The Security of Our Biolabs

By Captain Anthony M. Benedosso

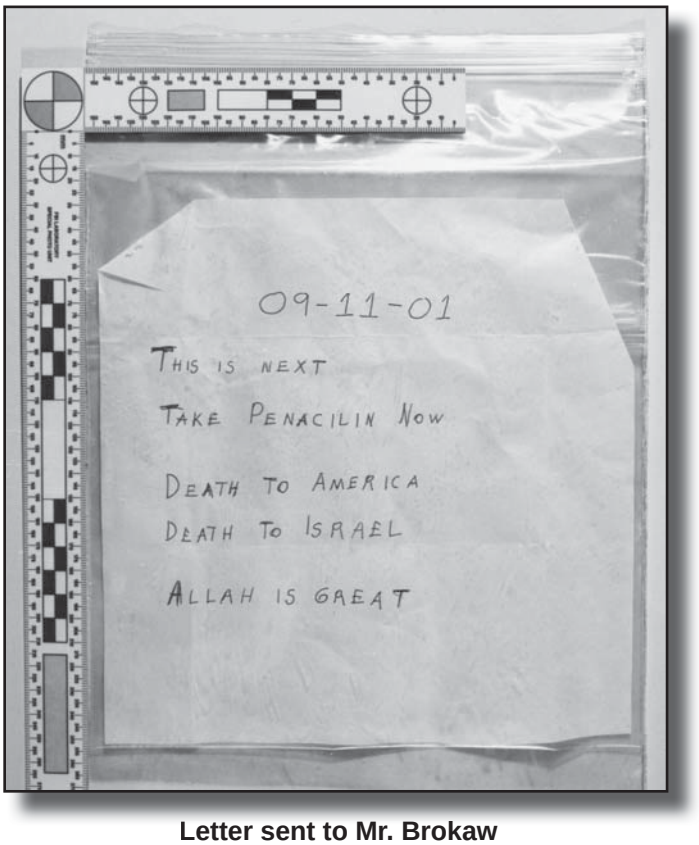
In September 2001, America struggled to recover in the wake of the most devastating attack on U.S. soil in history. For weeks, Americans were transfixed by images of the destroyed twin towers, which were hauntingly replayed on television. For a time, the attack on the twin towers paralyzed the Nation, but Americans soon became riveted by an equally frightening, albeit smaller, development—someone was sending potentially lethal doses of anthrax through the U.S. Postal Service to unwitting victims. Many Americans feared that simply opening their daily mail might expose them to a deadly biological agent, thereby endangering their lives. And neither federal authorities nor the U.S. media did much to quell the emerging paranoia. In fact, public officials and mainstream newscasters openly speculated that the attacks might be an extension of al-Qaida's attack on America. Ultimately, the Federal Bureau of Investigation (FBI) concluded that the letters containing anthrax originated with Dr. Bruce Ivins, a 62-year-old Department of Defense microbiologist with a history of mental illness.

While the FBI and federal prosecutors remain convinced that Ivins was the sole culprit in the anthrax attacks, his implication raises much greater questions that must be answered:

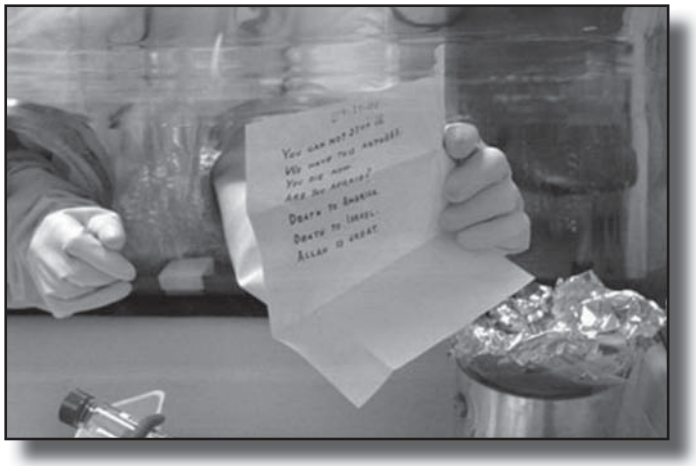
- How safe are biological labs across the United States?
- How likely is it that more scientists are willing to use their knowledge and capabilities for evil purposes?
- How likely is an American scientist to collaborate with an international terrorist cell?

The American public originally believed that the anthrax attacks were linked to the events of 11 September 2001. The letters themselves supported that conclusion. Letters containing anthrax were sent to Senator Patrick Leahy, Senator Tom Daschle, National Broadcasting Company (NBC) anchor Mr. Tom Brokaw, and the *New York Post*. It only made sense that an Islamic terrorist group seeking to disrupt Americans' sense of security would target two government officials, one of the country's most recognizable public figures, and one of the most widely read American newspapers. The content of the letters confirmed many of the worst fears.

The public sense of paranoia was only heightened by the fact that many mainstream media outlets, most notably American Broadcasting Company (ABC) News, repeatedly claimed that the presence of bentonite in the anthrax was compelling evidence that Iraq was responsible for the attacks. ABC insisted that bentonite is "a trademark of Iraqi leader Saddam Hussein's biological weapons program" and "only one country, Iraq, has



Letter sent to Mr. Brokaw



Checking the Senator Daschle letter for anthrax

used bentonite to produce biological weapons."[1] However, these findings were eventually contradicted and the FBI dismissed the idea that Iraq or al-Qaida was responsible for the attacks.

To add to the confusion, even the most expert minds in the field of bioterrorism are still unable to agree on the facts of the case. Dr. Kenneth Alibek, a former top official of the Soviet biological weapons program, publicly announced that the attacks were "primitive" in nature and that they were not the work of highly trained professionals.[2] However, Mr. William C. Patrick III, a microbiologist who headed the American offensive biological warfare program before it was officially suspended, disagrees. "It's high-grade," said Mr. Patrick. "It's free-flowing. It's electrostatic-free. And it's in high concentration."[3]

Seven years after the anthrax attacks, the FBI accused Ivins of the attacks, characterizing him as a "lone wolf" culprit, unaffiliated with any radical Islamic organization. Assuming that Ivins was responsible for the attacks, it is easy to point out the many warning signs that could have alerted others to his impropriety and instability. For instance, in April 2002, Ivins "came under scrutiny in an Army investigation of a leak of potentially deadly anthrax spores outside a sealed-off lab at Fort Dietrick [Maryland]. He later admitted he had discovered the leak but [had] not reported it."[4] Ivins also had a well-chronicled history of mental problems. Many assert that he suffered from an obsession stemming from a romance with a sorority member in his college days at the University of Cincinnati.[5] He was briefly hospitalized for depression and allegedly threatened to kill a social worker who had treated him in group therapy.[6]

Based on the Ivins case, it would be easy to conclude that security at U.S. biolabs is lax and porous. However, while Ivins' behavior may have raised suspicions retroactively, there were actually many legitimate reasons for previously overlooking that behavior. In 2003, Ivins received the highest Department of Defense civilian award. Furthermore, his recent work on a new anthrax vaccine was highly respected by his colleagues.[7] Those who worked with Ivins for many years saw nothing that drew suspicion or made them believe that he was responsible for the anthrax attacks. In fact, many of his colleagues are still convinced of his innocence. Thus, assigning blame for missing clues about Ivins' volatility is unproductive.

Therein lies the problem that law enforcement personnel face in trying to prevent future biological attacks; it is extremely difficult—or even impossible—to examine the unusual or antisocial behavior of every scientist who handles sensitive material. How can the FBI accurately draw a distinction between a dedicated, qualified scientist who happens to be a little eccentric and a mentally unstable scientist bent on wreaking havoc?

The fact that the biolab industry is growing at an astounding rate compounds this problem. Analysts estimate that since 2001, the federal government has "spent more than $16 billion on biodefense research and development—a tenth of it for construction of new labs."[8] No one knows exactly how many labs exist that experiment with highly dangerous pathogens such as anthrax. Mr. Keith Rhodes, the chief technologist with the General Accountability Office, believes that the number is "surely in the thousands."[9] And conservative estimates indicate that the number of technicians who handle such pathogens is about 15,000.[10] Mr. Rhodes succinctly summarized the situation when he told Congress, "I would have to say we are at greater risk because as the number [of biolabs] increases, the risk increases. And it's not just the increase in material; it's the increase in laboratories that have less experience than others."[11] He also reported a startling lack of oversight of biolabs, pointing out that there is no single federal agency responsible for determining the risks associated with the proliferation of labs.[12] "The labs are pretty much just overseeing themselves at this point," said Mr. Rhodes.[13]

In addition to a lack of oversight, many of these new labs suffer from a demonstrable lack of safety and security standards. In 2006, a biolab worker at Texas A&M University was infected with the deadly brucellosis virus.[14] The university did not report the case and may never have admitted its occurrence if Mr. Edward Hammond of the Sunshine Project had not convinced a local district attorney to force the university to release its internal records. The Centers for Disease Control subsequently uncovered "a host of other violations, including unauthorized experiments, failure to report three other infections of Q fever [a disease caused by infection with the bacterium *Coxiella burnetii*], failure to have all technicians vetted by the FBI, and missing pathogens and infected animals."[15]

Many industry insiders, such as Mr. John Steinbruner (security studies expert at the University of Maryland) and his colleagues, have publicly criticized the lack of biolab security and oversight. They say that serious safety measures have not been a priority in the results-driven national biolab program and that the current system allows scientists almost no accountability for their experiments, with "few guidelines and even fewer consequences for their mistakes."[16] Representative Bart Stupak went one step further by saying, "It's like we're building labs and hoping the germs will come."[17]

The expanding number of biolabs that handle dangerous pathogens, coupled with the questionable security conditions,

increases the probability that a "lone wolf" or rogue scientist could use his expertise to act maliciously. However, while the lack of governmental oversight and inadequate safety and security provisions are disconcerting, there is little doubt that a high-level scientist dedicated to releasing a dangerous biological agent could do so regardless of the security measures in effect. Any scientist who is truly committed and inordinately resourceful can surely find a way to circumvent security measures. Therefore, authorities are left with the hope that no such scientists exist—or that any scientist who wants to cause harm will have extremely limited aims.

The rogue operative has long been a problem for law enforcement and other governmental agencies. Robert Hanssen, a midlevel career FBI agent with a borderline personality disorder, betrayed dozens of covert agents and sold valuable information to the Soviets during the Cold War. Aldrich Ames, a bumbling midlevel Central Intelligence Agency operative, was found guilty of the same crimes. Dr. Theodore Kaczynski, a brilliant but highly eccentric mathematician, sent deadly letter bombs to lash out at a society that he felt was overly reliant on technology. All of these men posed serious problems for authorities. They all operated outside the auspices of easily monitored political action groups. Their reasons for betrayal were personal in nature, or they were motivated by greed. They used their particular genius or expertise to get away with their crimes for long periods of time. However, while these men caused significant damage, the solitary nature of their pursuits ultimately proved advantageous for law enforcement personnel. None of the men wished to cause mass casualties; they limited their efforts to specific subsets of people who met certain qualifications.

Obviously, though, there are rogue outsiders, such as Timothy McVeigh, who seek to cause mass destruction. However, McVeigh was not a career employee of a federal agency or a highly skilled mathematician with an exceptional scientific aptitude. He was simply a disillusioned, out-of-work loner who advocated the violent overthrow of the federal government.

Fortunately, there are statistically few incidents of highly intelligent people inside government agencies or government-sponsored programs who succeed in advancing a radical terrorist agenda. However, Dr. Richard Ebright (a chemistry professor at Rutgers University, Piscataway, New Jersey) asserts, "You cannot persuade me there are not more disturbed or disgruntled persons with a political agenda in such a large group."[18] It is likely, though, that the next rogue scientist discovered at a U.S biolab will have more in common with Hanssen or Kaczynski than with McVeigh.

A rogue scientist operating from inside a U.S. biolab would probably be someone who had worked in the lab for a considerable amount of time and would, therefore, have certain advantages. He would likely be familiar with the lab customs and security measures—or the lack thereof. He would probably also enjoy a level of seniority in the lab, which would mean that very few people would closely oversee or check his work. Mr. Hammond explained this situation by stating, "The principal

Searching for anthrax

investigators rule the roost in their labs. One of the complaints by people who work in safety and security is they can't get the time of day from people running the labs."[19] He went on to add that security questions are "viewed as deeply offensive by a lot of scientists, as if their patriotism is being questioned."[20]

Mr. Henry C. Kelley, the president of the Federation of American Scientists, also believes that biologists have historically had an "instinctive antipathy toward national security policy . . . " and that most of them remain "willfully oblivious about the extent of the biological terrorism threat."[21]

Additionally, a rogue scientist is unlikely to make the mistake of associating with a visible political action group. Instead—like Hanssen, Ames, and Kaczynski—he is likely to keep his grievances quiet. This makes him harder to track, but his actions are usually less destructive.

It is far less clear whether a biolab scientist would ever work with al-Qaida or some other terrorist group intent on causing mass casualties. As previously mentioned, most brilliant eccentrics and rogue government agents do not wish to cause massive public fear or loss of human life. For example, Hanssen and Ames worked with the Soviets to resolve their own personal problems, but they confined their damage primarily to members of the intelligence community. They did not conspire to overthrow the U.S. Government or cause a massive loss of human life. Likewise, Kaczynski did not plant his deadly bombs in public places, where casualties would have been maximized. Instead, he targeted specific, protechnology individuals. Ivins allegedly operated the same way; no one accused him of attempting to unleash a devastating biological attack on the American people. In fact, one of the first clues that the FBI used to determine that the anthrax did not originate from the Middle East was that the seams of the anthrax-laden envelopes were taped to prevent cross contamination.[22] Investigators also noted that any Islamic terrorist group intent on killing people was unlikely to include a message detailing what was inside the envelope as Ivins had.[23]

So, someone like Ivins represents the most likely threat from a biolab. Any scientist secretly plotting with terrorists is unlikely to be as successful as Ivins allegedly was at concealing it. He would need to be able to communicate and coordinate with radical jihadists in the United States or abroad without arousing suspicion. He would also need to hide any financial arrangements with the terrorists from his colleagues and law enforcement personnel. Furthermore, knowing the devastation it would reap on his fellow citizens, it would be necessary for any scientist who was willing to unleash a large-scale biological attack on a major U.S. city to be immensely dedicated to the terrorist cause. It is unlikely that a senior level scientist could be that committed to a radical agenda without giving away some fairly obvious warning signs.

While it may be unlikely that a scientist will work with al-Qaida or some other terrorist group, the possibility should not be completely dismissed. It is possible for a senior level biological scientist to undergo a radical ideological conversion and simply decide to take actions that would have previously been unthinkable. It is also possible for colleagues and lower-level employees, through ignorance or fear of confrontation, to ignore warning signs. Nevertheless, the most pressing fear facing Americans is that of a rogue scientist in the model of Ivins.

The law enforcement and the scientific communities must create tough, comprehensive standards for regulating the burgeoning biolab industry. Only by confronting this problem can Americans feel safer about the possibility of being attacked by their own biological creations.

Endnotes

[1]Glenn Greenwald, "Vital Unresolved Anthrax Questions and ABC News," *Salon*, 1 August 2008.

[2]"Experts Disagree Over Anthrax Attacks' Origin," *USA Today*, 5 December 2001.

[3]William J. Broad, "A Nation Challenged: The Spores; Contradicting Some U.S. Officials, 3 Scientists Call Anthrax Powder High-Grade," *The New York Times*, 25 October 2001.

[4]Scott Shane and Eric Lichtblau, "Scientist's Suicide Linked to Anthrax Inquiry," *The New York Times*, 2 August 2008.

[5]Scott Shane, "Portrait Emerges of Anthrax Suspect's Troubled Life," *The New York Times*, 3 January 2009.

[6]Shane and Lichtblau, 2 August 2008.

[7]Ibid.

[8]Emily Ramshaw, "Boom in Biodefense Labs Sparks Security Debate," *Dallas Morning News*, 26 October 2007.

[8]Ken Stier, "How Safe Are Our Bio Labs?" *Time*, 5 October 2007.

[10]Ibid.

[11]Ibid.

[12]Ibid.

[13]Ramshaw, 26 October 2007.

[14]Stier, 5 October 2007.

[15]Ibid.

[16]Ramshaw, 26 October 2007.

[17]Ibid.

[18]Larry Margasak and David Dishneau, "Is Another Bruce Ivins Lurking in a Biolab?" *Guardian*, 3 August 2008.

[19]Ibid.

[20]Ibid.

[21]Henry C. Kelley, "Terrorism and the Biology Lab," *The New York Times*, 2 July 2003.

[22]Shane and Lichtblau, 2 August 2008.

[23]Ibid.

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("The Maneuver Enhancement Brigade" continued from page 27)

the tailored design ensures that it can provide all essential maneuver support functions to the supported commander. While the MEB is only one part of a division force package, it is required to ensure seamless support to the division across the spectrum of conflict. There are twenty-three MEBs planned for the total force—four in the Active Army, three in the U.S. Army Reserve, and sixteen in the Army National Guard. We began to activate MEBs in 2006 and will continue to activate them through 2012. So far, fourteen MEBs have been activated and several have already deployed.

The MANSCEN challenge now is to develop a culture of leaders who can visualize, describe, and direct the many capabilities resident in the MEB to support a transforming Army.

Endnotes:

[1]"Our Army at War: Relevant and Ready," *Soldiers Magazine*, January 2004.

[2]Field Manual Interim (FMI) 3-0.1, *The Modular Force*, 28 January 2008.

[3]FM 3-90.31, *Maneuver Enhancement Brigade Operations*, 26 February 2009.

[4]Ibid.

[5]Ibid.

[6]Ibid.

[7]Ibid.

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