

The Reasons for My Resignation from Lawrence Livermore National Laboratory

"The unleashed power of the atom has changed everything except our thinking. Thus, we are drifting toward catastrophe beyond conception. We shall require a substantially new manner of thinking if mankind is to survive." -- Albert Einstein (1879-1955)

We have a moral obligation and duty to think, speak, and act first as citizens for a peaceful world, and next as scientists. The higher our education is, the higher our responsibilities are for a humane world. Should we talk about science before we even think about what our science is for? That is precisely what we are doing. And that is why I resigned from my position as a scientist in the nuclear weapons program at the Lawrence Livermore National Laboratory (LLNL) as of January 31, 2000.

Albert Einstein warned us about the unleashed power of the atom: "This basic force of the universe cannot be fitted into the outmoded concept of narrow nationalisms." The Lawrence Livermore National Laboratory's (LLNL) logo is: "Science in the National Interest." I believe that if Albert Einstein were alive today, not only would he not be working at LLNL, but he would also be strongly condemning its mission. And what is the logo of Los Alamos National Laboratory? "Science Serving Society." Do the national labs believe that they are serving society by endangering its very existence?

My purpose in writing this letter is to make known the reason for my resignation from LLNL. It is simply that my conscience does not allow me to work for the development or maintenance of nuclear weapons. In direct relation to this, I would also like to make known my concern about the hiring practices of the Lab. When I was hired by LLNL, I was not adequately informed about the specifics of my job responsibilities. After being hired, I found myself expected to work on weapons maintenance in the Stockpile Stewardship Program. I believe that I am not alone in having this experience of not being directly informed.

I find it quite curious that informed consent is common practice in our society, yet prospective employees at the US nuclear weapons laboratories are not asked to provide written consent to their job responsibilities before being hired. This attitude of indirectness is demonstrated in US Department of Energy (DOE) Secretary Bill Richardson's own words on another topic during an interview with CNN on Jan. 29th: "Yes, there were exposures, the workers weren't actively lied to, but they were not informed of potential exposures, so it's not a direct lie, but it could be they were not leveled with." And, in the New York Times which reported the story first, he said: "This is the first time the government is acknowledging that people got cancer from radiation exposure in the plants." A preliminary study by the White House and DOE cited elevated rates of 22 categories of cancer among 600,000 workers at 14 nuclear weapons plants, including Livermore Lab. For 50 years, workers in the DOE's nuclear weapons complex have suffered toxic and radioactive exposures resulting in illness and premature death. All these years the government spent millions of dollars to fight claims by sick employees or their widows. The US government's recent acknowledgment raises serious questions. If the workers had been informed of potential exposures, would they have joined the military complex to do nuclear weapons work?

I am asking DOE the same question: If many scientists knew that sooner or later they would find themselves entangled in nuclear weapons work, would they have joined the National Labs? I believe that we are dealing with unethical practices in not leveling with people and that serious questions are raised regarding the integrity of our leaders. The outcome, as in every similar case, is that no one individual by name is accountable, and eventually it is the taxpayers of the country who pay for all these wrongdoings. Upon realizing on the one hand the obviously questionable practices in the workplace, and on the other hand, the real mission of the national scientific laboratories, I decided to withhold my scientific skills and resign. I cannot forget what my ancient Greek teachers taught me, which I now see being practiced worldwide: "Science without virtue is immoral science." - Plato.

On November 5, 1999 in NewsLine, an LLNL newsletter, Edward Teller addressed Livermore's citizens of the year 2100. He wrote, "This letter is written at a time of both great fortune and very real danger." He continued, "The United States has won the Cold War without any bloodshed. This victory was made possible by scientific advances and technical progress that sufficed to eliminate violent confrontation between the United States and the Soviet Union." He expressed his confidence in the coming generations, saying that they will find a way to avoid the misuse of technology. He also mentioned brotherhood. Nevertheless, despite the hopes and confidence of the father of the hydrogen bomb for a safe future, many others know that the real world is headed towards new high-tech arms races and increasing dangers of global confrontations.

The Washington Post on December 9, 1999 reported: "The Tennessee Valley Authority approved a plan today to produce nuclear weapons material in a commercial reactor for the first time in U.S. history, breaching a long-standing wall between civilian and military nuclear power." In other words, the electricity producers will now be producing nuclear weapons. The December 10, 1999 Washington Post reports: "A blue-ribbon scientific panel, appointed by Congress to review the U.S. nuclear stockpile, has recommended that the Department of Energy design a new, billion-dollar plutonium weapons plant and organize teams at the nation's nuclear laboratories to design new warheads for the first time in more than a decade. But the Russian parliament still has not ratified START II, and the Russian government has warned that the U.S. rejection of the Comprehensive Test Ban Treaty, along with America's efforts to amend the landmark 1972 Anti-Ballistic Missile treaty, could spark a new arms race." On the same day, The Washington Post also reported that "President Boris Yeltsin, visiting China to secure support for Russia's military campaign in Chechnya, launched a surprising verbal assault on President Clinton today, including a blunt reminder that Russia is a nuclear power."

How can we continue to go back home after work every day and look in our children's eyes and tell them that we are working for a safer world for them? Have our hearts become stones? Every person alive today, if we go deep enough into the contradiction between one's conscience and one's outward life, is in a state of despair. We, the scientists, have tried to justify our involvement in building and maintaining nuclear arsenals by claiming that we are doing it for peace. How can we have peace when, by our work on weapons, we are raising fear in the hearts of those who do not have the same technology for killing?

The latest news demonstrates how the situation has deteriorated in just a very short time. Reuters, on 19 January 2000, quoted the following from Rossiskaya Gazeta's 18th January edition: "Acting Russian President Vladimir Putin signed into law a new national security strategy that lowers the threshold on first-use of nuclear weapons. The National Security Concept of the Russian Federation allows the use of all existing forces including nuclear weapons to oppose any attack, nuclear or conventional, if other efforts fail to repel the aggressor and allows the first use of nuclear arms in case of a threat to the existence of the Russian Federation." The new military guidance proclaims Russia's intention to oppose American domination of the international arena. The doctrine states that "the Russian Federation must have nuclear forces capable of delivering specified damage to any aggressor state or a coalition of states in any situation."

Not surprisingly, the new Russian military doctrine mirrors current U.S. nuclear weapons policy: "Our nuclear deterrent posture is one of the most visible and important examples of how U.S. military capabilities can be used effectively to deter aggression and coercion, as reaffirmed in a Presidential Decision Directive signed by President Clinton in November 1997. Nuclear weapons serve as a hedge against an uncertain future, a guarantee of our security commitments to allies and a disincentive to those who would contemplate developing or otherwise acquiring their own nuclear weapons ... The United States must continue to maintain a robust triad of strategic forces sufficient to deter any hostile foreign leadership with access to nuclear forces and to convince it that seeking a nuclear advantage would be futile. We must also ensure the continued viability of the infrastructure that supports U.S. nuclear forces and weapons. The Stockpile Stewardship Program will guarantee the safety and reliability of our nuclear weapons under the

Comprehensive Test Ban Treaty." -- A National Security Strategy For a New Century, The White House, October 1998, p. 12.

True peace is based on mutual trust. The argument that I have heard so many times from weapons scientists is this: Since the last big war, we have not had another one, so the invention of terrible weapons of destruction has put an end to war because, they say, everyone knows how terrible it would be if they dared to start one. This is an error. Who has led them to this amazing delusion? Who has led them to lose themselves in the temporary daily demands of their scientific careers and to forget about the eternal demands of their conscience?

My fellow scientists and engineers, the national labs must change from labs of war to labs of peace if there is to be a chance to avoid the extinction of all life on earth. Environmental work is not the same as work on weapons, and environmental work is not environmental work when it creates space for more weapons. Does nonproliferation work advance the goal of nonproliferation when, at the same time, we are building more weapons? Who are we trying to fool? Many scientists are hired at the national labs to do environmental or other work, seemingly not directly related to weapons work, but because of budgetary considerations, these scientists sooner or later find themselves being expected to work on the making or maintenance of nuclear weapons. I propose therefore the use of an informed consent document during these hires so such unwelcome surprises can be avoided.

Those who work on environmental projects or nonproliferation projects at the nuclear weapons labs have not realized that such a thing is an illusion. What environmental work? What nonproliferation work? On October 13, 1999, the U.S. Senate voted down the 40-years-in-the-making Comprehensive Test Ban Treaty. Now, through the deceptively-named "Stockpile Stewardship Program", not only are weapons expected to be tested, but new weapons are also to be made. In simple words, we are burying the waste so we can make more, and building more weapons so that other nations will follow our example.

It is apparent that DOE is also luring civilian establishments to participate in the development of a new generation nuclear arsenal and is seeking to incorporate the nation's leading universities into an effort to attract and train yet another generation of nuclear weapons designers. But I consider the most inexcusable DOE practice to be the luring of high school students into the world of weapons. Innocent and naive young people are invited every summer into the national nuclear weapons laboratories. They are taught the myth of keeping the world safe by building and maintaining thousands of constantly improved nuclear warheads. But their teachers fail to tell them that the fate of these weapons will ultimately be determined by the mood of a future dictator, and that it will be too late then for anyone to stop the great violence to be committed against humanity.

It seems that the world has already forgotten the Cuban missile crisis. The survival of humanity hung on the decision of one man, Nikita Khrushchev: Would he or would he not yield to the U.S. ultimatum? Prudently, Henry Bienen a political scientist and president of Northwestern University pointed out several years ago that even rational leaders can make very bad miscalculations.

Today's high school students are not told that nuclear weapons are designed to slaughter men, women and children by thousands, by millions. How much do they know about why these weapons are made and how and where they may be used? Undoubtedly, no young man or woman would agree to work on nuclear weapons if he or she had been on the ground in just one of the many wars that the U.S. or Russia or any other country has unleashed on so many poor people in the name of humanitarianism. If they had seen their mother being split into pieces, they would not only refuse to be associated in any way with weapons of mass destruction, they would also protest the existence of such establishments as the weapons' labs.

Earlier this year, a new treaty was signed banning child soldiers under 18 in combat. After six years of negotiations, governments agreed on January 22nd in Geneva to establish eighteen as the minimum age for soldier participation in armed conflicts. Are we going to continue luring our minor children into nuclear weapons laboratories? We must stop this practice immediately. Are we going to continue recruiting our youngsters into the military even before they graduate from high school? Wouldn't it be better for every one of us to recruit them to become soldiers for peace instead of war? Should we then be surprised that in our world there is not peace, but violence?

In the December 17, 1999 issue of NEWSLINE we read the headline, "Teachers Learn Lessons in Nuclear Materials Research." What is wrong with that? Read on: "A group of 13 teachers from six states are in Monterey today as a Critical Issues Forum learning how to conduct research with their students on issues related to the disposition of nuclear materials: suggested activities included researching the basics of radiation, the nuclear fuel cycle and weapons production, maintenance, storage and disposal." As the article says, the objective of the forum is to help teachers motivate the next generation of scientists, policy analysts and military officers required to manage the U.S. nuclear infrastructure.

We cannot ignore these facts and go on with our science. Science, which ought always to be aiming at the good of humanity, is assisting in the work of destruction, and is constantly inventing new means for killing the greatest number of people in the shortest amount of time. This twentieth century proved to be a century of inhuman slaughter. In the 1914 war, 15% of casualties were civilian; in 1939, 50%; in the 1950s, 75%; in the 1990s, 90% of war casualties were civilian. Science that is used to terrorize people, kill them, or make them invalids is immoral science. It must be abolished immediately. Those who participate in acts of violence against humanity by using, making, or servicing weapons in the name of human rights or under any other name, in every nation of our world, must remove themselves from their jobs today. Surely any one of us seeing one of his/her children killed or mutilated as a result of "collateral" bomb damage, as the pictures from every war show, would immediately resign from his/her job and condemn every act of violence. If we do not act now, we may very well see our own children become victims in ways we have never dreamed of and never expected.

No matter how much we try to justify keeping a job that promotes violence, deep down we know that we must find a different job. We know there are thousands of jobs around us that do not necessitate making excuses to keep them. We spend the majority of our lives tirelessly working to ensure our own personal security, while at the same time we are blindly putting it at risk by our own thoughtless actions. The contradiction between what we love to do and what we are forced to do by our fears has brought us into a state of despair. When we make our work the centerpiece of our existence, then we will find happiness.

Einstein wrote: "Heroism on command, senseless violence, and all the loathsome nonsense that goes by the name of patriotism -- how passionately I hate them!" Now we have substituted the words "national security" for patriotism in order to fool ourselves. This is straight talk to every citizen of every nation that is involved with "legal" violence. Employees, like soldiers, are commanded to kill people whom they do not know. They kill and are killed, and none of them knows why or to what end.

This letter is an appeal to every secretary, technician, custodian, scientist, engineer, and any other person whose participation supports the world war machine. It is a wake-up call before tomorrow comes. Albert Einstein said: "I know not with what weapons World War III will be fought, but World War IV will be fought with sticks and stones." If there is any hope for the survival of humanity it is cooperative survival. It is not competitive survival. A military-oriented world economy must change soon to a people's needs-oriented world economy.

I know without any doubt in my heart that the people who work on nuclear weapons are as good as people who work anywhere else. I have met some people with such beautiful souls that I find it

impossible to explain why they would work on weapons. The only way I can explain it to myself is that they are in a state of hypnosis. They are working on science in a detached way, not thinking about what will happen as a result outside the laboratory.

Let's not comfort ourselves that someone else, man or God, is watching out for humanity. The train is now on the bridge and is going very fast. The first compartment is full of scientists and educated people who profess that they know what they are doing. The middle compartments are full of people, nearly six billion people! The last compartment is loaded with ammunition, violence and death. The compartments are being held together very tightly. I am appealing to all who read these words to come out of the train now. You will hear this appeal again and again, every time you look in the mirror of your soul, every time you look in the eyes of your children and in the eyes of the people you love, and yes every time you look at a flower and at a bird. Come out.

You will not be the first to come out. Many eminent scientists have seen the wisdom of such action. Joseph Rotblat who left the Manhattan Project in a courageous act of moral protest was awarded the Nobel Peace Prize in 1995 for his tireless efforts on behalf of nuclear disarmament. Theodore Taylor was a prominent designer of nuclear weapons at Los Alamos in the 1950's. He left his position and the lab and later came out as an ardent proponent of nuclear abolition. Now in his 70s, he is still an anti-nuclear activist. Worldwide there are thousands of anti-nuclear organizations, a fact that is often not known by many scientists or the public.

In December 1999, Einstein was chosen as Time magazine's "Man of the Century." Most articles describe only his contribution to the discovery of nuclear energy; however, they fail to even mention that he was a strong advocate of anti-war movements, a peace activist. I wonder how many scientists and world citizens have ever read the Russell-Einstein Manifesto?

"We appeal, as human beings, to human beings: Remember your humanity and forget the rest. If you can do so, the way lies open to a new paradise; if you cannot, there lies before you the risk of universal death.

The general public, and even many men in positions of authority, has not realized what would be involved in a war with nuclear bombs. The general public still thinks in terms of the obliteration of cities. People can scarcely bring themselves to grasp that they, individually, and those whom they love are in imminent danger of perishing agonizingly."

Russian President Boris Yeltsin speaking in China on December 13, 1999 said: "Clinton allowed himself to pressure Russia yesterday. He must have forgotten for a moment what Russia is. It has a full arsenal of nuclear weapons." We do not have the power to control the rhetoric of our world leaders, but we have the choice to work for peace and not for war. World wars have started with such rhetoric. What makes us think that our times are safer? The need for national security is so exaggerated and the public opinion of one nation is so excited against another that it's not hard to imagine that a statement made in anger could bring about a world conflagration. Thus I appeal to you for introspection and serious consideration of your actions. If humanity has need for science, it is not for immoral science. How many scientists are necessary to change immoral science to moral science? A crime into a virtue? One man putting together some chemicals in a garage to make a bomb is breaking the law even though he may not kill anyone. If he does kill a fellow creature, he is tried as a murderer. If two men do so, they too, are called murderers. But a weapons laboratory, a government, or a nation can make thousands of nuclear bombs, threatening to kill as many people as it chooses, and that will not be called murder, but a great and noble action. As Tolstoy said, "The misdeeds of our rulers become our own, if we, knowing that they are misdeeds, assist in carrying them out." Our world cries out for compassionate, wise,

courageous, and skillful leaders to provide vision and direction. The enemy is within us and keeps us from taking action.

On January 21st, President Clinton in his speech at the California Institute of Technology said: "We have to do a better job of having an open debate about the responsibilities that all these advances and discoveries will clearly impose. Just because we can do something doesn't mean we should. It is incumbent, therefore, upon both scientists and public servants to involve the public in a great debate to ensure that science serves humanity -- always-- and not the other way around." But serious questions exist with respect to the effectiveness of the chain of command or the sincerity of these statements. There are too many instances in which the U.S. has not lived up to these proposed standards.

In his State of the Union Address, Clinton described a \$2.8 billion increase in the 21st Century Research Fund, "the largest increase in civilian research in a generation." But again, what is "civilian research?" In the April 5, 1999 issue of Chemical and Engineering News, the title of the cover story read: "HIGH EXPLOSIVES, Supercomputers Harnessed to Model Conflagrations in Detail." Within this article we see pictures of graduate students posing together with their professors while holding models of the HMX explosive. The article states clearly that HMX is a well-known military explosive and that twenty faculty members from different scientific disciplines will be working with more than 50 graduate students in the next five years on similar projects. The DOE is funding the projects, providing millions of dollars and access to the supercomputers housed at the U.S.'s three weapons labs. The DOE apparently is using academic intellectual resources to do work on nuclear weapons. Here we see how civilian research and military research are losing their identity and becoming one. Universities even contribute leveraging funds for these experiments.

We urgently need an international campaign to help scientists and engineers see that they must withhold their skills from war-science. I hope that my letter of appeal will start this campaign and that individuals from every nation will offer their support for the idea. My letter is a wake up call to all those who can hear the call of their conscience. And for those of us who try to comfort ourselves while daring to call ourselves Christians, let it be known that Christianity is not compatible with war, with preparation for war, even for preparation to deter war. It never was. I wonder where the words on the dollar bill "IN GOD WE TRUST" came from? Until our warriors are disarmed and our armies disbanded, we have no right to say that we trust in God.

Having contemplated on these matters, and having recognized the real and misrepresented mission of the U.S. National Laboratories, I have decided to resign. I cannot live my life in a way that goes against my conscience.

These are some of the issues that concerned scientists and engineers should immediately start working on worldwide:

- 1) Establish informed consent hiring practices at national weapons laboratories and all other scientific/military establishments.
- 2) Stop bringing high school and college students into the weapons labs
- 3) Encourage and help scientists to withhold their skills from weapons work.

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*** Representative Publications*

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Postdoctoral Fellow

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