

# **BUILDING BIOCONTAINMENT LABORATORIES 3 AND 4 IN BOSTON— THE FIGHTBACK**

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## **The Position of the Women's International League of Peace and Freedom (WILPF) regarding the BWC and the 6<sup>th</sup> Review Conference:**

*The fundamental principles of WILPF remain the abolition of war and any threat to the peace, security, and freedom of all humankind. WILPF has, since 1949, firmly opposed all research, development, production, stockpiling, and use of biological weapons whether for offensive or allegedly defensive purposes. WILPF lauds the progress made by the BWC and its entry into force, but condemns the permission of 'defensive research' under the Convention. WILPF denounces the inherent ambiguity of the concept of 'defensive research' and fears the pretext such a provision may create for states to develop and stockpile bioweapons.*

Boston University was awarded funds to build a National Biocontainment Laboratory (NBL) by the National Institute of Allergy and Infectious Diseases on September 30, 2003. The NBL will include Bio safety level 3 and 4 laboratories and supporting facilities. These will be built (and the ground has already been broken) adjacent to Boston University Medical Center in an area known as BioSquare. This is in one of the most populated areas of Boston and consists of mostly low income people with a high percentage of the African American community. More than 25,000 people live within one mile of the location and more than one million people live within ten miles. (For the above information I am indebted to Gene Benson of ACE, Alternatives for Community and Environment who put together a fact sheet in December of 2003.)

The Federal Government gave final approval to Boston University's plan on Feb 2, 2006. NIH (National Institutes of Health) both approved release of the grant money and ruled that the project presented no significant environmental threat. Boston University will receive \$128 million in federal money to help build the lab. In addition Boston University will contribute \$50 million dollars toward construction of the project. Since that time there have been two lawsuits, one in the State courts and one in Federal courts. These will be discussed in some detail in this paper.

The major political actors in the Boston area have been solidly in support of Boston University's plans to build these labs in the heart of Boston. These include Governor Mitt Romney, Mayor Thomas Menino, Senator Edward Kennedy and Senator John Kerry. They all came out in support of the lab very early on. They see it as a way to attract pharmaceutical companies that will build buildings and provide jobs. According to a Boston Globe article of February 3, 2006, "The 195,00 – square foot building, which would also include lower-security facilities, is expected to generate more than \$1 Billion in research grants over the next two decades". It is unclear where the author of the Globe article got the billion dollar figure.

An entirely different assessment is made by Dr. Lynn Klotz of the Center for Arms Control and Non Proliferation. "One of Boston University's main arguments for the BSL 4 is that it is vital to Boston's economy and bioscience communities ...I don't believe BU's claim. Of the 10 or so major pharmaceutical company facilities, the more than 200 biotechnology companies, and hundreds of infectious-disease non-commercial research labs in Massachusetts, perhaps only a handful will ever



use the BSL4 lab at Boston University. Indeed, failure to build the BSL4 will cause at most a hiccup in the area's bioscience industry.”(1)

Boston citizens, including members of WILPF as well as scientists, have talked with Mayor Menino and aides of Senators Kerry and Kennedy and asked them why they have supported the lab and if in light of new information they would reconsider. No answers have been forthcoming.

Chuck Turner, Boston City Councilor, does not feel that the labs will generate jobs in the community in which it will be located. He believes only a small number of jobs in the labs will go to community residents. These are mostly jobs for highly trained scientists and most of the residents of the neighborhood would not qualify.(2) While the labs are being built there will be construction jobs but these will only last a short time and are not likely to go to residents of the neighborhood.

There is an ongoing vigorous struggle within the Boston Metropolitan area to stop the building of the biocontainment labs. The first objection to the building of a biocontainment lab stems from the fact that it is in a highly populated area. These are the only bio 3 and 4 labs in the entire country planned to be built in an already densely populated area. There is always a risk of accidental release of pathogens that could cause a deadly outbreak of disease. Despite Boston University's assurance that this is a laboratory to find cures for incurable diseases there is the fear that the results of the research could be used offensively for a weapons of mass destruction program.

This presentation will give a description of the kind of struggle the citizens of Boston have waged against these labs as well as the role of Boston University in promoting the lab. Scientists, community residents, community organizers, environmentalists, peace activists, Boston University students, trade unions, lawyers and elected representatives in the city council and the state legislature have all been engaged in activities to stop the building of this biocontainment lab. There have been over 100 community meetings to publicize and discuss the project. In protest to the building of the bio lab there have been marches, teach-ins, petitions bills filed in the state legislature, resolutions put forth at Boston City Hall by City Councilors, law suits, and pressure to strengthen the Boston Public Health Commission's regulations on labs.

Sujatha Byravan, executive director of the Council for Responsible Genetics, (a Cambridge, Mass, USA organization that fosters public debate about the social, ethical and environmental implications of genetic technologies) told me she first learned about the possibility of these labs from an article in the local newspaper, the Boston Globe . She alerted the environmental rights organization ACE, Alternatives for Community and Environment, and Safety Net. ACE is an environmental justice organization working in communities of color and low income communities in New England. Safety Net, founded in 2000, consists of Roxbury and South End residents of color who are promoting community control over development in their neighborhood. These two organizations have been involved in a variety of development issues in the area where the bio lab is under construction. *It is indicative of Boston University's approach that neither organization was informed or consulted about the proposed building of the bio containment labs. Over the last three years all three of these organizations have played a significant role in the struggle to stop the building of BSL 4 Labs.* They have extremely informative web sites. Ace's web site is <http://www.ace-ej.org>, the Council for



Responsible Genetics web site is <http://www.gene-watch.org>. Stop the Biolab coalition anchored by Safety Net is <http://www.stopthebiolab.org>

The lack of transparency on the part of Boston University has been an issue since the community found out about the possibility of a BSL 4 lab in their midst. In a private conversation Gene Benson, an ACE lawyer, told me that Boston University refused to let him see the application they had submitted to NIH. ACE had to sue under the Freedom of Information Act to have access to that document and even then there are large sections of the document that are redacted. The document is currently also on reserve at the Boston Public Library with sections of it redacted.

Furthermore, despite repeated requests Boston University has refused to debate opponents of the lab. According to a press release from the Council for Responsible Genetics, BU claims to have had 50 letters of support for the lab but at the time of the press release made none of these available to the public despite requests to do so.(3)

ACE has also requested that Boston University sign an enforceable document that they wouldn't do secret research at this lab. They never responded to the letter. These actions demonstrate a lack of transparency and beg the question of whether the biocontainment labs will be part of an offensive bio weapons program. Boston University steadfastly maintains that the research is to find cures and vaccines for incurable diseases and that the lab is strictly for medical research.

The Boston Public Health Commission, as a result of community concerns about safety in the biocontainment labs, decided to regulate them. These regulations are the first of their kind by a municipality. They state that institutions using such labs must obtain permits from the commission, set up a safety committee that includes two outside community members and submit regular reports on research and safety procedures.(4)

According to Lynn Klotz the regulations need to be substantially strengthened to promote genuine transparency. He did an analysis of the successes, failures, and shortcomings in transparency and oversight in these regulations.(5) If his suggestions were adopted they would go a long way towards achieving that goal. He presented this paper earlier at this conference.

David Ozonoff, a prominent Professor of Environmental health at Boston University School of Public Health, pointed out in a talk with BU faculty staff and students that he, "had come to the conclusion that the proposed laboratory is not meant nor is it suited to pursue a genuine public health agenda. An examination of the Request for Proposals (the RFP) to which BU responded tells the story clearly. NIH monies for this project come from President Bush's Homeland Security Budget specifically related to defense against bioterrorism. Indeed the primacy of the counter-terrorism objective is repeatedly emphasized in various NIH documents."

Dr Ozonoff continues: "The NIH RFP explicitly states that the objective is to contribute to NIAID's biodefense research agenda, an agenda which supports basic research and the translation of that research into products that can counter bioterrorism worldwide" (NIAID 2002a). The lab will be directed to concentrate its work on those agents that pose the greatest risk" for bioterrorism The



complete talk, "The top Ten Reasons to Oppose the Biolab" given at Boston University on September 23, 2004 may be found at: <http://www.ace-ej.org/BiolabWeb/Biolabdocs/Ozonofftopten.pdf>

I have looked at the application that Boston University submitted to NIH. In it is listed all the pathogens that will be used in the BSL 4 lab. The actual way these pathogens will be used appears to be redacted. Many of these are ebola viruses and other hemorrhagic fever viruses. According to Dr. Byravan, with whom I consulted, virtually all of the pathogens come from Africa. Not one of them has ever infected anyone in the United States with the exception of anthrax that most likely came from a US lab. The work in these labs is not about viruses that kill untold thousands of people a year in Africa such as malaria and AIDS but less widespread very deadly hemorrhagic fever viruses.

It is generally accepted among scientists that the research on these pathogens are inherently dual use, i.e., the research for defense purposes also creates the offensive agent. According to a report from the Center for Arms Control and Non-Proliferation, "scientific knowledge methods and materials that can be used to protect against biological weapons can often also be used to develop biological weapons."(6) To make a vaccine against terrorist bioweapons it is necessary to weaponize the vaccine and test it. The money for this research comes from NIH that now has close ties with the Department of Defense.(7) The Department of Defense and other Federal agencies like the CIA will be able to use the findings from these labs for secret offensive purposes. Boston University will have no control over their use.

Francis Boyle makes the point in his book, Biowarfare and Terrorism that an integral component of any bioweapons program has got to be a vaccine development to protect the soldiers and home population against the potential use of biowarfare weapons.(8) The fact that Boston University will be developing vaccines for very exotic viruses never found in this country makes the whole enterprise look like an adjunct to a bioweapons program.

The problem of transparency will likely become infinitely greater if new federal legislation setting up a new agency within the Department of Health and Human Services called the Biomedical Advanced Research and Development Agency, or BARDA is enacted. The legislation HR 5533 has passed the House of Representative but its companion bill S3678 in the Senate has not yet been acted upon. It's possible that with the new Democratic Congress this would not pass. If it does this new agency would be shrouded in secrecy as it is exempt from the Freedom of Information Act. According to the Center for Arms Control and Non-proliferation, "This is not an exemption from the Freedom of Information Act but rather, is a wholesale exclusion that turns the Freedom of Information Act on its head by making non-disclosure the default mode of operation."(9) Text of both the House and senate bills can be found by going to <http://thomas.loc.gov> and typing in BARDA.

**FOR ALL OF THE ABOVE REASONS WE STRONGLY SUSPECT THE BIOCONTAINMENT LABORATORIES BEING DEVELOPED BY BOSTON UNIVERSITY ARE PART OF A SECRET BIOWEAPONS BUILDUP THAT IS ILLEGAL.**

Most of the people working actively to stop the construction and operation of the BSL 4 labs see the issue not just as one of safety but as one of the development of a component of bioweapons warfare.



For example, Chuck Turner, a Boston City Councilor and a long time activist had this to say “I imagine as time goes on, we’ll see a growing movement beginning to question not just where these labs are located, but whether we should be building any kinds of facilities like this, which are clearly about biowarfare and not for finding cures for diseases”.(10)

We agree with Councilor Turner. Currently, the organizing emphasis has been on the safety issues. Since by now, there has been substantial publicity about safety issues, it is possible the organizing and education around the probability that these labs are part of a secret biological weapons program will become more prominent.

The rest of this paper will consist of a more detailed description of the organizing among the residents of Boston.

One of the earliest activities sponsored by ACE, Safety and United for Justice with Peace was a letter titled “No Place to Hide”. In April 2004, 165 scientists, physicians, public health specialists, and academics, including Nobel prize winners, signed a letter to the Mayor of Boston, Boston City Council, and Boston University opposing locating the BSL4 in the South End/Roxbury area of Boston.(12)

Scientists from around the country have protested the funding for research such as that going into the Boston University project. Approximately 800 scientists signed “An Open Letter to Elias Zerhouni”, the head of the National Institutes of Health. The letter stated the funding for biodefense related research grants has increased 1500% since 2001 while funds for public health grants research has decreased 41%. The letter urges him to take corrective action and in the appendix to the letter makes policy recommendations.(13)

Dr. Byravan of the Council for Responsible Genetics, Gene Benson of ACE, and Klare Allen of Safety Net met at Boston University with Dr. Mark Klempner, the principal investigator on the NIH application. Subsequent to this meeting Klare Allen and Lucky Devlin of Safety Net were invited to a meeting held at Boston University. Klare Allen tells the following story as emblematic of the way Boston University officials treat community residents. When Lucky Devlin asked Dr. Klempner if the community knew about BU’s plans for the lab and suggested that a community meeting was needed, Klempner replied that “If you can get some competent residents then I would sit down and speak with them.” He then turned his back to talk to another person in the room saying, “Let me talk to you. You have a Ph.D. and can understand what I am saying”.

In a letter to NIH from a coalition of individuals and community groups Klare Allen is quoted as saying “This proposal is another example of environmental racism on a community of color. If this was an affluent white community, public meetings would have been held and respect given to the community.”

I attended public hearings as part of the Environmental Impact review process. At several of these meetings members of a construction union arrived early and took most of the seats. There were overflow crowds of mostly people of color who had to watch the proceeding from an adjacent room on a TV monitor. The mostly white trade union men were very intimidating. They saw the building



of these labs as a chance for employment. They kept making the point that they were all for scientific research to cure diseases as if the other people in the audience were against medical research. Of course, the community people are not against medical research but are concerned about research with agents brought in from abroad that with no known cures. They were afraid of accidents at these labs. Boston University administrators and scientists pointed out how safe these labs would be with the most stringent safety precautions possible and continued to misrepresent the community's concern as being one against medical research.

The racism inherent in placing these labs in a poor community with a very high percentage of people of color is quite evident. Many leaders in the African American community have taken leadership roles in opposing the labs. City Councilors, representatives in the state legislature, the head of the NAACP among others, have all spoken out against the lab. Currently, all four City councilors of color oppose the lab being sited in Boston and support the ordinance banning Level 4 research labs. The remaining nine white Councilors support the lab.

The fight back against the lab in the last three years has been taken up by a variety of groups. Soon after discovery of the planning for the lab, a Stop the Bioterror Lab Coalition was formed. ACE was an early member of the coalition. This organization has written many position papers, updates on current developments, press releases and has worked with an "Out of Boston" group, i.e., people outside the city of Boston. This is a committee of the Stop the Bioterror Lab coalition made up of individuals, many of them faculty from the area universities, representatives from the United for Justice with Peace, a Greater Boston anti war coalition, representatives from WILPF, and from Boston Mobilization, a Cambridge based peace and justice organization currently focusing on work with youth. This committee has been working with State Representative Gloria Fox to pass a bill in the State Legislature to create a comprehensive regulatory program for high containment biological laboratories. Massachusetts has no comprehensive regulatory programs for BSL 3 or 4 laboratories. This legislation will be the first of it's kind at the state level in the whole of the country.(14) The federal government has only self-enforcing guidelines that have been proven inadequate.

The Out of Boston Committee has worked on promoting the bill in the State legislature to develop stringent regulations for BSL 3 and BSL 4 labs. The bill, introduced by State Representative Gloria Fox, would not bar biocontainment labs. The legislative process in Massachusetts is a long, convoluted one; the bill in committee was substantially changed and weakened, and Representative Fox plans to resubmit the bill. The Out of Boston Committee has decided not to put a great deal more energy into passing this bill at this point although most committee members agreed the bill is necessary for the safety of people in the state.

The Out of Boston Committee is currently in the beginning stages of organizing against the lab in suburban Boston neighborhoods by circulating petitions through the communities in the greater Boston area urging NIH to hold community meetings in every town as an accident at the labs could have the effect of harming people in all the Boston area communities. The petition further urges all construction on the labs be stopped until the successful completion of all environmental reviews. The Boston area has local peace organizations in over 50 communities that are loosely coordinated by United for Justice with Peace. The petitions are being circulated through these local groups.



Boston Mobilization has been involved in the coalition from early on. It has organized university students, passed out literature and petitions and gone door to door talking to people and collected 1000 student signatures protesting the bioweapons lab. Boston Mobilization located the film makers and helped produce the video shown at the beginning of this session.

The Boston branch of WILPF has worked closely with Safety Net, distributed the DVD to Community television stations, and been a large, visible presence at all community meetings. Many members of the branch have testified at these meetings.

City Councilor Chuck Turner whose district abuts the area where the lab is under construction has been a leading opponent of the biolab. He has proposed an ordinance to ban any BSL 4 lab in the city of Boston and held hearings on the ordinance. At the present time there are not enough councilors to pass the ordinance. He is hoping that eventually council members will see that the risks involved in the lab will outweigh the perceived economic benefits to the city of Boston.

Councilor Turner also held hearings on the problem of transporting the pathogens that will be brought in by plane from Africa to the biolab. There are ordinances forbidding the transportation of dangerous substances through tunnels. They would have to be transported through local streets through five or six Boston neighborhoods. The hearings had to be rescheduled because no one who was invited to testify was prepared. The transportation company that testified said they do not have certification at this time to transport the pathogens. The representative from Boston University had not investigated how the transportation would be accomplished. Dr. Anita Berry, Director of Communicable Disease Control at the Boston Public Health Commission, had no idea what the pathogens would be. Councilor Turner and community residents from different Boston neighborhoods came to the hearing and were angered by how unprepared the officials were.

In the last three years members of the Coalition with Safety Net in the lead have organized against the building of the Bio4 lab by dividing the city of Boston into districts corresponding to the areas covered by specific city councilors with district captains. They have made efforts to get information to city residents about the bio lab, and been prominent testifiers at hearings and community meetings

Members of Safety Net have also initiated law suits in both the state and federal courts. There was victory in the state court. The judge in the state court ruled that the certification of the Final EIR was arbitrary and capricious. The judge wrote "the Biolab, with its BSL4 laboratory is no ordinary project, and the potential risks it poses to the environment and public health are extraordinary and, potentially catastrophic." In addition to vacating the certification of the Biolab project, he also ordered Boston University to resubmit its EIR with answers to two main questions: "What is the worst that can happen if a laboratory worker were infected with a contagious pathogen he was studying, and Would the impact be significantly less if the Biolab were located outside of a city?"(15) Since the certification of the Biolab project was vacated it was assumed that all construction would be halted but this has not been the case. There is some confusion here but it appears that no state agency will take the responsibility for stopping the construction. As this is a civil case it is customary the construction would be stopped only if specifically instructed to do so.



A similar case was filed in federal court. Opponents of the biolab filled the court room during the hearing. The judge in that case has deferred ruling on a motion calling for a preliminary injunction to stop funding until the supplemental environmental analysis ordered by the state court has been concluded. (16)

Boston University and NIH agreed to perform a more thorough risk analysis and review of alternative locations for the lab. They also pledged to address community concerns about the project. NIH has subsequently held three community meetings. They have been extremely contentious, with as many as 60 residents attending the first meeting expressing their anger that NIH has failed to halt construction until the additional risk assessments had been completed. At one point Deborah Wilson, the NIH official, said that NIH funding has been suspended until the risk assessments have been completed. This was contradicted in the press the next day, and the actual truth continues to be as non-transparent as most things with this project.

According to Prasannan Parthasarathi, a history professor at Boston College, who attended some of the NIH community meetings, Ms Wilson in a power point presentation said that the lab is a civilian bio defense research lab. As Boston University has steadfastly maintained that it's not about biodefense but about emergent diseases, the community people were furious and were shouting at the Boston University officials present that they had been lied to.

In a subsequent meeting called by Safety Net and the Coalition for community people to review the state and federal cases, the lawyers made it clear that litigation could do just so much towards stopping the building of the BSL 4 LAB. It is really a political issue that requires the involvement of the greater community to have a political impact. (16)

In summing up, there has been tremendous activity in Boston to try to stop the building of the BSL 4 labs but it is not what one would call a mass movement with thousands of people on the streets. There are currently calls for civil disobedience that people are seriously considering and a new effort to organize people in the suburbs.

We agree with scientists who feel that the buildup of defensive research may provide the pretext for states to develop and stockpile bioweapons and that US biodefense activities are making us less safe. (17) At the end of a lengthy article documenting the history of bioweapons in the United States Jeanne Guillemin had this to say, "To pose a serious or sustained threat, any terrorist group interested in biological weapons would have to rely on state-level resources, including microbiologists and engineers: laboratories: production facilities: munitions factories: and personnel trained in weapons transport, testing, storage, deployment, and use. This kind of proliferation is preventable, with vigilant, international enforcement of transparency measures and collective pressure brought to bear on states that refuse cooperation." (18)

Over a year ago in an op ed piece in the Boston Globe Nobel Prize winner Bernard Lown and Prasannan Parthasarathi, alerted Boston residents to the link between the work planned at Boston University and the development of biological weapons. They stated succinctly what is also WILPF's position, "Security from the threat of biological weapons depends on sound international agreements to ban such weapons along with enforceable mechanisms for monitoring and compliance" They



posed the questions, “Are we ready to become accomplices in a sordid biological weapons race? Are we willing thereby to tarnish the good name of our city?”(19)

The fight to stop the labs is far from over.

#### ACKNOWLEDGEMENTS

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#### NOTES

- (1) Lynn Klotz , “Why the Boston University Laboratory is not Important to or Needed in Boston “, Center for Arms Control and non Proliferation, Unpublished page 1
- (2) “A Biolab in Boston: Boston City Council Member Chuck Talks About Biodefense Research Expansion” by Sujatha Byravan, *Gene Watch* Volume 17 Number 5/6 September –December 2004, Special Biowarfare Issue, pages 8-11.,19
- (3) “Community Opposes Boston University’s Proposed Biodefense Lab ,Press Release , June 26,2003.
- (4) BOSTON PUBLIC HEALTH COMMISSION REGULATION, BIOLOGICAL LABORATORY REGULATIONS, Adopted September 19,2006. They may be accessed at [http://www.bphc.org/board/pdfs/regs\\_LabRegFinal\\_9-19-06.pdf](http://www.bphc.org/board/pdfs/regs_LabRegFinal_9-19-06.pdf).
- (5) “Local Regulations of Biocontainment Laboratories:Enhancing biosafety, biosecurity and transparency, Lynn Klotz, BTWC Review Conference, Nov.-Dec 2006.
- (6) “Federal Funding for Biological Weapons Prevention and Defense, Fiscal Years 2001 to 2007” Center For Arms Control and Non-Proliferation, Biological and Chemical Weapons Control Program, Page 3
- (7) “An Expanded Biodefense Role for the National Institutes of Health”, Dr. Anthony Fauci, MD , , April 2002 This interview with Dr. Fauci can be found at <http://www.homelandsecurity.org/journal/articles/fauci.htm>.
- (8) Biowarfare and Terrorism, Francis Boyle, Clarity Press Inc., 2005
- (9) ACE, BU Bioterrorism Lab News, September 21,2006.,page 3
- (10) “A Biolab in Boston: Boston City Council Member Chuck Talks About Biodefense Research Expansion” by Sujatha Byravan, *Gene Watch* Volume 17 Number 5/6 September –December 2004, Special Biowarfare Issue, page 11.
- (11) “No Place to Hide”, Letter opposing the BSL 4 in Boston in April 2004 can be found on ACE web site, <http://www.ace-ej.org>.
- (12) “An Open Letter to Elias Zerhouni, *Science*, 4 March , 2005, Letters Section , Pages 1409-1410.



- (13) “Ensuring Safety and Security in Biomedical Laboratories and Facilities” House Bill 4937 Sponsored by State Representative Gloria Fox. The bill can be found on the ACE web site, <http://www.ace-ej.org>.
- (14) Commonwealth of Massachusetts Superior Court Civil Action No.05-0109.BSL2.,:”Memorandum and Order on Plaintiffs’ Motion for Judgment on the Pleadings” Pages 34-36.
- (15) ORDER,United States District Court District of Massachusetts Case 1:06-cv-10877-PBS Document 36 Filed 10/20/2006
- (16) The lawyers in these cases are the Lawyers’ Committee for Civil Rights under Law, the law firm of McRoberts & Rainer, and the Conservation Law Foundation. The latter works to solve the environmental problems that threaten the people, natural resources and communities of New England.
- (17) “Are US Biodefense Activities Making Us Safer?”, Lynn Klotz, *Science*, March 4, 2005, page1306e
- (18) “Inventing Bioterrorism: the Political Construction of Civilian Risk” Jeanne Guillemin in Making Threats:Biofears and Environmental Anxieties, ed by Betsy Hartman ,Banu Subramaniam, and Charles Zerver, Published by Rowman and Littlefield , New York, Page 212.
- (19)”The Lure of Bio-Weapons,”Bernard Lown and Prasanna Parthasarathi, Boston Globe, February 23, 2005

Marc Pelletier, a scientist in the Boston area alerted me to two very extensive investigations of the dual use issue . Biotechnology Research in an Age of Terrorism: Confronting the Dual Use D ilema by the Committee on Research Standards and Practices to Prevent the Destructive Application of Biotechnology, National Research Council of the National Academies , to be published by The National Academies Press, Washington, D.C. [www.nap.edu](http://www.nap.edu).  
 “Engineering Bio-terror Agents: Lessons From the Offensive U.S. and Russian Biological Weapons Program, Hearing before the Committee on Homeland Security, July 13, 2005, <http://www.gpoaccess.gov/congress/index.html>

