fighters, T-72 and Leopard main battle tanks, and other modern weaponry. When I was an undergraduate in London in the 1980s, the principal conflict involved the siting of medium-range nuclear missiles in Europe, US Pershing IIs and ground-based cruise missiles in NATO countries, and Soviet SS-20s in Warsaw Pact countries. A West German politician pithily summarized the missiles’ dire threat: “The shorter the range, the deader the Germans.”

But what I barely knew as my scientific education progressed was how profoundly

the Cold War shaped science, especially in the US. Audra Wolfe surveys that influence in her 2013 book, *Competing with the Soviets: Science, Technology, and the State in Cold War America* (Johns Hopkins University Press). In the 1950s the US Department of Defense provided one-third of all R&D funding in US industry. Half of the Office of Naval Research’s R&D funding went to nonmilitary research, mostly at universities.

The Cold War’s influence on science was not confined to how science was funded. In a 2015 article in *Historical Studies in the Natural Sciences*, Benjamin Wilson argues that the prospect in the early 1960s of shooting down enemy missiles with lasers begat an entire field of physics: nonlinear optics.

What’s more, the field’s originators developed a new style of working that smoothly combined their secret research for the Institute for Defense Analyses, Rand Corp, and other government contractors with their open research at the elite universities that employed them.

The feature article on page 40 adds a complementary and contrasting view of Cold War research. In “The peaceful atom comes to campus,” Joseph Martin recounts the history of a remarkable institution. Launched in 1948 to honor University of Michigan alumni who fought and fell in World War II, the Michigan Memorial-Phoenix Project became a privately funded foundation that supported research into the peaceful uses of nuclear physics. Among its successful projects: Donald Glaser’s invention of the bubble chamber.

Unlike the Cold War, which ended in 1991, the Phoenix Project is still going strong. **PT**



THE USS BARRY was among the warships that blockaded Cuba in 1962. From 1984 to 2015, the destroyer served as a museum ship at the Washington Navy Yard.