

A GNAT WHITEPAPER:

**The National Bio Agro Defense Facility's
"Dual Use" Research;
a Threat to our Nations Security**

By Judy Winters

The National Bio Agro Defense Facility's "Dual Use" Research; a Threat to our Nations Security

By Judy Winters

The code of conduct and research that will be performed at the proposed National Bio Agro Defense Facility has been the subject of intense opposition within several communities affected by the eventual placement of proposed lab. The consortia vying for the NBAF have dismissed the concerns of the communities, stating that accidents and security breaches are simply not something we should concern ourselves with. However, concerns regarding the production of a more virulent pathogen or potential bioweapons are valid. This degree of hubris sank the Titanic; it certainly should not be applied to life sciences and the eventual operation of a BSL 4 bio-defense facility. Concerns relating to Bio weapons proliferation have evolved from a genre of research referred to as "Dual Use" biotechnology. The "Dual use Dilemma"¹ has been the subject of a highly contentious, political and social debate for years.

The research activities that will take place at the NBAF are precisely the type of research that generates the most concern. It is difficult to distinguish bio-defense research from bio-weapons research. In order to make vaccines against deadly biological agents, the deadly biological agents have to be created. The US programs, particularly, the Departments of Defense (DOD) and Homeland Security (DHS), are increasingly focused on "threat assessment" activities and studies where researchers deliberately create the "threat", thus creation of the weapon, claiming they are learning to defend against it.

Dual use research is difficult to articulate and has different meaning depending on how the research is being applied. Some describe "dual use" research as that of a double-edged sword of rDNA research advancement. The research can be used for legitimate agricultural and public health advancements, but if misused, the same research technology could have disastrous consequences. Biotechnology in the hands of a rogue government, a terrorist or a simple act of greed and someone's willingness to sell a product or an associated technology on the black-market would have the unprecedented potential for destructive and deadly widespread applications as a bio-weapon.

Should individuals living in the proximity of a BSL 4 agricultural facilities be concerned? Consider for a moment the average US citizen may never know a biological threat exist until it is too late. The Bioterrorism Act of 2002² prohibits the public disclosure of any theft or loss of a potential bioterrorism agent, as well as any information related to site-specific security measures designed to prevent unauthorized access to

¹ The Dual-Use Dilemma for the Life Sciences: Perspectives, Conundrums, and Global Solutions
Professor Ronald M. Atlas, PhD, Center for Health Hazard Preparedness, University of Louisville,
Louisville, Kentucky; Professor Malcolm Dando, PhD, Disarmament Research Centre, University of
Bradford, Bradford, West Yorkshire, England

² The Public Health Security and Bioterrorism Preparedness and Response Act of 2002
http://www.nmenv.state.nm.us/dwb/security/documents/security_act.pdf

biological agents. Although reporting of releases and thefts of bioterrorism agents from facilities and laboratories are mandatory, the Secretary of Health and Human Services may only provide public notification if the incident represents a serious public health emergency. This would include the communities surrounding the NBAF.

With the increase in the US bio-defense spending since 9/11, many have warned of the potential for disastrous consequences of misused biotechnology research.

The former U.N. Secretary-General Kofi Annan gave a stark warning before his retirement in 2006, a warning that the world would be foolish to ignore. Annan warned that as biological research expands and advanced biotechnologies become more available the associated safety and security risks will increase exponentially. “When used negligently, or misused deliberately, biotechnology could inflict the most profound human suffering—ranging from the accidental release of disease agents into the environment to intentional disease outbreaks caused by state or non-state actors,” Annan warned, “Soon, tens of thousands of laboratories worldwide will be operating, in a multi-billion dollar industry. Even novices working in small laboratories will be able to carry out gene manipulation.

One of the most difficult and pressing issues at hand for all involved in “life sciences”, and dual use research programs such as pharmaceutical companies, academia and government laboratories is whether the risks associated with the misuse of the technology can be minimized while still enabling critical research to continue. This is a risky juxtaposition for the scientific community entering into the bio-defense research considering they want the freedom to do the research suitable for publication and self-regulate and yet the DHS will desire to keep the research classified.

Texas A&M’s bio-defense program³ is a good example of how issues that just are overlooked could potentially have disastrous consequences if the viruses they were working with were more lethal. The university failed to report to federal authorities’ one lab worker’s infection with Brucella and several others’ exposure to Q fever. The failure to report the employees contamination was brought to the attention of Federal authorities by a bioweapons proliferation watchdog group known as the Sunshine Project⁴. Otherwise, this incident would have never been reported.

The “designer bugs” produced in these types of BSL 4 facilities are more virulent than their naïve counterparts. Moreover, according to the National Institute of Allergy and Infectious Disease (NIH)⁵, 18 of the BSL 4 select agents are capable of rapid widespread human de-population, with no known cure or vaccine. Citizens should question an agency with so many documented failures⁶ to regulate itself, while safely operating a BSL 4 Bio containment facility.

³ The Dallas Morning News, Texas A&M to pay 1 Million Dollar Fine
<http://www.dallasnews.com/sharedcontent/dws/dn/latestnews/stories/022108dntexbiodefense.3451e44.html>

⁴ Ed Hammond, The Sunshine Project, Examples for potential bioweapons agents and their use in history
<http://www.sunshine-project.org/>

⁵ National Institute of Allergy and Infection Disease, <http://www3.niaid.nih.gov/>

⁶ Citizens for Responsibility and Ethics in Washington (CREW), <http://homelandsecurityforsale.org/>

DHS has stated the research slated for the NBAF will follow protocol and guidelines found within the Bio Weapons Convention⁷ (BWC). However, due to the fact these pathogens in the wrong hands could be misapplied and used as a bio-weapon those assurances appear disingenuous and are a poor attempt to mitigate the dangers posed by dual use research. One could argue that the US government's original rationale to enter into the BWC appears to be a glimpse into the future, an Orwellian type vision. We were able to recognize thirty-three years ago, the risk associated with future technologies, as we now find with "dual use" biotechnology research.

Consider the following excerpt addressing the BWC, found on page 22 of the "Fink Report"

"The United States decided to abandon its offensive biological weapons program, destroy its existing stockpiles of biological and toxin weapons, and convert the production facilities to other purposes because it was Recognized that:

- Biological weapons could be as great a threat to large populations as nuclear weapons and that no reliable defense is likely:
- Biological weapons could be much simpler and less expensive than Nuclear weapons to develop and produce; proliferation of biological weapons would therefore greatly increase the number of nations to which the populations of the United States and its allies [could] be held hostage.
- Our biological weapons program was pioneering an easily duplicated Technology and was likely to inspire others to follow suit.

The United States concluded that its biological weapons program was a substantial threat to its own national security and that one of the best ways to reduce this threat was not only to renounce biological weapons in this country but also to strengthen the international barriers to their proliferation".

The National Bio Agro Defense Facility will engage in the very "Dual use" technology research that prompted the justification for the Bio Weapons Convention (BWC) and evidence exist that the threat assessment for misuse is increasing with the boom in bio-defense weapons programs.

⁷ Bio weapons Convention, (BWC) Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction, <http://disarmament.un.org/wmd/bwc/>

An Acknowledged threat “the Dual Use Dilemma”

In October 2004, the Committee on Research Standards and Practices to Prevent the Destructive Application of Biotechnology, the National Research Council authored a report/book entitled; *Biotechnology Research in an Age of Terrorism*⁸ to examine the “Dual Use Dilemma” of biotechnology research with pathogenic microorganisms. The report is also referred to by some in the scientific community as the “Fink Report”. Here is an excerpt from the committee’s introduction:

“The charge to our Committee was to consider ways to minimize threats from biological warfare and bioterrorism without hindering the progress of biotechnology, which is essential for the health of the nation. This task is complicated because almost all biotechnology in service of human health can be subverted for misuse by hostile individuals or nations. The major vehicles of bioterrorism, at least in the near term, are likely to be based on materials and techniques that are available throughout the world and are easily acquired. Most importantly, a critical element of our defense against bioterrorism is the accelerated development of biotechnology to advance our ability to detect and cure disease. Since the development of biotechnology is facilitated by the sharing of ideas and materials, open communication offers the best security against bioterrorism. The tension between the spread of technologies that protect us and the spread of technologies that threaten us is the crux of the dilemma. Although the National Academies have had many reports on national security, this is the first to deal specifically with national security and the life sciences”.

The committee stated, “The duality between the purposes permitted and prohibited under the BWC, (Bio Weapons Convention) was at the heart of committee’s activities”.

The committee adopted “Seven experiments of concern” they are as follows:

- Demonstrate how to render a vaccine ineffective
- Confer resistance to therapeutically useful antibiotics or antiviral agents
- Enhance the virulence of a pathogen or render a nonpathogen virulent
- Increase transmissibility of a pathogen
- Alter the host range of a pathogen
- Enable the evasion of diagnostic/detection modalities
- Enable the weaponization of a biological agent or toxin

The research currently being performed at Plum Island Animal Disease Center⁹ is considered dual use research and clearly, PIADC research activities include “the seven

⁸Biotechnology Research in an Age of Terrorism; “the Fink Report”
<http://www.nap.edu/openbook.php?isbn=0309089778&page=135>

⁹ Plum Island Animal Disease Research Center, Research Activities;
http://www.ars.usda.gov/main/site_main.htm?modecode=19400000

experiments of concern". This research will be transferred to the National Bio Agro Defense Facility once the facility is operational. The National Institutes of Health¹⁰ (NIH) has established institution oversight and guidelines for these types of facilities using recombinant DNA Research (rDNA). Each institution is responsible for ensuring that all rDNA research conducted at or sponsored by that institution is conducted in compliance with the NIH Guidelines.

Facilities using rDNA research are required to establish their own Institution Biosafety Committees (IBC's) which are to be provided to the public per request. As proven by the Sunshine Project's research¹¹ the IBC requirement is a mere inconvenience and given the fact there is no oversight, it is up to the individual institution to police its own activities. The Sunshine Project has made available the Institution Bio Safety Minutes (IBC's) minutes from 211 institutions. Some institutions meet monthly, some meet quarterly and others rarely meet, this is a clear violation of NIH guidelines and it puts our national security at risk. One IBC of interest is from the University of South Carolina whose President sits on a BioSafety agency board created due to concerns brought forth in the "Fink Report", the NSABB¹².

In response to the dual use dilemma the "Fink Report" addressed, a new agency was created and charged with the task of bio-security advice and recommendations not oversight. In March of 2004, former Health and Human Services Secretary, Tommy G. Thompson, announced the creation of the National Science Advisory Board for BioSecurity, (NSABB). The NSABB, since its June 30 2005 inaugural meeting, has met seven times in three years. Since the agency's inception security breaches, accidents and safety concerns relating to bio-containment facilities have increased exponentially¹³. Unless renewed the charter of the NSABB will expire April 7, 2008. Given the fact that voting members of this agency do not follow established NIH protocol for dual use research there is no point in renewing the charter. It will only waste more taxpayer's hard-earned dollars.

In closing ask yourself; could the very definition of a bioweapons be defined; merely by intent, code of conduct and scientific ethics with who has possession of the select agent and specific biotechnology? When one considers dual use research clearly, the answer is yes. Consider for a moment our reasons for invading Iraq; which was their proliferation of weapons of mass destruction (WMD), their uses and their potential uses against humanity. The US attacked Iraq for the misuse of the dual use technology the US sold to them in the Reagan and Bush 1's administration¹⁴. The National Bio Agro Defense Facility will not protect our nation; it will only cultivate more dangerous technology and if misapplied that technology could be our undoing. Do you feel safer now?

¹⁰ Institutional Biosafety Committees (IBCs) are the cornerstone of institutional oversight of recombinant DNA research, <http://www4.od.nih.gov/oba/IBC/IBCindexpg.htm>

¹¹ The Sunshine Project IBC minutes Archive <http://www.sunshine-project.org/>

¹² The National Science Advisory Board for Bio-Security, <http://www.biosecurityboard.gov/>

¹³ US Labs Mishandling Deadly Germs Associated Press <http://www.msnbc.msn.com/id/21096974/>

¹⁴ Chemical Weapons, the US and Iraq, What the New York Times left out By William Blum, <http://www.counterpunch.org/blum0820.html>