

Buchanan Ingersoll

Attorneys

Proposal for Anti-Bioterrorism Technology Development Venture Capital Fund

Proposal: Create a venture capital fund that will provide federal seed money to nurture, focus, and accelerate the development of anti-bioterrorism research and early-stage technology companies and products directed at chemical and biological weapons to be used against military and civilian targets.

Principal Benefits:

- Augment the traditional governmental sponsored research model with the proven benefit of the entrepreneurial venture capital market;
- Harmonize the application of government funding and the potential for private investment capital to expedite the fulfillment of a critical strategic need of homeland security;
- Give the federal government a central leadership role in coordinating the development of new research and emerging technologies which currently reside in a myriad of public institutions and private companies;
- Mobilize the expertise of the private sector toward the practical development and eventual production of anti-bioterrorism technologies for use by both military personnel and the general public; and
- Create a vehicle for the advancement of science, the constructive use of investment capital, the support of our nation's technology business infrastructure, and the creation of jobs in the service of advancing our national security.

Background:

Among our nation's principal strategic challenges at the beginning of World War II were to harness the possibilities of scientific research (that was being performed primarily in university laboratories) and to stimulate the sleepy pre-War marketplace into providing assistance with development of practical applications for basic science research, for the benefit of national security. To do this, our leaders shouldered the burden of creating an atmosphere in which (1) the military could entertain civilian assistance in military planning as well as for production of military equipment, (2) scientists and industrialists could be given the greatest freedom to carry out research, and (3) industrial and technological resources could be closely integrated with national aims and utilized as "organic parts" of the defense infrastructure of the nation. In part as a direct result of the mobilization and coordination led by the Roosevelt administration, such visionary figures as Vannevar Bush, and the National Defense Research Committee, among others, the climate for technological innovation in the U.S. economy was completely transformed.

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The private venture capital market, a peacetime approach to encouraging technological innovation that matured through the example of the federal government's mobilization of resources during World War II, has provided the impetus for the high technology industries that fueled the growth of America during the post-War period. This model has proven to be the growth stimulating engine for the develop of new and nontraditional technologies. In this time of crisis, utilization of this model can provide a unique, complementary approach for rapidly dealing with issues that have thus far proven intractable for the conventional models.

Individual venture capital funds, in the range of \$100-750 million, have provided the seed capital that enabled the basic scientific research and conceptual innovation of our universities to create the commercial products that resulted in the formation of the telecommunications and computer industries, the biotechnology and genomics industries, the internet industry, and others. The funds, raised from wealthy individuals, pension funds, and other institutions, are managed by business professionals and technological experts who evaluate the technological and economic potential of business plans for the development of the relevant technologies. Investments in the \$1-10 million range are made to nurture the development of the relevant technologies, and the availability of the funds in turn stimulates new and unconventional ideas for technologies and businesses. VC investors assess the technology, management, and business feasibility of a project. Moreover, they monitor and provide management assistance to the projects as they evolve. The goal of each fund is typically to develop each technology to a point where a capital realization event can be achieved, e.g. an initial public offering of stock or sale to a major corporation, so that the fund can attain a return on its investment. Most funds are successful on 35-40% of their investments. Even at this rate of success, they have managed to provide profitable returns for their investors and generate phenomenal technologies not only for the American public, but also for the world, while appropriately compensating management.

The use of the venture capital model accelerates the achievement of critical national goals by bringing business and market place discipline and reality to extremely creative scientific minds to winnow out the impractical, unmarketable, unmanageable, and unlikely ideas and concentrate resources on the science that is most likely to satisfy a real need for its customers (the military and civilian population) and achieve commercial success. In fact, this model allows the creative and capitalistic forces of the marketplace to help shape the planning of the economy, fuel the explosive development of the new industries, and solve the ever changing market needs. The flexibility of this approach is key.

In rapidly developing and innovative industries and markets, bureaucracy, which often provides the necessary control and discipline, is almost certain to inhibit rapid success. Responses to bioterrorism must adapt to the developments on an almost daily basis, and someone must decide which approaches to abandon and when to do so. Nevertheless, the management must still be responsible to its investors, especially the federal government. Just as the private venture funds are subject to strictures on conflicts

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of interest and oversight by outside board members, science and policy boards, and auditors, the Anti-bioterrorism Fund would be subject to analogous strictures.

While technological innovation has become a central objective of American capitalism since World War II through the influence of venture capital, the new potential threat to our national security that we now face requires this type of disciplined yet flexible approach afforded by the venture capital model so the fragmented and non-coordinated disparate resources (i.e., hundreds of private companies and disjointed public research efforts) may be brought to bear on the key strategic needs of our nation. The goal of the Anti-Bioterrorism Fund is to create a fund to be managed by the private sector, independent of political pressure, to stimulate the more efficient development of technologies for addressing the ominous threat of bioterrorism (both biological and chemical). This program would not infringe on or contradict any existing federal or military program. Its goal is to provide an innovative and independent opportunity to harmonize the use of private capital and government funding for the efficient development and eventual production of strategically important technologies and products for this market under the pressures of the existing business climate. In effect, the government would leverage its development-stage funding to encourage private industry in the direction of its most pressing needs, and the private sector will mobilize its resources toward the development and production of such technologies. The Fund is designed to put government and the larger private sector community on the same page, to align their interests, utilizing a model that has proven most successful in the past.

The approach would be to establish the fund solely with federal money. Independent management of the fund would be created from existing venture capitalists who would develop the staff for evaluating the technologies and funding the projects. The government would then have an equity portion of the technology companies. It would receive the potential relevant return on its investment, if that were valuable, or the return could be reinvested in another round of new start up companies. More importantly, the fund will provide the genesis for an anti-bioterrorism industry at little cost to the government, with the potential to receive gains on the investment, just as the basic science research funded by the federal government did for the computer, biotechnology, and internet industries. Much like the strategic partnering relationships that have revolutionized the computer, internet, and telecommunications industries, this fund will use the input and funds of the government to shape and focus the development of the industry. Then private sector investment can help propel the viable companies into the marketplace.

With this approach, the principles of the free market can drive the development of anti-bioterrorism technology and provide the encouragement for novel approaches for dealing with the issues of bioterrorism outside the conventional approach of government and military contracting. Technologies with creativity and promise can be funded; struggling management and unsuccessful technologies can be discarded; pressure from political and military sources will be minimized appropriately.

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Structure:

Fund Objectives	To invest in anti-bioterrorism research and early-stage anti-bioterrorism technology companies that address the dangers of chemical and biological weapons to the military and civilian populations, leveraging capital to coordinate the efficient development of such technologies and achieve scientific and commercial progress.	
Targeted Technologies	Antibioterrorism	
Size of Fund	Up to \$ 750 million	
Source of Funds	100% federal funds	This unique sourcing of funds will provide the government with equity ownership and first-hand involvement in private industry initiatives which relate to homeland security
Management of Fund	Private investment managers, to be compensated at a fraction of the rate at which venture capital managers are traditionally compensated.	The role of private management would be to: <ul style="list-style-type: none"> • evaluate opportunities for investment; • provide business stewardship; • guide collaborations among companies, academia, and government research programs and, where advisable, steer the combination of existing entities for greater commercial viability
Restrictions on Investment	Control limitations and conflict of interest restrictions similar to those employed in the Small Business Investment Capital program; periodic audits shall provide ongoing assurance of compliance.	Such regulations will give the government an appropriate level of stewardship over the use of government funds, while giving science and industry the freedom to pursue creative objectives without direct and improper political interference from elected officials or the military. Congressional oversight by the appropriate committees would also oversee the goals and restrictions in such a manner that such funds receive oversight from outside boards and auditors.
Strategic Policy and Scientific	A strategic advisory board, chaired by the director of Homeland Security, or	In addition to giving the government the ability to leave its imprint on the course

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Advisory Board	his designee, and comprised of key individuals from the armed forces, the national security infrastructure, private scientific, and industrial sectors, will provide strategic advice concerning the direction of research and development of portfolio companies. Among the federal members would be the USAMRID, the ASH, and the White House Science Advisor.	of private industrial initiatives to attack technological gaps, the board will be an attractive feature to potential private investors, providing them with the confidence that investments are being intelligently channeled into areas in which the “customers” represented on the board have the greatest interest.
Board of Directors	Functions as the legal management of the fund subject to the conventional legal strictures for analogous entities. Members would include the Director for Homeland Security and an appropriate number of representatives of the federal funds (but not a majority one) to be designated by the Senate and one to be designated by House.	