



Alexander DeVolpi, SMA '49

Autobiography

[After attending Staunton Military Academy for seven years and] earning an undergraduate degree in journalism from Washington and Lee University, I served on active duty [as a commissioned officer] with the U.S. Navy in the mid-1950s. Later I received a Ph.D. in physics (and MS in nuclear engineering physics) from Virginia Polytechnic Institute, Blacksburg, Virginia, and a certificate from the Argonne International Institute of Nuclear Science and Engineering.

As an arms-control physicist, I have been active in nuclear-arms policy and treaty-verification technology studies for over 25 years. Being retired, I can write on topics from first-hand experience dealing with the interface of technology and society. To communicate with credibility about complex issues requires relevant knowledge and experience.

My professional activities at Argonne National Laboratory, Argonne, Illinois (and other national laboratories) involved nearly 40 years of lab, field, and analytical activities in instrumentation, nuclear physics, nuclear engineering, reactor safety, radioisotopes, experiments, verification technology, and arms control. I have technical papers, review articles, and patents to back this up.

My technical resume includes numerous projects initiated on the methodology and technology of treaty verification, including a technique for relatively unintrusive counting of nuclear-warhead multiplicity. Other activities or proposals involved nuclear-warhead detection and inspection on Earth and in space, fissile-material conversion, nuclear-facility monitoring, aerosol applications, weapons dismantlement, tagging and sealing, chemical-weapons verification, laser-brightness monitoring, cargo and luggage inspection, contraband-drug detection, and cooperative treaty-verification measures.

My official role at Argonne National Laboratory in arms-control and verification technology led me to relevant contracts with various U.S. and foreign agencies: the Defense Nuclear Agency, On-Site Inspection Agency, all the Department of Energy weapons labs, with the Departments of Defense and State, and at overseas laboratories, including the former Soviet Union.

On the subject of nuclear-weapons nonproliferation, I have been author or coauthor of several books (author of *Proliferation, Plutonium, and Policy* ; co-author of *Born Secret: The H-bomb, The Progressive Case, and National Security*; lead author of a two-volume book, *Nuclear Shadowboxing: Contemporary Threats from Cold War Weaponry* (2004, 2005), and a number of technical review articles (including "Fissile Materials and Nuclear Weapons Proliferation," *Annual Review of Nuclear and Particle Science* and definitive entries in the McGraw-Hill *Encyclopedia of Science and Technology* on the "Atom bomb," the "Hydrogen bomb," and "Critical mass" (which touches on nuclear proliferation).

Now completed in 2009 is "Nuclear Insights: The Cold War Legacy," a three-volume monograph: Volume 1, "Cold War Weaponry (An Insider History), Volume 2, "Nuclear Threats and Prospects (A

Knowledgeable Assessment)," and Volume 3: "Nuclear Reductions (A Technically Informed Perspective."

The three volumes of Nuclear Insights are straightforward distillation of a coauthored book, "Nuclear Shadowboxing." These volumes differentiate themselves from other Cold War treatments, not only because of events witnessed first- and second-hand, but also because of a collective presence, capability and experience to understand and interpret crucial events that had a large nuclear technology component.

Having served as principal investigator in a variety of research projects, I gained considerable experience in neutron physics and nuclear diagnostics, later managing nuclear diagnostics for the Reactor Analysis and Safety Division at Argonne, and becoming technical manager of the arms-control and nonproliferation program.

One of my half-dozen patents is for the neutron/gamma hodoscope, an instrument system used in the United States and France to image the motion of fissile material being tested under simulated accident conditions in special transient reactors.

My experience in the science of measurements has served me well in writing papers about climate change data analysis. I spent nearly 20 years doing quantitative and qualitative nuclear measurements, and wrote technical papers and received patents on radiation measurements, and detectors of neutron and gamma radiation. Also, I have worked with the major metrology centers in the world, including the International Bureau of Weights and Measures, the Euratom laboratories, the UK standards laboratory, and the U.S. National Bureau of Standards. All of this has equipped me well for probability assessment and statistical analysis.

Peer recognition has been received in Who's Who in Frontiers of Science and Technology, American Men and Women of Science, Who's Who in Science and Engineering, and other biographies, and in being elected a Fellow of the American Physical Society for contributions to arms-control verification and public enlightenment on the consequences of modern technology.

Gaining the rank of Lieutenant Commander (retired) in the U.S. Naval Reserve as a result of 17 years on active duty and in the reserves, I had numerous assignments to the Naval Research Laboratory and the Radiological Defense Laboratory, participating in analysis of fissile-material safeguards and arms-control verification technology — including studies in 1969 regarding detection of ballistic-missile RV multiple-warheads, and monitoring for nuclear weapons on the seabed.

In a technical capacity, I have visited many national and international laboratories and represented Argonne at various working and advisory groups — on arms control, verification technology, radiation detection, tagging, on-site inspection procedures, and ground-based laser verification.

As a citizen-scientist, I have been active in public-interest arms-control issues, having participated as technical consultant in the Federation of American Scientists/Natural Resources Defense Council joint project with the Soviets on nuclear-warhead dismantlement; served as an elected member of the national council of the Federation of American Scientists in 1988-92; and co-founded Concerned Argonne Scientists. I also worked with European arms-control projects involving Soviet and Eastern European counterparts before the Cold War came to an end. (www.NuclearShadowboxing.Info.)

My volunteer activities included contribution of technical expertise to various NGO groups, including the Arms Control Association and the Center for Defense Information.

Personal life centers around a new home in Oceanside, CA, with home partner, Ms. Bobbi Thornton.

From my first marriage, I have four children, now grown up, two of whom have their own families. I keep in shape by playing handball, ping-pong, and swimming; and enjoying — time permitting — poker, fishing, and woodworking as hobbies. Two or three book projects about family history and genealogy are now getting my attention. [One of those books about family history is *Lover, Soldier, Reprobate* written about his father. He also wrote *Nuclear Insights: The Cold War Legacy*, Volumes 1, 2 and 3; co-authored *Born Secret: The H-Bomb, the Progressive Case, and National Security* with Gerald E. Marsh, George S. Stanford and Ted A. Postol), and co-authored *Nuclear Shadow Boxing – Contemporary Threats from Cold War Weaponry*, Volumes 1 and 2, with Alexander Devolpi, Vladimir E. Minkov, Vadim A. Simonenko, and George S. Stanford.]

Edits by Kelly McGavock, SMA '59