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America's future security lies largely in its scientific agility, but this is in jeopardy. Political attacks have savaged some **of** our nation's premier science and security **laboratories**. Beginning two years ago, security scandals involving missing hard drives and allegations **of** Chinese espionage have damaged Los Alamos, while Livermore was criticized for problems with the National Ignition Facility, which has been attacked as being too expensive and failing to meet project goals.

Political vendettas at the expense **of** the **laboratories** have to stop. They are driving many **of** the best young scientists and engineers away from careers in national security technology. And they are weakening vital institutions. The **laboratories**, the best **of** the best in many areas **of** science and technology, are crucial linchpins in protecting our country against a vast array **of** evolving and dangerous new threats. To be effective, however, stronger support for their missions and their people is needed.

Far from being Cold War relics, the national **laboratories** are vital for future security. This future is not assured. The U.S. Commission for National Security in the 21st century has said the **laboratories** remain a national treasure but are in danger **of** being squandered. It concludes that they are world class but must have more resources to maintain their edge.

Why are the **laboratories** so important?

(1) First, they assure that our country's nuclear deterrent is safe, reliable, and effective. They have performed this duty for more than five decades. The task has grown more challenging with the moratorium on nuclear testing in place since 1992. Whether or not the United States ever conducts another nuclear weapons test, the safety and reliability **of** our nuclear deterrent can be maintained only if we are able to fully understand and compensate for the effects **of** aging on our nuclear weapons stockpile. To do so, suitable diagnostic and experimental facilities and a team **of** skilled scientists and engineers at the **laboratories** are needed. Major investments being made in laboratory-scale thermonuclear physics facilities and the capacity for supercomputing simulations are key to meeting this important task.

(2) The **laboratories** are stretching the frontiers **of** non-nuclear military research, helping to ensure that the United States retains the world's most technologically sophisticated and effective conventional military force. The **laboratories** are advancing precision attack technologies with laser and electro-optical systems, and reconnaissance technologies through unmanned aerial vehicles. These and similar efforts will enable our troops to maximize their ability to deliver force on a target while at the same time minimizing collateral damage.

(3) The **laboratories** are bolstering homeland defense, a growing priority in this age **of** new and more diverse threats. They are discovering advanced methods for detecting chemical and biological weapons, destroying them while containing the effects, and quickly decontaminating areas subject to attack. These are techniques that someday could save the lives **of** countless Americans.

(4) They help the United States stem the proliferation **of** weapons **of** mass destruction and implement and monitor treaties intended to reduce these threats. For example, the **laboratories** developed verification measures for the treaties **of** the 1970s that limited the yield **of** nuclear explosions, and for the more recent treaties eliminating intermediate-range nuclear forces and reducing strategic offensive nuclear forces. The **laboratories** also assist with technology to eliminate weapons **of** mass destruction in Russia, and bolster the security **of** its nuclear weapons and materials.

(5) Finally, the **laboratories** play a crucial role in developing the technologies that will help to provide our nation's energy security in the coming decades. Their efforts to find safer, less costly and more proliferation resistant fuels for nuclear power plants and to develop other alternatives to fossil fuels will only grow more important to U.S. security as global oil and natural gas reserves diminish and energy demands increase.

These are enormous contributions. But to sustain them into the future, the **laboratories** must overcome some key obstacles. The most important is that **of** personnel recruitment and retention. U.S. citizens are now a minority **of** the graduate science and technology students in our distinguished universities. The **laboratories** must be able to recruit from a smaller pool **of** young American scientists, and offer them some assurance that dedicated and loyal employees will be rewarded and not risk being held up to public ridicule if a problem develops. The **laboratories** must also provide state-**of**-the-art facilities; both to attract scientists and to do needed stockpile stewardship research in lieu **of** nuclear weapons testing.

An examination is needed **of** how the **laboratories** can best serve national security in the future and how they can make a greater contribution to the needs **of** DOE and other national security agencies. Easier access to DOE **laboratories** would offer these other agencies a stronger technological base than any one **of** them could afford. The intelligence community does not have its own **laboratories** and it wants access to a wider range **of** resources for technology development and foreign technology assessment. Defense Department **laboratories** have faced funding problems in some years. Thus, the DOE national **laboratories** can play a greater role in assisting a number **of** agencies with very high quality R&D, both classified and unclassified.

Other issues deserve attention. Should the **laboratories** have more funding for fundamental research? Breathtaking advances in such areas as quantum computing and lithography for producing a new generation **of** computer chips show the potential **of** such work. The **laboratories** need fundamental research programs as an incentive to attract new generations **of** the brightest scientists and engineers for their core missions.

Now is a time **of** re-examination and transition for the DOE national **laboratories**. Steps must be taken to rebuild morale, a sense **of** purpose, and public understanding. The role **of** the **laboratories**, and their national security missions and people, deserve greater attention and discussion. We must work toward a broad consensus for the **laboratories** and widened opportunities for them to contribute to America's security. It is time to treat these facilities like the national treasures they have been for more than a half-century.

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