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Bioterrorism

Τεύχος 1 – 2010 – Volume 1

ΕΥΓΕ ΣΤΑ ΠΑΛΙΚΑΡΙΑ ΤΗΣ ΠΡΟΕΔΡΙΚΗΣ ΦΡΟΥΡΑΣ !!!

Ο Πρόεδρος της Δημοκρατίας συνεχάρη θερμά τους τρεις Ευζώνους για την πιστή εκτέλεση του καθήκοντός τους. ***«Στα δύσκολα φαίνεται η ψυχή του Έλληνα. Είστε παλικάρια και θα είστε καλοί πολίτες»*** *είπε ο Κάρολος Παπούλιας στα τρία μέλη της προεδρικής φρουράς.*

Τους τρεις Ευζώνους είχε ειδοποιήσει η αστυνομία για την επικείμενη τρομοκρατική επίθεση, αφού ενημερώθηκε για το προειδοποιητικό τηλεφώνημα στην Ελευθεροτυπία, λίγα λεπτά πριν από την έκρηξη της βόμβας στον προαύλιο χώρο της Βουλής (10 Ιαν 2010). Τα τρία μέλη της προεδρικής φρουράς επέλεξαν να παραμείνουν στις θέσεις τους, μπροστά στο μνημείο του Άγνωστου Στρατιώτη. Ο λοχίας των δύο Ευζώνων στάθηκε ανάμεσά τους, καθώς το φυλάκιό του βρισκόταν σε απόσταση μόλις πέντε μέτρων από τη θέση που είχαν δώσει ως σημείο τοποθέτησης της βόμβας οι τρομοκράτες. Από την έκρηξη σημειώθηκαν μικρές υλικές ζημίες στο φυλάκιο του λοχία των Ευζώνων.

Πρόκειται για τον ***19χρονο Μάριο Θ. από την Λειβαδιά*** *ο οποίος απολύεται στις 18 Μαρτίου, τον* ***21χρονο Βασίλη Β. από τη Νάξο*** *και τον* ***Γιάννη Α. 28 ετών από τη Μάνη****, οι οποίοι απολύονται στις 18 Μαΐου του 2010.*

Από τη συνάντηση των τριών νέων ανδρών με τον Πρόεδρο της Δημοκρατίας έγινε γνωστό και ποια ακριβώς ήταν η αντίδρασή τους την ώρα της έκρηξης: Ο παρατηρητής φρουράς που είχε ήδη ενημερωθεί ότι υπάρχει βόμβα πλησίασε εσπευσμένα τους δύο Ευζώνους, τους ενημέρωσε και τους ρώτησε εάν θέλουν να απομακρυνθούν. ***Εκείνοι με ένα νεύμα των ματιών τους του απάντησαν «ΟΧΙ» και παρέμειναν στις θέσεις τους.***

Τιμή στους ίδιους και στους γονείς που τους ανάθρεψαν. Τιμή στον Έλληνα Δάσκαλο που τους έμαθε γράμματα και φιλότιμο. Τιμή στον Διοικητή και τους Αξιωματικούς που εμπνέουν τέτοια Πίστη , τέτοια Τιμή.

Καλή Χρονιά με Υγεία, Ασφάλεια και Επαγγελματικές Επιτυχίες
για όλους τους φίλους και φίλες της Πρώτης Γραμμής !

Μια καινούργια χρονιά αρχίζει μεταφέροντας τα προβλήματα της προηγούμενης και το άγνωστο της επόμενης. Η έλλειψη συνεργατών περιορίζει αναγκαστικά και δραστικά το Ελληνικό σκέλος του Δελτίου. Έτσι θα υπάρχει πλέον σχολιασμός στα Ελληνικά μόνον σε πολύ ιδιαίτερα άρθρα ή σε εκείνα που αναφέρονται σε ιδέες ή προτάσεις που θα μπορούσαν να έχουν άμεση εφαρμογή ή χρήση στη χώρα μας. Παράλληλα θα επισημαίνονται με κόκκινο χρώμα τα κύρια σημεία σε κάθε είδηση. Ευελπιστώ κάποια στιγμή να υπάρχει η δυνατότητα για μια καλύτερη παρουσίαση που σήμερα δεν είναι δυνατή λόγω πολλών υποχρεώσεων και καθηκόντων. – ΣΣ

25 YEARS AFTER BHOPAL'S LEATHAL GAS LEAK
NEW STUDY

For a study in government and corporate inertia and indifference amid massive human suffering, come to this stylish old central Indian city where, 25 years ago tomorrow (Wed) night, a gas leak at a Union Carbide pesticide factory (left) led to the death of over 5,000 people and continuing ill health of over 500,000 in one of the world's worst industrial disasters. The site remains virtually as it was 25 years ago, with gaunt steel structures and dilapidated factory buildings still standing, as governments and pressure groups argue about what should be done to clean it up along with nearby chemical dumpsites. Court cases continue in India, the US and elsewhere, while Dow of the US, which has taken over Union Carbide, runs for cover. The state government dreams of turning the site and decaying structures into a 70-acre Rs116cr ($23m) landscaped memorial "like Nagasaki or (New York's) Ground Zero", according to Babulal Gaur, an 80-year old Bharatiya Janata Party (BJP) minister who is responsible for relief and rehabilitation in the government of Madhya Pradesh, where Bhopal is the capital. The key structures (below) are the Sevin and MIC plants which blew that night.

I interviewed Gaur this morning, and he told me that the factory site's "soil is very clean and the water is very clean". Any water problems in the area were caused by nearby Indian Oil petrol tanks (which are to be moved), not the gas plant. Health problems were caused by the poor living, as they usually do, in "unhealthy conditions", not the by the aftermath of the gas leak. That reversed a statement he made five years ago that the then Congress Party state government was downplaying the effects and that the BJP "would hold Dow responsible". This supreme example of

a politician in denial was confounded three hours later when a new independent report was published, which alleged that there is far greater contamination from 1984 than had been previously expected on both the site itself, and in nearby residential areas' groundwater. Published by the Delhi-based Centre for Science and Environment (CSE), an independent organisation that specialises in pollution testing and environmental issues, the report says that pesticides and other dangerous chemicals are present at over 500 times Indian standard levels in some areas.

The disaster happened on the night of December 2nd 1984, when water accidentally entered a methyl isocyanate (MIC) storage tank (right), triggering an uncontrollable chemical reaction and blasting a cloud of toxic gases across nearby slums. People died instantly, coughing and choking, while the gases burned into the survivors' eyes and lungs to cause early death and ill health, with weakened immune systems and respiratory problems that now continue into a second generation. According to official figures, some 5,000 people have died, though some estimates go as high as 30,000, while over 570,000 (and maybe as many as 1m) have suffered health disorders. I came to Bhopal a couple of days after the disaster in 1984 to report for the Financial Times. There was a continuing acrid tang in the air. Bloated carcasses of dead animals lay in the streets, and funeral pyres were till burning. It rapidly became clear that the accident had happened because Union Carbide had tired of its Indian investment that had not come up to over-egged corporate expectations. Wanting to close it down, it had allowed safety standards and management control to decline disastrously, along with staff morale. Dow, together with its Union Carbide subsidiary, denies responsibility for victims' health or the state of the site, following an overall settlement reached in 1989 with the Indian government. The claims totalled $3 billion, but the Indian government settled for $470m (then worth 7.5 billion rupees) plus a further $43m that has still to be fully distributed. Down the years, there have been many allegations of corruption and of other payments involving the Indian government and its agencies, state level officials and politicians, and Dow. Two years ago, Dow admitted it had been fined $325,000 by America's Securities and Exchange Commission (SEC) because employees in India had bribed officials. "We know that Dow subscribed to the BJP election funds," Sathyu Sarangi, a leading Bhopal activist who runs a successful ayurvedic-based medical clinic for gas victims. Today's CSE report seriously undermines the state government's apparent attempt to protect Dow by saying that there are no continuing ground and water effects, nor health problems, resulting from the 1984 leakage. The CSE says that groundwater in areas up to 3kms from the site contains pesticides 40 times India's acceptable standards. This contradicts reports by three government agencies that say there are no continuing serious effects. The CSE took test samples last month and says various pesticides (some not covered by government standards) are present in health-endangering concentrations. Sunita Narain, who runs the CSE, differentiated between the government claiming that toxicity on and near the site was not acute, which might be correct, and the CSE's claims that there is nevertheless chronic toxicity. "Of course, if you go inside the site, you would not die," said Narain, "but if you live there for ten years, you will suffer effects". These effects could not be

assessed till more long-term studies were carried out. The CSE's findings will be partially corroborated and partially questioned in about ten days' time by the Delhi-based government-controlled Central Pollution Control Board (CPCB), which took soil samples at the same time as the CSE on October 28, and also took water samples two weeks earlier. Among its findings are "very high" levels of chloroform in ground water. Plans by both the state government, and local pressure groups to make the key structures a centrepiece of the memorial are questioned by CPCB officials have told me that they would have to be dismantled in order to clean the site. The officials also query state government plans to open the site to the public, which was planned for this week but has been delayed because (the government claims) of rules restricting its actions during a current Bhopal municipal election campaign.

The CPCB officials say the site is still contaminated, including pools of mercury in some areas, despite 5,000 tonnes of waste lying around the site being moved into a warehouse in 2005 – though the government has allowed local people (above, gathering wood) to roam the site for years. India's government wants to end the impasse on all fronts, partly for humanitarian reasons and partly so that Dow can rapidly expand investments that are currently curtailed and under attack by activists. However, the Madhya Pradesh state government is resisting Delhi's attempts to set up an overall "empowered commission" to co-ordinate progress. Part of the problem is Dow's refusal formally to accept responsibility for what Union Carbide allowed to happen. Sathyu Sarangi told me yesterday that a "compromise could be reached" if Dow, maybe without acknowledging legal responsibility, made provision for health damages and monitoring of patients, and agreed to clean up the site and surrounding areas, which it is resisting. "That would be some sort of compromise that we would consider", he said. However not all the activists are in a hurry – which is scarcely surprising since they have built a life-style around the disaster. Abdul Jabber, a leading local activist, points out that it took India 90 years from the first mutiny (or war of independence) in 1857 to achieve independence. "We will wait," he says.

DEFENSE AGENCY SIMULATES BIOLOGICAL ATTACK ON PENTAGON

The risk of attack against senior government and military officials always has been high, making protection of the Pentagon and other buildings in the national capital area a top priority, a senior official involved with a recent bio-attack drill said. Paul Benda and Christina Murata -- director and deputy director, respectively, of the Pentagon Force Protection Agency's chemical, radiological, nuclear and explosives directorate -- spoke about preparing for a biological attack on the Pentagon during a July 22 webcast of "Armed with Science: Research and Applications for the Modern Military" on Pentagon Web Radio. Benda and Murata explained how they used a commercial garden powder to simulate a biological attack in a July 11 test of response procedures and decontamination methods, and how the findings of their test will affect future response to bio-weapon attacks. More than 200 people participated in the test, including 87 volunteers who were exposed to the garden powder and washed down. The Pentagon Force Protection Agency has conducted tests regularly since 2005 to gather data to better protect people in the event of a biological attack. "We spread [the powder] across the reservation," Benda said. "We had volunteers that got exposed to it. The building was exposed to it. We tracked where this powder went and where it went on our volunteers." The directorate tested different options for decontamination, from portable showers to what Benda described as a "wall of water." More than a dozen organizations participated in the test in hopes of finding the easiest and most effective methods. "We wanted to compare the different decontamination strategies," Benda said. "What's the fastest way to clean these people? What works the best?" The quickest, most effective cleaner they found was water, Murata said. Simply flushing items with water cleaned more than 95 percent of contaminants from the road and more than 90 percent from vehicles. "It's that old fireman's adage that there's no problem that enough water can't cure," Murata said. "Point for point, water did the best." For personnel contaminated with a biological weapon, the best cleaning method was to make a "wall" of water using five fire trucks. Four pumper trucks fired water against each other while a ladder truck released water from above. Volunteers walked through the streams, scrubbing their body and hair to remove contaminants. "This is a standard capability that every fire department has," Benda said. "Whether it's a volunteer fire department or a professional fire department, they're able to use their standard nozzles, connected to a hydrant, to create this decontamination capability." The beauty of using fire trucks, beyond their accessibility regardless of location, is their effectiveness. It's not a new technology, but it performs on par with other decontamination methods. "It works as well, if not better than specific technologies, and it gives us faster through-put," Benda said. Once the team sorts the data from this test and figures out which questions have been answered and what new questions have arisen, they'll share the findings and begin planning for the next test. And though certain information in tests related to security for Defense Department and other government employees is safeguarded, the information that applies to organizations nationwide will be spread through professional conferences and published articles. "We do our best to get the information out that will protect the nation as a whole," Benda said.

PANDEMIC SURVEY FINDS 1 IN 6 PUBLIC HEALTH WORKERS UNLIKELY TO RESPOND

Approximately 1 in 6 public health workers said they would not report to work during a pandemic flu emergency regardless of its severity, according to a survey led by researchers at the Johns Hopkins Bloomberg School of Public Health. The findings are a significant improvement over a 2005 study conducted by the same research team, in which more than 40 percent of public health employees said they were unlikely to report to work during a pandemic emergency. The new study suggests ways for improving the response of the public health workforce. The results are published in the July 24 edition of the journal PLoS ONE. "Employee response is a critical component of preparedness planning, yet it is often overlooked. Our study is an attempt to understand the underlying factors that determine an employee's willingness to respond in an emergency," said Daniel Barnett, MD, MPH, lead author of the study and assistant professor in the Department of Environmental Health Sciences at the Bloomberg School of Public Health. "Overall, 16 percent of the workers surveyed said they would not report regardless of the severity of the outbreak." The online survey was conducted among 1,835 public health workers in Minnesota, Ohio and West Virginia from November 2006 to December 2007. The survey analysis was based on the Extended Parallel Process Model (EPPM), which postulates that willingness to follow instructions in an emergency is based on an individual's perception of a threat's validity and belief that the actions taken can be feasibly accomplished and will have a positive impact on the threat. According to the survey, public health workers who were both "concerned" about the threat posed by a pandemic, and who were "confident" that they could fulfill their response roles and that their roles would have a meaningful impact on the situation, were 31 times more likely to respond to work in an emergency than those who perceived the threat low, and had low levels of confidence. Workers whose perception of the threat was "low" but who strongly believed in the efficacy of their job were 18 times more likely to say they would respond compared to those in the "low threat/low efficacy" group. "We found belief in the importance of one's work was strongly associated with a willingness to report to work in an emergency. Our results could help preparedness planners to identify workforce needs and develop strategies for improving worker response," co-author said Ran Balicer, MD, Ph.D., MPH, senior lecturer in the Epidemiology Department at the Ben-Gurion University of the Negev in Israel, and Joint Editor of the Israeli Ministry of Health Pandemic Preparedness Plan. "This study is important in that it both documents the problem and points the way towards specific interventions--those that increase both concern and confidence--to increase willingness to respond," said Jonathan Links, Ph.D., professor in the Bloomberg School's Department of Environmental Health Sciences and director of the Public Health Preparedness Programs. Additional authors of "Assessment of Local Public Health Workers' Willingness to Respond to Pandemic Influenza through Application of the Extended Parallel Process Model" are Carol B. Thompson. J. Douglas Storey, Saad B. Omer, Natalie L. Semon, Steve Bayer, V. Lorraine Cheek, Kerry W. Gateley, Kathryn M. Lanza, Jane A. Norbin, Catherine C. Slemp and Jonathan Links. The research was funded by CDC's Centers for Public Health Preparedness program, and by CDC's Preparedness and Emergency Response Research Centers program. In a June 24 press briefing, Dr. Anne Schuchat, director of CDC's National Center for Immunization and Respiratory Diseases, recommend that health care workers get the

2009-10 seasonal flu vaccine and also the H1N1 vaccine when it's ready."I want to make a special reminder to health care workers," Schuchat said. "This year in particular, we want to keep health care workers healthy" so they can help people who do become sick, she said. It's "very likely" health care workers will be included among the groups for which the government will recommend the H1N1 flu vaccine when it is available this fall. CDC recommends about 83 percent of the U.S. population should get the 2009-10 seasonal flu vaccine, but only 40 percent were vaccinated last year.

ANTHRAX ATTACK REQUIRES EARLY DETECTION & QUICK RESPONSE

A large attack on a major metropolitan area with airborne anthrax could affect more than a million people, necessitating their treatment with powerful antibiotics. A new study finds that in order for a response to be effective, quick detection and treatment are essential, and any delay beyond three days would overwhelm hospitals with critically ill people. The results of a computer simulation study appear in the 2009 July/August edition of the journal Medical Decision Making -- one of two studies by Dr. Nathaniel Hupert of Weill Cornell Medical College in the issue. "No matter how well-organized and prolonged a treatment program is, it must be quickly implemented. In fact, our analysis shows that **time-to-treatment is roughly twice as important as the duration of the distribution program**," says lead author Dr. Nathaniel Hupert, associate professor of public health and medicine at Weill Cornell Medical College."Crucial to rapidly implementing a treatment program is early detection, including thorough use of advanced biosurveillance technologies and live, person-to-person communication," continues Dr. Hupert, who is also director of the new Preparedness Modeling Unit at the U.S. Centers for Disease Control and Prevention (CDC). "But most important of all are multilateral diplomatic efforts to prevent bioterrorist attacks from ever happening." The study predicts that a campaign initiated two days after exposure would protect as many as 87 percent of exposed individuals from illness -- a rate considered successful by the CDC. Each additional day needed to complete the campaign would result in an average of up to 2.9 percent more hospitalizations in the exposed population. And **each extra day of delay to the start of the program beyond two days would result in up to 6.5 percent more hospitalizations.** Anthrax attack scenarios typically involve the release of one kilogram of weaponized anthrax from a small airplane flying over a major city. The invisible powder could be inhaled by thousands or hundreds of thousands, who would start becoming sick anywhere from 24 hours to a week or more after the attack. With appropriate and timely administration of an antibiotic treatment program, exposed individuals would be spared from developing inhalational anthrax infection. Co-authors include Daniel Watson of Washington University School of Medicine in St. Louis, Mo.; Jason Cuomo of Operation USA, Culver City, Calif.; and Weill Cornell's Dr. Wei Xiong, and Eric Hollingsworth and Kristof Neukermans, formerly research data specialists in the Weill Cornell Department of Public Health, reporting to Dr. Hupert. The study is funded by the U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality, and the National Institutes of Health.

Guidelines for Computer Modeling of Disaster Response Dr. Hupert is co-author the

first-ever position paper of the Society for Medical Decision Making -- also appearing in the 2009 July/August edition of the journal Medical Decision Making. The study tackles a challenge in the emerging field of disaster response planning -- the confusing variety of approaches to computer modeling. Computer modeling is increasingly used to predict and plan for disaster response. But because there are so many different modeling methods, researchers have been unable to compare results between models. Dr. Hupert and his co-authors looked at various approaches and recommend several best practices: models should address real-world problems, be designed for maximum usability, strike the appropriate balance between simplicity and complexity, include appropriate outcomes, and be designed to evaluate the many uncertainties inherent in disaster response. Finally, the authors stress that clear and complete reporting of model results is particularly critical for disaster response models. The study's lead author is Dr. Margaret Brandeau of Stanford University. Additional co-authors include Jessica McCoy, Jon-Erik Holty and Dena Bravata of Stanford University.

SAUDI ARABIA READY TO FACE RADIOLOGICAL DISASTEr

Saudi Arabia has a national emergency plan ready to respond to radiological emergencies, according to Abdulrahman Mohammed Alarfaj, energy expert working at the Atomic Energy Research Institute of the Riyadh-based King Abdulaziz City for Science and Technology (KACST). “The plan gets activated in case of any radiological disaster,” Alarfaj, said in Riyadh on Saturday. Saudi Arabia is to send a delegation to the meeting of the Arab Atomic Energy Agency (AAEA) in Tunis on Monday. The meeting will be co-chaired by Yemen and Jordan. Besides Saudi Arabia, delegates from Jordan, Bahrain, Egypt, Tunisia, Libya, Sudan, Syria, Iraq, Palestine, Kuwait, Lebanon and Yemen, will attend the meeting. Alarfaj said the meeting will draw out several proposals and programmes following the adoption of an Arab strategy for peaceful nuclear development by an Arab summit in Doha in March 2009.. Alarfaj, who will be attending the meeting, highlighted the activities the AAEA with special reference to the agenda of the four-day meeting, and said the Kingdom was well equipped to control and manage any radiological emergency. The plan addresses first and foremost commercial radiological utilisations, such as nuclear medicine and radiological institutions in the Kingdom. “If the disaster goes out of control, then the Kingdom’s national plan gets activated,” he said. He added that more than 23 relevant organisations and government agencies, including the ministries of health, agriculture and electricity are represented on the national body to respond to radiological disasters. The plan works with the Civil Defence as the focal point under the ministry of interior. Alarfaj said that the Kingdom has 13 radiotherapy and 50 nuclear medicine centres, which are monitored by KACST. Spelling out the agenda of the AAEA meeting, he said that the executive board of this Arab atomic body would convene its session to discuss the whole spectrum of issues, primarily a pan-Arab programme for peaceful nuclear use. The meeting would work out details to host the next biennial Arab conference on nuclear energy for peaceful purposes. He said that the meeting would also focus on training manpower to apply new nuclear techniques in the fields of medicine, radio therapy and in many other related areas. The AAEA session will also approve the agenda and review the past activities that included several training programmes hosted by member states over the last six months. Asked

about the possibility of industrial disasters with radioactive leaks, he said that most of the major industries were using industrial gauges, which regulate and control such problems. Moreover, the Kingdom has a broad range of specialties needed in a radiological emergency, including health and safety specialists, laboratory technicians, protective equipment, and decontamination experts. “That is why the task force set up under the national plan is fully prepared to respond quickly to incidents of radiological contamination, wherever they may occur,” he said.

MARTIAL LAW AND THE MILITARIZATION OF PUBLIC HEALTH: THE WORLDWIDE H1N1 FLU VACCINATION PROGRAM

Λεπτομέρειες μεταξύ των γραμμών και πίσω από αυτές…

"The flu season is upon us. Which type will we worry about this year, and what kind of shots will we be told to take? Remember the swine flu scare of 1976? That was the year the U.S. government told us all that swine flu could turn out to be a killer that could spread across the nation, and Washington decided that every man, woman and child in the nation should get a shot to prevent a nation-wide outbreak, a pandemic." (Mike Wallace, CBS, 60 Minutes, November 4, 1979)

"The federal officials and industry representatives had assembled to discuss a disturbing new study that raised alarming questions about the safety of a host of common childhood vaccines administered to infants and young children. According to a CDC epidemiologist named Tom Verstraeten, who had analyzed the agency's massive database containing the medical records of 100,000 children, a mercury-based preservative in the vaccines -- thimerosal -- appeared to be responsible for a dramatic increase in autism and a host of other neurological disorders among children....

"It's hard to calculate the damage to our country -- and to the international efforts to eradicate epidemic diseases -- if Third World nations come to believe that America's most heralded foreign-aid initiative is poisoning their children. It's not difficult to predict how this scenario will be interpreted by America's enemies abroad." (Robert F. Kennedy Jr., Vaccinations: Deadly Immunity, June 2005)

"Vaccines are supposed to be making us healthier; however, in twenty-five years of nursing I have never seen so many damaged, sick kids. Something very, very wrong is happening to our children."(Patti White, School nurse, statement to the House Government Reform Committee, 1999, quoted in Robert F. Kennedy Jr., Vaccinations: Deadly Immunity, June 2005)

"On the basis of ... expert assessments of the evidence, the scientific criteria for an influenza pandemic have been met. I have therefore decided to raise the level of influenza pandemic alert from Phase 5 to Phase 6. The world is now at the start of the 2009 influenza pandemic. ... Margaret Chan, Director-General, World Health Organization (WHO), Press Briefing 11 June 2009)

"As many as 2 billion people could become infected over the next two years — nearly one-third of the world population." (World Health Organization as reported by the Western media, July 2009)

"Swine flu could strike up to 40 percent of Americans over the next two years and as many as several hundred thousand could die if a vaccine campaign and other measures aren't successful." (Official Statement of the US Administration, Associated Press, 24 July 2009).

"The U.S. expects to have 160 million doses of swine flu vaccine available sometime in October", (Associated Press, 23 July 2009)
"Vaccine makers could produce 4.9 billion pandemic flu shots per year in the best-case scenario", Margaret Chan, Director-General, World Health Organization (WHO), quoted by Reuters, 21 July 2009)
Wealthier countries such as the U.S. and Britain will pay just under $10 per dose [of the H1N1 flu vaccine]. ... Developing countries will pay a lower price." [circa $400 billion for Big Pharma] (Business Week, July 2009)

- War without borders, a great depression, a military adventure in the Middle East, a massive concentration of wealth resulting from the restructuring of the global financial system.
- The unfolding economic and social dislocations are far-reaching.
- People's lives are destroyed.
- The World is at the juncture of the most serious crisis in modern history.
- Bankruptcies, mass unemployment, the collapse of social programs, are the untold consequences.
- But public opinion must remain ignorant of the causes of the global crisis.
- "The worst of the recession is behind us";
- "There are growing signs of economic recovery",
- "The Middle East War is a 'Just War'", a humanitarian endeavor,
- Coalition forces are involved in "peace-keeping," we are "fighting terrorism with democracy"
- "We must defend ourselves against terrorist attacks"
- Figures on civilian deaths are manipulated. War crimes are concealed.
- People are misled on the nature and history of the New World Order.

The real causes and consequences of this Worldwide economic and social collapse remain unheralded. Realities are turned up side down. The "real crisis" must be obfuscated through political lies and media disinformation.
It is in the interest of the political powerbrokers and the dominant financial actors to divert public attention from an understanding of the global crisis.

How best to achieve this goal?
By artificially creating an atmosphere of fear and intimidation which serves to weaken and disarm organized dissent directed against the established economic and political order.
The objective is to undermine all forms of opposition and social resistance.
We are dealing with a diabolical project. The public must not only remain in the dark. As the crisis worsens, as people become impoverished, the real causes must be replaced by a set of fictitious relationships.
A crisis based on fake causes is heralded: "the global war on terrorism" is central to misleading the public's understanding of the Middle East War, which is a battle for the control over extensive reserves of oil and natural gas.
The antiwar movement is weakened. People are unable to think. They unequivocally endorse the "war on terrorism" consensus. They accept the political lies. In their inner consciousness, terrorists are threatening their livelihood.

In this framework, the occurrence of "natural disasters", "pandemics", "environmental catastrophes" also plays a useful political role. It distorts the real causes of the crisis. It justifies a global public health emergency on humanitarian grounds.

The Worldwide H1N1 swine flu pandemic: Towards a Global Public Health Emergency?

The Worldwide H1N1 swine flu pandemic serves to mislead public opinion.

The 2009 pandemic, which started in Mexico in April, is timely: it coincides with a deepening economic depression. It takes place at a time of military escalation.

The epidemiological data is fabricated, falsified and manipulated. According to the World Health Organization (WHO), an epidemic of worldwide proportions now looms and threatens the livelihood of millions of people.

A "Catastrophic Emergency" is in the making. The WHO and the US Centre for Disease Control (CDC) are authoritative bodies. Why would they lie? The information released by these organizations, although subject to statistical errors, could not, by any stretch of the imagination, be falsified or manipulated.

People believe that the public health crisis at a global level is real and that government health officials are "working for the public good."

Press reports confirm the US government's intent to implement a mass H1N1 vaccination program in Fall-Winter of 2009. A major contract for 160 million doses has been established with Big Pharma, enough to inoculate more than half the US population. Similar plans are ongoing in other Western countries including France, Canada, the UK.

Volunteers are being recruited to test the swine flu vaccine during the month of August, with a view to implementing a nationwide vaccination program in the Fall.

Manipulating The Data

There is ample evidence, documented in numerous reports, that the WHO's level 6 pandemic alert is based on fabricated evidence and a manipulation of the figures on mortality and morbidity resulting from the N1H1 swine flu.

The data initially used to justify the WHO's Worldwide level 5 alert in April 2009 was extremely scanty. The WHO asserted without evidence that a "global outbreak of the disease is imminent". It distorted Mexico's mortality data pertaining to the swine flu pandemic. According to the WHO Director General Dr. Margaret Chan in her official April 29 statement: "So far, 176 people have been killed in Mexico". From what? Where does she get these numbers? 159 died from influenza out of which only seven deaths, corroborated by lab analysis, resulted from the H1N1 swine flu strain, according to the Mexican Ministry of Health.

Similarly in New York city in April, several hundred children were categorized as having the H1N1 influenza, yet in none of these cases, was the diagnosis corroborated on a laboratory test.

"Dr. Frieden said. Health officials reached their preliminary conclusion after conducting viral tests on nose or throat swabs from the eight students, which allowed them to eliminate other strains of flu."

Tests were conducted on school children in Queen's, but the tests were inconclusive: among theses "hundreds of school children", there were no reports of laboratory analysis leading to a positive identification of the influenza virus. In fact the reports are contradictory: according to the reports, the Atlanta based CDCP is the "only lab in the country that can positively confirm the new swine flu strain — which has been identified as H1N1." (Michel Chossudovsky, Political Lies and Media

Disinformation regarding the Swine Flu Pandemic, Global Research, May 2009, last quotation is from the New York Times, April 25, 2009)

Influenza is a common disease. Unless there is a thorough lab examination, the identity if the virus cannot be established.

There are numerous cases of seasonal influenza across America, on an annual basis. "According to the Canadian Medical Association Journal, the flu kills up to 2,500 Canadians and about 36,000 Americans annually. Worldwide, the number of deaths attributed to the flu each year is between 250,000 and 500,000" (Thomas Walkom, The Toronto Star, May 1, 2009).

What the CDCP and the WHO are doing is routinely us re-categorizing a large number of cases of common influenza as H1N1 swine flu.

"The increasing number of cases in many countries with sustained community transmission is making it extremely difficult, if not impossible, for countries to try and confirm them through laboratory testing. Moreover, the counting of individual cases is now no longer essential in such countries for monitoring either the level or nature of the risk posed by the pandemic virus or to guide implementation of the most appropriate response measures. (WHO, Briefing note, 2009)

The WHO admits that laboratory at a country level testing is often absent, while emphasising that lab confirmation it is not for data collection, with a view to ascertaining the spread of the disease:

A strategy that concentrates on the detection, laboratory confirmation and investigation of all cases, including those with mild illness, is extremely resource-intensive. In some countries, this strategy is absorbing most national laboratory and response capacity, leaving little capacity for the monitoring and investigation of severe cases and other exceptional events. ... For all of these reasons, WHO will no longer issue the global tables showing the numbers of confirmed cases for all countries. However, as part of continued efforts to document the global spread of the H1N1 pandemic, regular updates will be provided describing the situation in the newly affected countries. WHO will continue to request that these countries report the first confirmed cases and, as far as feasible, provide weekly aggregated case numbers and descriptive epidemiology of the early cases. (Ibid)

At a June 2009 WHO press conference, the issue of lab testing was raised:

Marion Falco, CNN Atlanta: My question may be a little basic but if you are not, and so forgive me for that, if you are not requiring testing in the countries that already have well established numbers of cases, then how are you distinguishing between seasonal flu and this particular flu. I mean how are you going to separate the numbers?

Dr Fukuda, WHO, Geneva: It is not that we are recommending not doing any testing at all. In fact when the guidance comes out, what it will suggest is what countries are to do is tailor down their testing so that they are not trying to test everybody but certainly keeping up testing of some people for exactly the kinds of reasons that you bring up. When people get sick with an influenza-like illness it will be important for us to know whether is it caused by the pandemic virus or whether is caused by seasonal viruses. What we are indicating is that if you ratchet down the level of testing we will still be able to figure that out and so we do not need to test everybody for that, but we will continue to recommend some level of testing – at a lower level of people who continue to get sick. See Transcript of WHO Virtual Press Conference, Dr Keiji Fukuda, Assistant Director-General for Health Security and Environment, WHO, Geneva, July 2009, emphasis added).

"Figure that out"? What the foregoing statements by the WHO suggest is that:

1) the WHO is not collecting data on the spread of H1N1 based on systematic lab confirmation.
2) the WHO in fact discourages national health officials to conduct detection and laboratory confirmation, while also pressuring the countries' public health authorities to duly deliver to the WHO on a weekly basis the data on H1N1 cases.
3) The WHO in its reporting only refers to "confirmed cases" It does not distinguish between confirmed and non-confirmed case. It would appear that the "non-confirmed" cases are categorized as confirmed cases and the numbers are then used by the WHO to prove that the disease is spreading. (See WHO tables: http://www.who.int/csr/don/2009_07_06/en/index.html)
The swine flu has the same symptoms as seasonal influenza: fever, cough and sore throat. What is happening is that the widespread incidence of the common flu is being used to generate the reports delivered to the WHO pertaining to the H1N1 swine flu.
Nonetheless, in the tabulated release of country level data, the WHO uses the term: "number of laboratory-confirmed cases", while also admitting that the cases are, in many cases, not confirmed.

Worldwide Pandemic
The WHO establishes trends on the spread of the disease, essentially using unconfirmed data. Based on these extrapolations, the WHO is now claiming, in the absence of laboratory confirmation, that "as many as 2 billion people could become infected over the next two years — nearly one-third of the world population." In turn, in the US, the Atlanta based Centers for Disease Control (CDC) suggests that "swine flu could strike up to 40 percent of Americans over the next two years and as many as several hundred thousand could die if a vaccine campaign and other measures aren't successful." (AP, July 24, 2009).

How did they come up with these numbers?
The CDC estimate has nothing to do with an assessment of the spread of the H1N1 virus. It is based on a mechanical pro-rata extrapolation of trends underlying the 1957 pandemic, which resulted in 70,000 deaths in the US. The presumption here is that the H1N1 flu has the "same transmission path" as the 1957 epidemic.

Creating a Crisis where there is No Crisis
The underlying political intent is to use the WHO level six pandemic to divert public attention from an impending and far-reaching social crisis, which is largely the consequence of a deep-seated global economic depression.
On the basis of ... expert assessments of the evidence, the scientific criteria for an influenza pandemic have been met. I have therefore decided to raise the level of influenza pandemic alert from Phase 5 to Phase 6. The world is now at the start of the 2009 influenza pandemic. ... Calling a pandemic is also a signal to the international community. This is a time where the world's countries, rich or poor, big or small, must come together in the name of global solidarity to make sure that no countries because of poor resources, no countries' people should be left behind without help. ...The World Health Organization has been in contact with donor communities, development partners, resource poor countries, and also drug companies as well as vaccine companies. Margaret Chan, Director-General, World Health Organization (WHO), Press Briefing, 11 June 2009

How best to tame the Nation's citizens, to rein in people's resentment in the face of mounting unemployment?
Create a Worldwide pandemic, instil an atmosphere of anxiety and intimidation, which demobilizes meaningful and organized public action against the programmed enrichment of a social minority. The flu pandemic is used to foreclose organized resistance against the government's economic policies in support of the financial elites. It provides both a pretext and a justification to adopt emergency procedures. Under the existing legislation in the US, Martial Law, implying the suspension of constitutional government, could be invoked in the case of "A Catastrophic Emergency" including a the H1N1 swine flu pandemic.

Martial Law
Legislation inherited from the Clinton administration, not to mention the post 9/11 Patriot Acts I and II, allow the military to intervene in judicial and civilian law enforcement activities. In 1996, legislation was passed which allowed the military to intervene in the case of a national emergency. In 1999, Clinton's Defense Authorization Act (DAA) extended those powers (under the 1996 legislation) by creating an "exception" to the Posse Comitatus Act, which permits the military to be involved in civilian affairs "regardless of whether there is an emergency". (See ACLU at http://www.aclu.org/NationalSecurity/NationalSecurity.cfm?ID=8683&c=24)
The issue of a pandemic or public health emergency , however, was not explicitly outlined in the Clinton era legislation.
The Katrina disaster (2005) constitutes a dividing line, a watershed leading de facto to the militarization of emergency relief:
"The disaster that struck New Orleans and the southern Gulf Coast has given rise to the largest military mobilization in modern history on US soil. Nearly 65,000 US military personnel are now deployed in disaster area, transforming the devastated port city into a war zone," (Bill Van Auken, Wsws.org, September 2005).
Hurricanes Katrina (August 2005) and Rita (September 2005) contributed to justifying the role of the Military in natural disasters. They also contributed to shaping the formulation of presidential directives and subsequent legislation. President Bush called for the Military to become the "lead agency" in disaster relief:
".....The other question, of course, I asked, was, is there a circumstance in which the Department of Defense becomes the lead agency. Clearly, in the case of a terrorist attack, that would be the case, but is there a natural disaster which -- of a certain size that would then enable the Defense Department to become the lead agency in coordinating and leading the response effort. That's going to be a very important consideration for Congress to think about. (Press Conference, 25 Sept 2005 http://www.globalresearch.ca/index.php?context=viewArticle&code=BUS20050925&articleId=1004)

Militarization of Public Health: The Avian Flu
The 2005 bird flu crisis followed barely a month after Hurricane Rita. It was presented to the US public as an issue of National Security. Following the 2005 outbreak of avian flu, president Bush confirmed that the military would be actively involved in the case of a pandemic, with the authority to detain large numbers of people:
"I am concerned about avian flu. I'm concerned about what an avian flu outbreak could mean for the United States and the world. ... I have thought through the scenarios of what an avian flu outbreak could mean....

The policy decisions for a president in dealing with an avian flu outbreak are difficult. ...
If we had an outbreak somewhere in the United States, do we not then quarantine that part of the country? And how do you, then, enforce a quarantine?
... One option is the use of a military that's able to plan and move. So that's why I put it on the table. I think it's an important debate for Congress to have.
... But Congress needs to take a look at circumstances that may need to vest the capacity of the president to move beyond that debate. And one such catastrophe or one such challenge could be an avian flu outbreak. (White House Press Conference, 4 October, 2005, emphasis added)
On the day following Bush`s October 4, 2005 Press Conference, a major piece of legislation was introduced in the US Senate. The Pandemic Preparedness and Response Act.
While the proposed legislation was never adopted, it nonetheless contributed to building a consensus among key members of the US Senate. The militarization of public health was subsequently embodied in the John Warner Defense Authorization Act of 2007.

"Public Health Emergency" and Martial Law: The John Warner Defense

Authorization Act of 2007. H.R. 5122
New legislation is devised. The terms "epidemic", and "public health emergency" are explicitly included in a key piece of legislation, signed into law by President Bush in October 2006.
Lost in the midst of hundreds of pages, Public Law 109-364, better known as the "John Warner Defense Authorization Act of 2007" (H.R.5122) includes a specific section on the role of the Military in national emergencies.
Section 1076 of this legislation entitled "Use of the Armed Forces in Major Public Emergencies" allows the President of the United States the deploy the armed forces and the National Guard across the US, to "restore public order and enforce the laws of the United States" in the case of "a natural disaster, epidemic, or other serious public health emergency":

SEC. 1076. USE OF THE ARMED FORCES IN MAJOR PUBLIC EMERGENCIES.
(a) Use of the Armed Forces Authorized-
(1) IN GENERAL- Section 333 of title 10, United States Code, is amended to read as follows:
`Sec. 333. Major public emergencies; interference with State and Federal law
`(a) Use of Armed Forces in Major Public Emergencies- (1) The President may employ the armed forces, including the National Guard in Federal service, to--
`(A) restore public order and enforce the laws of the United States when, as a result of a natural disaster, epidemic, or other serious public health emergency, terrorist attack or incident, or other condition in any State or possession of the United States, the President determines that--
`(i) domestic violence has occurred to such an extent that the constituted authorities of the State or possession are incapable of maintaining public order; and
`(ii) such violence results in a condition described in paragraph (2); or
`(B) suppress, in a State, any insurrection, domestic violence, unlawful combination, or conspiracy if such insurrection, violation, combination, or conspiracy results in a condition described in paragraph (2).

`(2) A condition described in this paragraph is a condition that--
`(A) so hinders the execution of the laws of a State or possession, as applicable, and of the United States within that State or possession, that any part or class of its people is deprived of a right, privilege, immunity, or protection named in the Constitution and secured by law, and the constituted authorities of that State or possession are unable, fail, or refuse to protect that right, privilege, or immunity, or to give that protection; or
`(B) opposes or obstructs the execution of the laws of the United States or impedes the course of justice under those laws.
`(3) In any situation covered by paragraph (1)(B), the State shall be considered to have denied the equal protection of the laws secured by the Constitution.
`(b) Notice to Congress- The President shall notify Congress of the determination to exercise the authority in subsection (a)(1)(A) as soon as practicable after the determination and every 14 days thereafter during the duration of the exercise of that authority.' (See ext of HR5122 http://thomas.loc.gov/cgi-bin/query/F?c109:6:./temp/~c109bW9vKy:e939907:
http://www.govtrack.us/congress/bill.xpd?bill=h109-5122&tab=summary
These far-reaching provisions allow the Armed Forces to override the authority of civilian federal, state and local governments involved in disaster relief and public health. It also grants the Military a mandate in civilian police functions. Namely the legislation implies the militarization of law enforcement in the case of a national emergency.
"Catastrophic Emergency" and "Continuity of Government,": The National Security and Homeland Security Presidential Directive NSPD 51/HSPD 20

Coinciding with the passage of the John Warner Defense Authorization Act, a National Security Presidential Directive was issued in May 2007, (National Security and Homeland Security Presidential Directive NSPD 51/HSPD 20) .

NSPD 51 /HSPD 20 is a combined National Security Directive emanating from the White House and Homeland Security. While it is formulated in relation to the domestic "war on terrorism", it also includes provisions which allow for Martial Law in case of a natural disaster including a flu pandemic.
The thrust and emphasis of NSPD 51, however, is different from that of Section 1076 of HR 5122. It defines the functions of the Department of Homeland Security in the case of a national emergency and its relationship to the White House and the Military. It also provides the President with sweeping powers to declare a national emergency, without Congressional approval.
The directive establishes procedures for "Continuity of Government" (COG) in the case of a "Catastrophic Emergency". The latter is defined in NSPD 51/HSPD 20 (henceforth referred to as NSPD 51), as "any incident, regardless of location, that results in extraordinary levels of mass casualties, damage, or disruption severely affecting the U.S. population, infrastructure, environment, economy, or government functions."
"Continuity of Government," or "COG," is defined in NSPD 51 as "a coordinated effort within the Federal Government's executive branch to ensure that National Essential Functions continue to be performed during a Catastrophic Emergency."
The President shall lead the activities of the Federal Government for ensuring constitutional government. In order to advise and assist the President in that function, the Assistant to the President for Homeland Security and Counter terrorism

(APHS/CT) is hereby designated as the National Continuity Coordinator. The National Continuity Coordinator, in coordination with the Assistant to the President for National Security Affairs (APNSA), without exercising directive authority, shall coordinate the development and implementation of continuity policy for executive departments and agencies. The Continuity Policy Coordination Committee (CPCC), chaired by a Senior Director from the Homeland Security Council staff, designated by the National Continuity Coordinator, shall be the main day-to-day forum for such policy coordination. (National Security and Homeland Security Presidential Directive NSPD 51/HSPD 20, emphasis added)

This Combined Directive NSPD /51 HSPD 20 grants unprecedented powers to the Presidency and the Department of Homeland Security, overriding the foundations of Constitutional government. NSPD 51 allows the sitting president to declare a national emergency without Congressional approval The adoption of NSPD 51 would lead to the de facto closing down of the Legislature and the militarization of justice and law enforcement.

NSPD 51 grants extraordinary Police State powers to the White House and Homeland Security (DHS), in the event of a "Catastrophic Emergency".

A flu pandemic or public health emergency is part of the terms of reference of NSPD 51. "Catastrophic Emergency" is broadly defined in NSPD 51 as "any incident, regardless of location, that results in extraordinary levels of mass casualties, damage, or disruption severely affecting the U.S. population, infrastructure, environment, economy, or government functions"

"The President shall lead the activities of the Federal Government for ensuring constitutional government. In order to advise and assist the President in that function, the Assistant to the President for Homeland Security and Counter terrorism (APHS/CT) is hereby designated as the National Continuity Coordinator. The National Continuity Coordinator, in coordination with the Assistant to the President for National Security Affairs (APNSA), without exercising directive authority, shall coordinate the development and implementation of continuity policy for executive departments and agencies. The Continuity Policy Coordination Committee (CPCC), chaired by a Senior Director from the Homeland Security Council staff, designated by the National Continuity Coordinator, shall be the main day-to-day forum for such policy coordination. (National Security and Homeland Security Presidential Directive NSPD 51/HSPD 20, emphasis added)

The directive acknowledges the overriding power of the military in the case of a national emergency: The presidential directive "Shall not be construed to impair or otherwise affect... the authority of the Secretary of Defense over the Department of Defense, including the chain of command for military forces from the President, to the Secretary of Defense, to the commander of military forces, or military command and control procedures".

Since their enactment two years ago, neither the John Warner Defense Authorization Act nor NSPD 51 have been the object of media debate or discussion.

NSPD 51 and/or the John Warner H.R.5122 could be invoked at short notice following the declaration of a national health emergency and a nationwide forced vaccination program. The hidden agenda consists in using the threat of a pandemic and/or the plight of a natural disaster as a pretext to establish military rule, under the facade of a "functioning democracy".

Vaccination: From H5N1 to H1N1

A nationwide flu vaccination program has been in the pipeline in the US since 2005.

According to the Wall Street Journal (Oct 1, 2005), the Bush administration had asked Congress for an estimated $6-10 billion "to stockpile vaccines and antiviral medications as part of its plans to prepare the U.S. for a possible flu pandemic." A large part of this budget, namely 3.1 billion was used under the Bush administration to stockpile the antiviral drug oseltamivir (Tamiflu), of which the intellectual property rights belong to Gilead Science Inc, a company headed by Don Rumsfeld prior to becoming Secretary of Defense under the Bush administration.

Consistent with its role as "lead agency", more than half of the money earmarked by the Bush administration for the program was handed over to the Pentagon. In other words, what we are dealing with is a process of militarization of the civilian public health budget. . Part of the money for a public health is controlled by the Department of Defense, under the rules of DoD procurement.

"The US Senate voted [September 3, 2005] yesterday to provide $4 billion for antiviral drugs and other measures to prepare for a feared influenza pandemic, but whether the measure would clear Congress was uncertain.

The Senate attached the measure to a $440 billion defense-spending bill for 2006, according to the Associated Press (AP). But the House included no flu money in its version of the defense bill, and a key senator said he would try to keep the funds out of the House-Senate compromise version. The Senate is expected to vote on the overall bill next week.

Almost $3.1 billion of the money would be used to stockpile the antiviral drug oseltamivir (Tamiflu), and the rest would go for global flu surveillance, development of vaccines, and state and local preparedness, according to a Reuters report. The government currently has enough oseltamivir to treat a few million people, with a goal of acquiring enough to treat 20 million"

(CIDRAP, http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/sep3005avian.html)

The threat of the H5N1 bird flu pandemic in 2005 resulted in multibillion dollar earnings for the pharmaceutical and biotech industry. In this regard, a number of major pharmaceutical companies including GlaxoSmithKline, Sanofi-Aventis, California based Chiron Corp, BioCryst Pharmaceuticals Inc, Novavax and Wave Biotech, Swiss pharmaceutical giant Roche Holding, had already positioned themselves.

In 2005,.a Maryland-based biotechnology company MedImmune which produces "an inhaled flu vaccine" had positioned itself to develop a vaccine against the H5N1 avian flu. Although it had no expertise in the avian flu virus, one of the major actors in the vaccine business, on contract to the Pentagon, was Bioport, a company part owned by the Carlyle Group, closely linked to the Bush Cabinet with Bush Senior on its board of directors.

Vaccination under a Public Health Emergency. Multibillion Financial Bonanza for the BioTech Conglomerates

The 2005 bird flu hoax was in many regards a dress rehearsal. The 2009 H1N1 pandemic is a much larger multibillion dollar operation. A select number of biotech and pharmaceutical companies have been involved in negotiations behind closed doors with the WHO and the US Administration. Key agencies are the Atlanta based Center for Disease Control and the Food and Drug Administration (FDA) which have close ties to the pharmaceutical industry. The conflicts of interest of these agencies is brought to light in Robert F. Kennedy Jr.'s detailed study entitled Vaccinations: Deadly Immunity, June 2005:

"The story of how government health agencies colluded with Big Pharma to hide the risks of thimerosal from the public is a chilling case study of institutional arrogance, power and greed. I was drawn into the controversy only reluctantly. As an attorney and environmentalist who has spent years working on issues of mercury toxicity, I frequently met mothers of autistic children who were absolutely convinced that their kids had been injured by vaccines. ... "The elementary grades are overwhelmed with children who have symptoms of neurological or immune-system damage," Patti White, a school nurse, told the House Government Reform Committee in 1999. "Vaccines are supposed to be making us healthier; however, in twenty-five years of nursing I have never seen so many damaged, sick kids. Something very, very wrong is happening to our children." Robert F. Kennedy Jr, Vaccinations: Deadly Immunity, June 2005.

The WHO is planning for the production of 4.9 billion dose, enough to inoculate a large share of the World's population. Big Pharma including Baxter, GlaxoSmithKline, Novartis, Sanofi-Aventis and AstraZeneca have signed procurement contracts with some 50 governments. (Reuters, July 16, 2009). For these companies, compulsory vaccination is a highly lucrative undertaking:

"The WHO has refused to release the Minutes of a key meeting of an advisory vaccine group "packed with executives from Baxter, Novartis and Sanofi" that recommended compulsory vaccinations in the USA, Europe and other countries against the artificial H1N1 "swine flu" virus this autumn.

In an email this morning, a WHO spokesperson claimed there are no Minutes of the meeting that took place on July 7th in which guidelines on the need for worldwide vaccinations that WH0 adopted this Monday were formulated and in which Baxter and other Pharma executives participated.

Under the International Health Regulations, WHO guidelines have a binding character on all of WHO's 194 signatory countries in the event of a pandemic emergency of the kind anticipated this autumn when the second more lethal wave of the H1N1 virus "which is bioengineered to resemble the Spanish flu virus" emerges.

In short: WHO has the authority to force everyone in those 194 countries to take a vaccine this fall at gunpoint, impose quarantines and restrict travel." (Jane Burgermeister, WHO moves forward in secrecy to accomplish forced vaccination and population agenda, Global Research, July 2009).

On May 19th, the WHO Director General and senior officials met behind closed doors with the representatives of some 30 pharmaceutical companies.

"In a perfect world the planet's leading pharmaceutical companies could produce 4.9 billion H1N1 swine flu vaccinations over the course of the next year. This is the World Health Organization's latest assessment. WHO Director-General Dr. Margaret Chan met with 30 pharmaceutical companies on Tuesday and briefed reporters on a WHO plan to secure vaccinations for poor countries who lack sufficient infrastructure to fight a possible pandemic. (Digital Journal, 19 May 2009)

According to recent report in Business Week, "Wealthier countries such as the U.S. and Britain will pay just under $10 per dose, the same price for the seasonal flu vaccine. Developing countries will pay a lower price, (Business Week, July 2009). The WHO suggests that the 4.9 billion doses will not suffice and that a second inoculation will be required.

4,9 billion doses at about ten dollars ($10.00) a shot and somewhat less in the developing countries, represents a windfall profit bonanza for Big Pharma of the order of 400 billion dollars in a single year. And the WHO claims that one dose per person may not suffice...

Dangerous Life Threatening Vaccine: Who owns the Patent?

While the production has been entrusted to a select number of companies, it would appear that the intellectual property rights belong to Illinois based pharmaceutical giant Baxter. Baxter is central in the negotiations between the US Administration and the World Health Organization (WHO). Moreover, "a full year before any reported case of the current alleged H1N1" Baxter had filed for a patent for the H1N1 vaccine: Baxter Vaccine Patent Application US 2009/0060950 A1. (See William Engdahl, Now legal immunity for swine flu vaccine makers, Global Research, July 2009). Their application: states:

"the composition or vaccine comprises more than one antigen... such as influenza A and influenza B in particular selected from of one or more of the human H1N1, H2N2, H3N2, H5N1, H7N7, H1N2, H9N2, H7N2, H7N3, H10N7 subtypes, of the pig flu H1N1, H1N2, H3N1 and H3N2 subtypes, of the dog or horse flu H7N7, H3N8 subtypes or of the avian H5N1, H7N2, H1N7, H7N3, H13N6, H5N9, H11N6, H3N8, H9N2, H5N2, H4N8, H10N7, H2N2, H8N4, H14N5, H6N5, H12N5 subtypes."

The application further states, "Suitable adjuvants can be selected from mineral gels, aluminium hydroxide, surface active substances, lysolecithin, pluronic polyols, polyanions or oil emulsions such as water in oil or oil in water, or a combination thereof. Of course the selection of the adjuvant depends on the intended use. E.g. toxicity may depend on the destined subject organism and can vary from no toxicity to high toxicity."

With no legal liability, could it be that Baxter is preparing to sell hundreds of millions of doses containing highly toxic aluminium hydroxide as adjuvant? (Ibid)

The Los Angeles Times has reassured the US public with an article entitled: What are the odds that H1N1 will kill you? One might also ask, what are the odds that the H1N1 vaccine will kill you?

National Emergency Centers Establishment Act: H.R. 645

There are no indications that the Obama Adminstration is planning in the forseeable future a Public Health Emergency which would require the imposition of martial law. What we have emphasised in this article is the existence of various provisions (legislation and presidential directives) which would allow the President of the United States to instigate Martial Law in the case of a Public Health Emergency. If Martial Law were to be adopted in the context of a Public Health Emergency, what we would be dealing with is the "forced vaccination" of targeted population groups as well as the possible establishment of facilities for the internment of people who have been quarantined.

In this regard, it is worth noting that in January 2009, a piece of legislation entitled the National Emergency Centers Establishment Act (HR 645) was introduced in the US Congress.The bill calls for the establishment of six national emergency centers in major regions in the US to be located on existing military installations, which could be used to quarantine people in the case of a public health emergency or forced vaccination program.

The bill goes far beyond previous legislation (including H.R 5122). The stated purpose of the "national emergency centers" is to provide "temporary housing, medical, and humanitarian assistance to individuals and families dislocated due to an emergency or major disaster." In actuality, what we are dealing with are FEMA internment camps. HR 645 states that the camps can be used to "meet other appropriate needs, as determined by the Secretary of Homeland Security." (Michel

Chossudovsky, Preparing for Civil Unrest in America Legislation to Establish Internment Camps on US Military Bases, Global Research, March 2009)

There has been virtually no press coverage of HR 645, which is currently being discussed by several congressional committees. There are no indications that the bill is on its way to being adopted.

These "civilian facilities" on US military bases are to be established in cooperation with the US Military.

Once a person is arrested and interned in a FEMA camp located on a military base, that person would in all likelihood, under a public health emergency, fall under the de facto jurisdiction of the Military: civilian justice and law enforcement including habeas corpus would no longer apply.

HR 645 could be used, were it to be adopted, in the case of public health emergency. It obviously bears a direct relationship to the economic crisis and the likelihood of mass protests across America. It constitutes a further move to militarize civilian law enforcement, repealing the Posse Comitatus Act.

In the words of Rep. Ron Paul:

"...the fusion centers, militarized police, surveillance cameras and a domestic military command is not enough... Even though we know that detention facilities are already in place, they now want to legalize the construction of FEMA camps on military installations using the ever popular excuse that the facilities are for the purposes of a national emergency. With the phony debt-based economy getting worse and worse by the day, the possibility of civil unrest is becoming a greater threat to the establishment. One need only look at Iceland, Greece and other nations for what might happen in the United States next." (Daily Paul, September 2008, emphasis added)

The proposed internment camps should be seen in relation to the broader process of militarization of civilian institutions. The construction of internment camps predates the introduction of HR 645 (Establishment of Emergency Centers) in January 2009.

"Military Civil Support": The Role of US Northern Command in the Case of a Flu Pandemic

US Northern Command has a mandate to support and oversee civilian institutions in the case of a National Emergency.

"In addition to defending the nation, U.S. Northern Command provides defense support of civil authorities in accordance with U.S. laws and as directed by the President or Secretary of Defense. Military assistance is always in support of a lead federal agency, such as the Federal Emergency Management Agency (FEMA).

Military civil support includes domestic disaster relief operations that occur during fires, hurricanes, floods, and earthquakes. Support also includes counter-drug operations and consequence management assistance, such as would occur after a terrorist event employing a weapon of mass destruction.

Generally, an emergency must exceed the management capabilities of local, state and federal agencies before U.S. Northern Command becomes involved. In providing civil support, the command operates through subordinate Joint Task Forces.

(See US Northcom website at http://www.northcom.mil/index.cfm?fuseaction=s.who_civil).

The Katrina and Rita hurricane disasters played a key role in shaping the role of US Northern Command in "military civil support" activities. The emergency procedures were closely coordinated by US Northern Command out of the Peterson Air Force Base, together with Homeland Security, which oversees FEMA.

During Hurricane Rita (September 2005), US Northern Command Headquarters was directly in control of the movement of military personnel and hardware in the Gulf of Mexico, in some cases overriding, as in the case of Katrina, the actions of civilian bodies. The entire operation was under the jurisdiction of the military rather than FEMA. (Michel Chossudovsky, US Northern Command and Hurricane Rita, Global Research, September 24, 2005)

Northern Command would, as part of its mandate in the case of a national emergency, oversee a number of civilian functions. In the words of Preident Bush at the height of the Rita hurricane, "the Government and the US military needed broader authority to help handle major domestic crises such as hurricanes." Homeland Security Secretary Michael Chertoff subsequently classified Hurricane Rita as an "incident of national significance," which justified the activation of a so-called "National Response Plan"(NRP). (For further details, consult the complete document at http://www.dhs.gov/interweb/assetlibrary/NRPbaseplan.pdf

Within the broader framework of "Disaster Relief", Northern Command has, in the course of the last two years, defined a mandate in the eventuality of a public health emergency or a flu pandemic. The emphasis is on the militarization of public health whereby NORTHCOM would oversee the activities of civilian institutions involved in health related services.

According Brig. Gen. Robert Felderman, deputy director of USNORTHCOM's Plans, Policy and Strategy Directorate: "USNORTHCOM is the global synchronizer – the global coordinator – for pandemic influenza across the combatant commands"(emphasis added) (See Gail Braymen, USNORTHCOM contributes pandemic flu contingency planning expertise to trilateral workshop, USNORTHCOM, April 14, 2008, See also USNORTHCOM. Pandemic Influenza Chain Training (U) pdf)

"Also, the United States in 1918 had the Spanish influenza. We were the ones who had the largest response to [a pandemic] in more recent history. So I discussed what we did then, what we expect to have happen now and the numbers that we would expect in a pandemic influenza."

The potential number of fatalities in the United States in a modern pandemic influenza could reach nearly two million, according to Felderman. Not only would the nation's economy suffer, but the Department of Defense would still have to be ready and able to protect and defend the country and provide support of civil authorities in disaster situations. While virtually every aspect of society would be affected, "the implications for Northern Command will be very significant."

"[A pandemic would have] a huge economic impact, in addition to the defense-of-our-nation impact," Felderman said. The United States isn't alone in preparing for such a potential catastrophe. (Gail Braymen, op cit)

Also of relevance, was the repatriation of combat units from the war theater to assist US Northern Command in the case of a national emergency including a flu pandemic. In the last months of the Bush administration, the Department of Defense ordered the recall of the 3rd Infantry's 1st Brigade Combat Team from Iraq.

The BCT combat unit was attached to US Army North, the Army's component of US Northern Command (USNORTHCOM). The 1st BCT and other combat units would be called upon to perform specific military functions in the case of a national emergency or natural disaster including a public health emergency:

"The Army Times reports that the 3rd Infantry's 1st Brigade Combat Team is returning from Iraq to defend the Homeland, as "an on-call federal response force for natural or manmade emergencies and disasters, including terrorist attacks." The BCT

unit has been attached to US Army North, the Army's component of US Northern Command (USNORTHCOM). (See Gina Cavallaro, Brigade homeland tours start Oct. 1, Army Times, September 8, 2008, emphasis added).

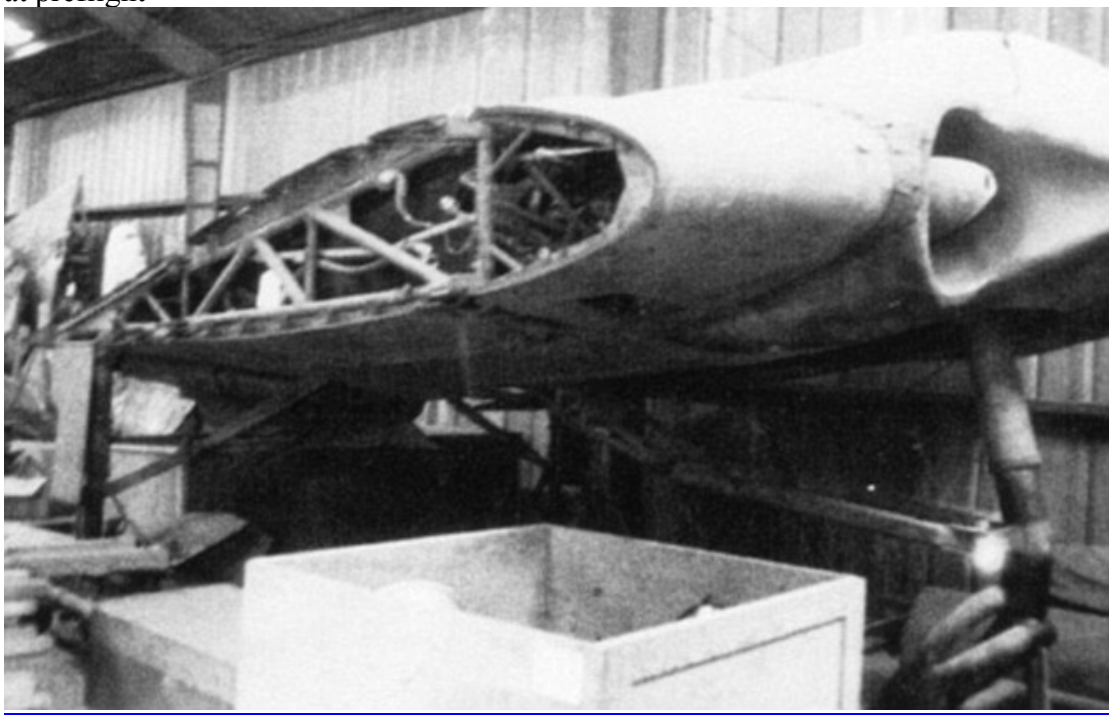
HITLER'S STEALTH BOMBER: HOW THE NAZIS WERE FIRST TO DESIGN A PLANE TO BEAT RADAR

With its smooth and elegant lines, this could be a prototype for some future successor to the stealth bomber. But this flying wing was actually designed by the Nazis 30 years before the Americans successfully developed radar-invisible technology. Now an engineering team has reconstructed the Horten Ho 2-29 from blueprints, with startling results.

Blast from the past: The full-scale replica of the Ho 2-29 bomber was made with materials available in the 40s

Futuristic: The stealth plane design was years ahead of its time. It was faster and more efficient than any other plane of the period and its stealth powers did work against radar. Experts are now convinced that given a little bit more time, the mass deployment of this aircraft could have changed the course of the war. First built and tested in the air in March 1944, it was designed with a greater range and speed than any plane previously built and was the first aircraft to use the stealth technology now deployed by the U.S. in its B-2 bombers. Thankfully Hitler's engineers only made three prototypes, tested by being dragged behind a glider, and were not able to build them on an industrial scale before the Allied forces invaded. From Panzer tanks through to the V-2 rocket, it has long been recognised that Germany's technilowcal expertise during the war was years ahead of the Allies. But by 1943, Nazi high command feared that the war was beginning to turn against them, and were desperate to develop new weapons to help turn the tide. Nazi bombers were suffering badly when faced with the speed and manoeuvrability of the Spitfire and other Allied fighters. Hitler was also desperate to develop a bomber with the range and capacity to reach the United States. In 1943 Luftwaffe chief Hermann Goering demanded that designers come up with a bomber that would meet his '1,000, 1,000, 1,000' requirements – one that could carry 1,000kg over 1,000km flying at 1,000km/h.

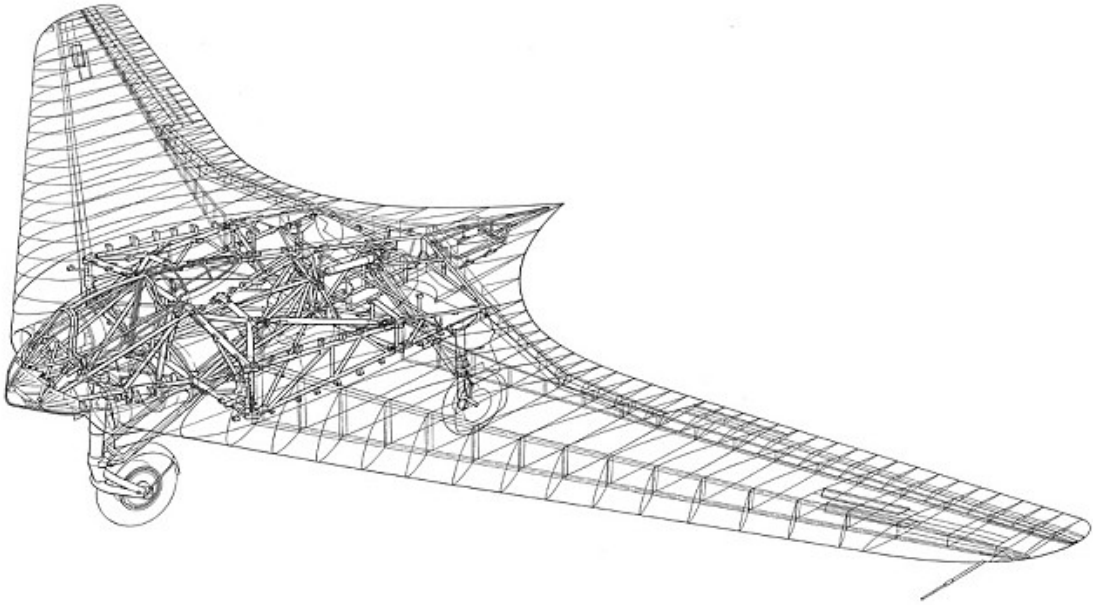
A full scale replica of the Ho 229 bomber made with materials available in the 1940s at prefilght



A wing section of the stealth bomber. The jet intakes were years ahead of their time. Two pilot brothers in their thirties, Reimar and Walter Horten, suggested a 'flying wing' design they had been working on for years. They were convinced that with its drag and lack of wind resistance such a plane would meet Goering's requirements. Construction on a prototype was begun in Goettingen in Germany in 1944. The centre

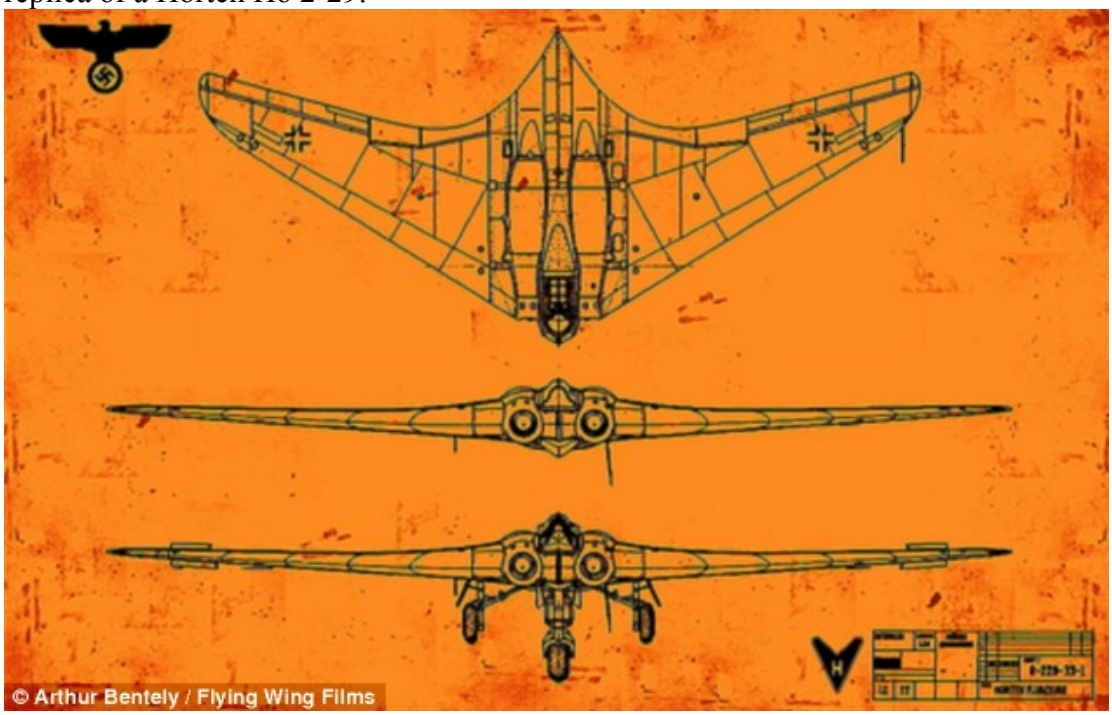
pod was made from a welded steel tube, and was designed to be powered by a BMW 003 engine. The most important innovation was Reimar Horten's idea to coat it in a mix of charcoal dust and wood glue.

Vengeful: Inventors Reimar and Walter Horten were inspired to build the Ho 2-29 by the deaths of thousands of Luftwaffe pilots in the Battle of Britain

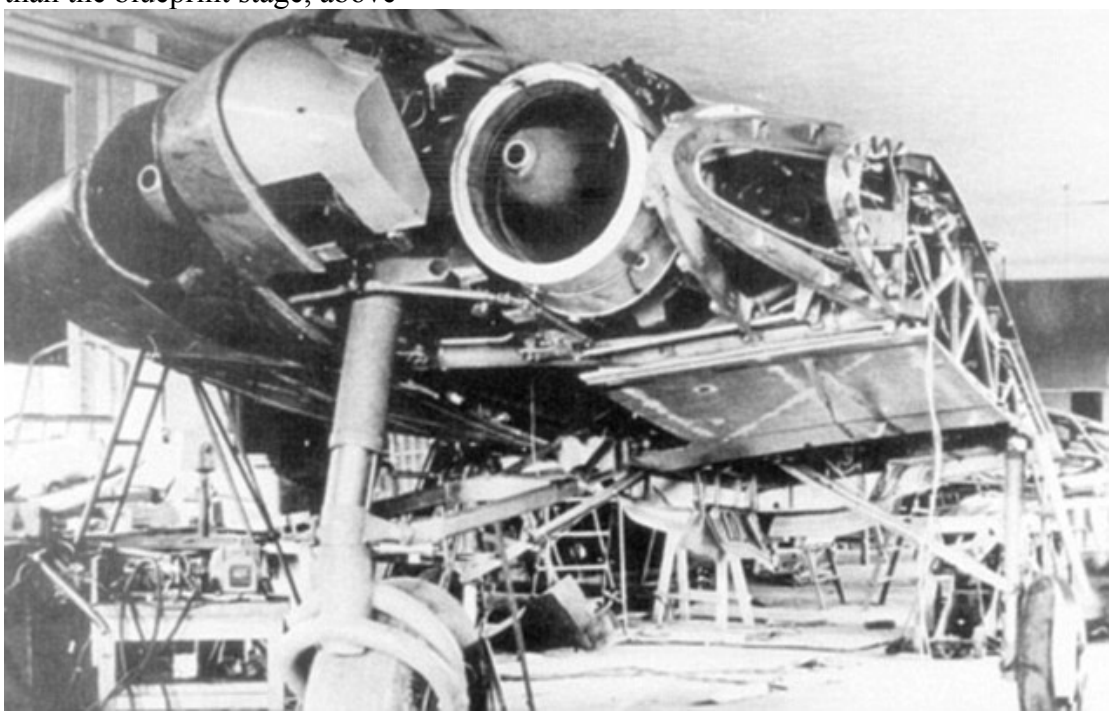


The 142-foot wingspan bomber was submitted for approval in 1944, and it would have been able to fly from Berlin to NYC and back without refueling, thanks to the same blended wing design and six BMW 003A or eight Junker Jumo 004B turbojets. He thought the electromagnetic waves of radar would be absorbed, and in conjunction with the aircraft's sculpted surfaces the craft would be rendered almost invisible to

radar detectors. This was the same method eventually used by the U.S. in its first stealth aircraft in the early 1980s, the F-117A Nighthawk. The plane was covered in radar absorbent paint with a high graphite content, which has a similar chemical make-up to charcoal. After the war the Americans captured the prototype Ho 2-29s along with the blueprints and used some of their technological advances to aid their own designs. But experts always doubted claims that the Horten could actually function as a stealth aircraft. Now using the blueprints and the only remaining prototype craft, Northrop-Grumman (the defence firm behind the B-2) built a fullsize replica of a Horten Ho 2-29.



Luckily for Britain the Horten flying wing fighter-bomber never got much further than the blueprint stage, above



Thanks to the use of wood and carbon, jet engines integrated into the fuselage, and its blended surfaces, the plane could have been in London eight minutes after the radar system detected it. It took them 2,500 man-hours and $250,000 to construct, and although their replica cannot fly, it was radar-tested by placing it on a 50ft articulating pole and exposing it to electromagnetic waves. The team demonstrated that although the aircraft is not completely invisible to the type of radar used in the war, it would have been stealthy enough and fast enough to ensure that it could reach London before Spitfires could be scrambled to intercept it. 'If the Germans had had time to develop these aircraft, they could well have had an impact,' says Peter Murton, aviation expert from the Imperial War Museum at Duxford, in Cambridgeshire. 'In theory the flying wing was a very efficient aircraft design which minimised drag. 'It is one of the reasons that it could reach very high speeds in dive and glide and had such an incredibly long range.' The research was filmed for a forthcoming documentary on the National Geographic Channel.

EXPERT WARNS OF MIND-ALTERING BIOLOGICAL DRUGS IN WARFARE

A chemical and biological weapons expert on Wednesday called for military groups to cease use of mind-altering drugs in battle.Writing in the journal Nature, Malcolm Dando, Professor of International Security at Britain's Bradford University, said: "In the past 20 years, modern warfare has changed from predominantly large-scale clashes of armies to messy civil strife." He pointed to the misuse of chemicals and gene therapies being developed for medical purposes in modern warfare. These methods "are particularly suited to this style of warfare; it is not hard to find people in the military world who think they would be useful," said Dando, a regular participant in U.N.-sponsored arms conferences. According to Reuters, Dando is seeking to redraft the 1993 global Chemical Weapons Convention (CWC), which took effect in 1997. Overall, 188 countries have signed on to the CWC, which bans the use of all chemical weapons apart from those intended for riot control by law enforcement. "The CWC urgently needs modifying if it is to continue to help ensure that the modern life sciences are not used for hostile purposes," Dando wrote in the journal. "'Law enforcement' could be taken by some to cover more than domestic riot control, which in certain circumstances would make it legal for the military to use agents such as fentanyl." Fentanyl is an anesthetic used for sedation in reducing pain from medical complications such as cancer. It was used by Russian Special Forces in 2002 to subdue Chechen militants who had seized a Moscow theater, according to Reuters. The Russians' use of the powerful painkiller accounted for 120 hostage deaths. Dando also said that drugs like oxytocin "opens up the possibility of a drug that could be used to manipulate people's emotions in a military context."

A PRIMER IN PETN

Βλέπε «βομβιστής των Χριστουγέννων 2009»

PETN, the explosive that nearly doomed Northwest Airlines Flight 253 in Detroit on Christmas Day, is a white powder that can deliver powerful blasts in quantities as small as tenths or hundredths of a pound. But generally, it can't be lit with a match or otherwise set off without using a detonator or mixing it with a chemical to cause an explosion. WSJ's Ron Winslow tells the News Hub's Simon Constable more about pentaerythritol tetranitrate, or PETN, the chemical that was allegedly used to try and blow up an an airplane on Christmas Day. "It's a high explosive; it's one of the more sensitive things to handle," said Jimmie Carol Oxley, co-director of the Center of Excellence In Explosives Detection, Mitigation, Response and Characterization at the University of Rhode Island, Kingston. "But it doesn't initiate with a flame." Her view, consistent with initial reports from investigators of the incident, is that Umar Farouk Abdulmutallab, the Nigerian accused of trying to blow up the plane, "was looking for a chemical reaction that would be hot enough to initiate" the PETN and cause it to explode. "It's not impossible, but it's not easy either and it obviously didn't work for him," Prof. Oxley said. Mr. Abdulmutallab allegedly was carrying a syringe with liquid believed to be an agent he was mixing with PETN to cause it to explode. Unlike a detonator such as a blasting cap, a syringe and PETN are very difficult to detect with X-ray equipment commonly used at airport security checkpoints. Residue from the powder, though, is easily detectable with swabs that security personnel often use to wipe off briefcases, luggage and other personal items taken through checkpoints. Prof. Oxley has done research indicating PETN residue can be detected in human hair. "We've been very successful looking at people's hair as evidence that they're handling explosives," she said. "That's not a common screening tool used in the airport." PETN, or pentaerythritol tetranitrate, is made by numerous manufacturers, many of them small, in the U.S. and abroad. The powder is suspected in other terrorist attacks, including the failed attempt in 2001 by Richard Reid to blow up a jetliner over the Atlantic Ocean with explosives hidden in his shoes. PETN is also a common legal explosive, used by the military as well as industries such as mining, where it is mostly used in detonator cord or in devices to ignite another compound. In addition to powder, the material is manufactured in thin plasticized sheets. Regulations in the U.S. and many other countries make it difficult to buy PETN and other explosives off the shelf. In the U.S., the ability to purchase PETN and other explosives is regulated by the federal Bureau of Alcohol, Tobacco and Firearms, as well as some state agencies,

which issue permits or licenses for their purchase. But, Prof. Oxley noted, chemicals used to make PETN are more readily available. While rules vary from country to country, in the U.S. "we could acquire the chemicals to make it ourselves," she said.

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-

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INTENSE, PROLONGED EXPOSURE TO WORLD TRADE CENTER ATTACK ASSOCIATED WITH NEW HEALTH PROBLEMS SEVERAL YEARS LATER

Άλλη μια απόδειξη ότι οι επιχειρήσεις κρατούν λίγες ώρες ενώ οι συνέπειες της τρομοκρατίας μια ζωή…

Large number of individuals, such as recovery and rescue workers, nearby residents and office workers, who experienced intense or prolonged exposure to the World

Trade Center attack, has reported new diagnoses of asthma or posttraumatic stress 5-6 years after the attack, according to a study in the August 5, 2009 issue of JAMA, a theme issue on violence and human rights. "The September 11, 2001, terrorist attack on the World Trade Center (WTC) killed thousands and exposed hundreds of thousands to horrific events and potentially harmful environmental conditions resulting from the collapsing towers and fires," according to background information in the article. Studies have documented adverse respiratory and mental health conditions associated with direct exposure within 1 to 3 years following the event; however, the longer-term impact on health has been unclear. Robert M. Brackbill, Ph.D., M.P.H., of the Centers for Disease Control and Prevention, Atlanta, and

colleagues of the New York City Department of Health and Mental Hygiene, and Columbia University, New York, examined the incidence of two of the most commonly reported health outcomes: asthma and posttraumatic stress (PTS) symptoms indicative of probable posttraumatic stress disorder (PTSD) among adults 5 to 6 years after the attack. The researchers used data from the World Trade Center Health Registry, the largest postdisaster exposure registry in U.S. history, which prospectively follows a group that reported a range of WTC disaster - associated exposures on September 11 and during its immediate aftermath. Wave 1 of the study, conducted in 2003-2004, included enrollment of 71,437 adults in four groups: rescue/recovery workers, lower Manhattan residents, lower Manhattan office workers, and passersby; 46,322 adults (68 percent) completed a follow-up wave 2 survey in 2006-2007. The surveys included questions regarding symptoms of asthma following September 11 and event-related PTS symptoms indicative of probable PTSD, assessed using the PTSD Checklist (a self-report symptoms rating scale). The researchers found that overall post event incidence among those without a prior history of asthma was 10.2 percent, with rescue/recovery workers having higher postevent asthma diagnosis rates than the next highest group, passersby on September 11 (12.2 percent vs. 8.6 percent). For all eligibility groups combined, intense dust cloud exposure was associated with postevent diagnoses of asthma (**13.5 percent** vs. 8.4 percent for no dust cloud exposure). Thirty-nine percent of all respondents reporting postevent diagnoses of asthma also reported intense dust cloud exposure. "These analyses confirm that intense dust cloud exposure was associated with new asthma diagnoses for each eligibility group, including the 1,913 passersby who only had exposure to the area air and dust on September 11," the authors write. Among rescue/recovery workers, risk for asthma was highest among those who worked on the pile on September 11, with risk diminishing with later start dates. Asthma risk also was independently associated with some damage to home or office, and risk was highest if there was a heavy coating of dust at home or at the office. Among residents, those who did not evacuate reported higher rates of asthma than those who did. Of the adults without a diagnosis of PTSD before September 11, **23.8 percent** screened positive for PTS symptoms indicative of probable PTSD at either wave 1 (14.3 percent) or wave 2 (19.1 percent). At follow-up, the prevalence of PTS symptoms increased in every eligibility group, with the greatest increase occurring among rescue/recovery workers. At the wave 2 follow-up survey, passers-by had the highest levels of symptoms (23.2 percent), while residents had the lowest (16.3 percent). Across eligibility groups, passers-by had the highest prevalence of chronic PTS symptoms and office workers had the highest prevalence of resolved symptoms while rescue/recovery workers had the highest prevalence of late-onset symptoms. With regard to mental health diagnoses, 13.6 percent of all participants previously free of PTSD reported receiving a PTSD diagnosis from a mental health professional since September 11; 14.0 percent reported receiving a depression diagnosis; and 7.4 percent reported receiving both. Event-related loss of spouse or job was associated with PTS symptoms. Co-occurrence of post event asthma and PTS symptoms was common in the follow-up survey. Among enrolees with post event asthma, 36 percent had PTS symptoms; among enrolees with these symptoms at follow-up, 19 percent reported a new diagnosis of asthma after September 11. The researchers add that applying reported outcome rates from the follow-up survey results to the approximately 409,000 potentially exposed persons, roughly 25,500 adults are estimated to have experienced post event asthma and 61,000 are estimated to have experienced symptoms indicative of probable PTSD. "**Our findings confirm that, after a**

terrorist attack, mental health conditions can persist if not identified and adequately treated and that a substantial number of exposed persons may develop late-onset symptoms. Our study highlights the need for surveillance, outreach, treatment, and evaluation of efforts for many years following a disaster to prevent and mitigate health consequences," the authors conclude.

JAMA. 2009;302[5]:502-516.

THE DIOXIN POISONING OF VICTOR YUSHCHENKO

An article published Online First exposes the facts of the poisoning of Ukrainian President Victor Yushchenko in 2004. It is the work of Professor Jean Saurat, from the Swiss Centre for Human Applied Toxicology, and the University Hospital, in Geneva, Switzerland, and his collaborators. It establishes that there is a need for routine analytical techniques to test for metabolites of TCDD (2,3,7,8-tetrachlorodibenzo-p-dioxin) which is a type of dioxin and the poison that was used. This will help to provide proper treatment. Victor Yushchenko was poisoned with TCDD in late December of 2004. There was a high concentration of it in his blood which was more than 50,000 times that of the general population. The medical team identified TCDD and its metabolites. For three years they monitored levels using different chemical techniques. They analyzed samples of blood, fatty tissue, feces, skin, urine, and sweat. They found that during the three years, 60 percent of the TCDD that was eliminated was in its original form and had not been metabolized. Two metabolites of TCDD were identified in the feces, blood, and urine. The feces contained the highest concentration of TCDD metabolites. They appeared as the main route of elimination. Overall, the various routes of elimination of TCDD and its metabolites accounted for 98 percent of the loss of the toxin from the body. In Mr Yushchenko's case, the time taken for the amount of TCDD in the body to halve or half-life, was 15 months. The study shows seventeen different types of dioxin were analyzed in Mr Yushchenko. Only TCDD levels were higher than those in the general population. This indicates a severe intoxication of pure TCDD. The authors say: "The highest levels of metabolites were detected in faeces, whereas only traces were found in the blood serum. The metabolite to TCDD ratio was 50-fold lower in the blood serum than in faeces. These findings indicate that these metabolites were unlikely to have been ingested with TCDD, and that TCDD is slowly metabolised, probably by the liver and skin." They remark that high concentrations of TCDD might be needed to activate enzymes in the skin responsible for its metabolism. This might explain why the half-life of TCDD varies with level of exposure. The authors write in conclusion: "Although not done previously, levels of TCDD and its metabolites in tissue, faeces, and body fluids should be monitored in a patient with severe dioxin poisoning because they are indicators of what the follow-up period and treatment strategy should be. The poisoning of Victor Yushchenko with TCDD has changed from a story reported in the news to a medical model. This model of TCDD poisoning indicates

that methods need to be designed for the routine analysis of TCDD metabolites in human beings, and the main aims of research into TCDD poisoning in the metabolomic era should be the analysis of factors that are involved in the metabolism of this toxin." Professor Saurat comments: "This is the first medical report in a peer-reviewed journal on the extraordinary case of Victor Yushchenko. The team was confronted in late December 2004 with a patient severely affected with what was likely to be dioxin poisoning. To cope with such a severe and painful disease, with no established specific treatment, we designed a strategy based on an aggressive monitoring of the poison, nature, distribution, and elimination - the subject of this report. We also designed a search for molecular medicine-based solutions to treat the various organs involved - likely to be the subject of future reports." In an associated note, Professor Martin McKee, from the London School of Hygiene and Tropical Medicine, UK, remarks: "So who poisoned Victor Yushchenko? The obvious suspects are those members of the security service present at the dinner just before he fell ill, yet during the protests in December they and their colleagues gave covert support to Yushchenko, pre-empting a planned crack-down by Interior Ministry troops. Unfortunately for those seeking an answer, there were many people, within Ukraine and outside it, who had a motive. We might never know and, as Sorg and colleagues note, had Yushchenko died at the time, as he might easily have done, we would probably never even have known that he had been poisoned."

9/11 MIND SWELL

As we approach the eighth anniversary of 9/11 consider this paradox. In the post 9-11 years the scientific evidence for disbelieving the official government story has mounted incredibly. And the number of highly respected and credentialed professionals challenging the official story has similarly expanded. Yet, to the considerable disappointment of the international 9/11 truth movement, the objective fact is that there are no widespread, loud demands for a new government-backed 9/11 investigation. The 9/11 truth movement is the epitome of a marginalized movement, one that never goes away despite not achieving truly meaningful results, which in this case means replacing official lies with official truth. What has gone wrong? Akin to the definition of insanity, the hallmark of entrenched but marginalized movements is that they continue to pursue exactly the same strategy and tactics that have failed to produce solid results. They indulge themselves with self-delusion, defensive thinking and acting as if the world at large must surely and finally wake up, see the light and embrace the Truth. Years and, potentially, decades go by, but this quixotic status quo remains embedded, as if set in intellectual concrete. There is no brain tumor to blame. Nor any mass hypnosis of true believers to prove. There is just monumental disinterest among the dominant culture, political establishment and the broad public that is far more engaged with other issues, problems and movements. The 9/11 truth movement, at best, gets meager public attention when it is derided and insulted, used as an example of persistent conspiratorial insanity. Make no mistake; I concluded a few years back, after using my professional engineering and materials science background to study the evidence, that the official government story is a lie. As a former full professor of engineering, I firmly believe that elements of the US government were involved with contributing to (not just allowing) the 9/11 tragedy, but that does not necessarily eliminate the role of those terrorists publicly blamed for

the events. Science, logic, evidence and critical thinking told me this. Who should we blame for the failure of the 9/11 truth movement to fix the historical record and, better yet, identify those in the government who turned 9/11 into an excuse for going to war, getting them indicted, prosecuted, and punished for their murderous acts? It is too easy to blame the mainstream media and political establishment for refusing to demand and pursue a truly comprehensive and credible independent scientific and engineering investigation. President Obama with his tenacious belief in looking forward, not backward, exemplifies a national mindset to avoid the painful search for truth and justice that could produce still more public disillusionment with government and feed the belief that American democracy is weak at best, and delusional at worst. Marginalized movements always face competition for public attention. There are always countless national issues and problems that feed new movements and distract the public. There have been many since 9/11, not the least of which was the last presidential campaign and then the painful economic recession, and now the right wing attacks on health care reform. The 9/11 truth movement illustrates a total failure to compete successfully with other events and movements. This can be explained in several ways. The 9/11 movement has not been able to articulate enough benefits to the public from disbelieving the official government story and pursuing a new investigation. What might ordinary Americans gain? Would proof-positive of government involvement make them feel better, more secure, and more patriotic? Apparently not. In fact, just the opposite. By its very nature, the 9/11 issue threatens many things by discovering the truth: still less confidence in the US political system, government and public officials. Still more reason to ponder the incredible loss of life and national wealth in pursuing the Iraq war. In other words, revealing 9/11 truth offers the specter of a huge national bummer. Conversely, it would show the world that American democracy has integrity. The second explanation for failure is that the truth movement itself is greatly to blame. It has been filled with nerdish, ego-centric and self-serving activists (often most interested in pushing their pet theory) unable to pursue strategies designed to face and overcome ugly, challenging realities. The truth movement became a cottage industry providing income and meaning for many individuals and groups feeding the committed with endless websites, public talks, videos, books and paraphernalia. They habitually preach to the choir. Applause substitutes for solid results. In particular, it embraces the simplistic (and obviously ineffective) belief that by revealing technical, scientific and engineering facts and evidence the public and political establishment would be compelled to see the light. Darkness has prevailed. Proof of this are the views expressed days ago on the truth movement by Ben Cohen on the Huffington Post: “I have done some research on the topic, but stopped fairly quickly into when it dawned on me that: 1. Any alternative to the official account of what happened is so absurd it simply cannot be true. 2. No reputable scientific journal has ever taken any of the 'science' of the conspiracy seriously. 3. The evidence supporting the official story is overwhelming, whereas the 9/11 Truthers have yet to produce a shred of concrete evidence that members of the U.S. government planned the attacks in New York and Washington .” Similarly, in the London Times James Bone recently said a “gruesome assortment of conspiracy theorists insists that the attacks on the US of September 11, 2001 were an inside job. It is easy to mock this deluded gang of ageing hippies, anarchists and anti-Semites.” Truthers continue to face a very steep uphill battle. A common lie about the truth movement is that there have been no credible scientific articles in peer reviewed journals supporting it. But those opposing the truth movement will and do find ways to attack whatever scientific evidence is produced and published. It takes more than

good science and facts for the movement to succeed. Besides the movement having too many genuine crackpots (possibly trying to subvert it), a larger problem is what has been missing from it: effective political strategies. Besides pushing scientific results and more credible supporters, it did nothing successful to make a new 9/11 investigation a visible issue in the last presidential campaign. It did nothing effective to put pressure on a new, Democrat controlled congress to consider legislation providing the authorization and funding for a new, credible investigation. It seems that people who want to blame the government are often unable to also see the political path forward that requires the government to fund a new investigation. To its credit, Architects and Engineers for 9/11 Truth does have a petition aimed at Congress, demanding a new investigation, but has fewer than 5,000 signers. The petition effort in New York City to get a new investigation is commendable, with just under 75,000 signers, but national action is needed. Pragmatically, both efforts are unimpressive compared to other campaigns seeking political action. To get both media attention and political support the movement needs a hundred times more documented supporters, willing to do a lot more than sign a petition. The tenth anniversary of 9/11 will come fast. The opportunity is making 9/11 an issue in the 2012 presidential campaign. The least delusional and defensive in the truth movement should think deeply and seriously on what needs to change to accomplish the prime goal: having an official investigation that compels most people and history to accept the truth, no matter how painful it is, including the possibility that it finds no compelling evidence for government involvement.

BIOLOGICAL WARFARE AND THE NATIONAL SECURITY STATE

A Chronology

The history of bioweapons research in the United States is a history of illicit--and illegal--human experiments. From the Cold War to the War on Terror, successive American administrations have turned a blind eye on dubious research rightly characterized as having "a little of the Buchenwald touch." While the phrase may have come from the files of the Atomic Energy Commission as Pulitzer prize-winning journalist Eileen Welsome revealed in her 1999 book, The Plutonium Files, an investigation into secret American medical experiments at the dawn of the nuclear age, it is as relevant today as the United States pours billions of dollars into work on some of the most dangerous pathogens known to exist in nature. That Cold War securocrats were more than a little concerned with a comparison to unethical Nazi experiments is hardly surprising. After all, with the defeat of the Axis powers came the triumphalist myth-making that America had fought a "good war" and had liberated humanity from the scourge of fascist barbarism. Never mind that many of America's leading corporations, from General Motors to IBM and from Standard Oil to Chase National Bank, were sympathizers and active collaborators with the Third Reich prior to and even during World War II, as documented by investigative journalists Charles Higham in Trading With The Enemy, and Edwin Black in IBM and the Holocaust. Like much else in American history, these were dirty little secrets best left alone. Soon enough however, these erstwhile democrats would come to view themselves as mandarins of a new, expanding American Empire for whom everything was permitted. In this context, the recruitment of top German and Japanese scientists who had conducted grisly "medical" experiments whilst waging biological war against

China and the Soviet Union would be free of any moralizing or political wavering. As the Cold War grew hotter and hotter, America's political leadership viewed "former" Nazis and the architects of Japan's Imperial project not as war criminals but allies in a new undertaking: the global roll-back of socialism and the destruction of the Soviet Union by any means necessary. This tradition is alive and well in 21st century America. With the September 11, 2001 terrorist attacks and subsequent anthrax mailings as a pretext for an aggressive militarist posture, the national security state is ramping-up research for the production of genetically-modified organisms for deployment as new, frightening weapons of war. According to congressional testimony by Dr. Alan M. Pearson, Director of the Biological and Chemical Weapons Control Program at the Washington D.C.-based Center for Arms Control and Non-Proliferation, with very little in the way of effective oversight or accountability, tens of billions of dollars "have been appropriated for bioweapons-related research and development activities." Pearson reveals that approximately $1.7 billion "has been appropriated for the construction on new high containment facilities for bioweapons-related research." By high containment facilities I mean facilities that are designed for work with agents that may cause serious or potentially lethal disease through exposure to aerosols (called Biosafety Level 3 or BSL-3 facilities) and facilities that are designed for work with agents that pose a "high individual risk of life-threatening disease, which may be transmitted via the aerosol route and for which there is no available vaccine or therapy" (called Biosafety Level 4 or BSL-4 facilities). Prior to 2002, there were three significant BSL-4 facilities in the United States. Today twelve are in operation, under construction, or in the planning stage. When completed, there will be in excess of 150,000 square feet of BSL-4 laboratory space (as much space as three football fields). The number of BSL-3 labs is also clearly growing, but ascertaining the amount of growth is difficult in the absence of accurate baseline information. There are at least 600 such facilities in the US. (Alan M. Pearson, Testimony, "Germs, Viruses, and Secrets: The Silent Proliferation of Bio-Laboratories in the United States," House Energy and Commerce Committee, Subcommittee on Oversight and Investigations, October 2007) Chillingly, one consequence of this metastatic growth "is that the very labs designed to protect against bioweapons may become a source for them." As the 2001 anthrax attacks amply demonstrated, the threat posed by a biological weapons' incident may be closer to home than any of us care to think. Pearson writes, "Nor should we ignore the possibility that a US biologist may become disgruntled or turn rogue while working in one of these labs." According to Edward Hammond, the Director of the now-defunct Sunshine Project, while "biological arms control is currently in ... its worst crisis since the signing of the Bioweapons Convention (BWC) in 1972," the American Bioweapons-Industrial Complex has "embarked on the exploitation of biotechnology for weapons development." Indeed, Hammond relates that active programs utilizing genetic engineering techniques have "been employed in offensive biowarfare programs in order to make biowarfare agents more effective." But increases in state subsidies for such work have generated new risks to the public. A recent Government Accountability Office (GAO) report faulted the Centers for Disease Control and Prevention (CDC) for lax security at three of the nation's five BSL-4 labs currently in operation that "handle the world's most dangerous agents and toxins that cause incurable and deadly diseases." Agents such as Ebola, Marburg and smallpox are routinely studied at these facilities. And yet, as GAO auditors found. Select agent regulations do not mandate that specific perimeter security controls be present at BSL-4 labs, resulting in a significant difference in perimeter security between the

nation's five labs. According to the regulations, each lab must implement a security plan that is sufficient to safeguard select agents against unauthorized access, theft, loss, or release. However, there are no specific perimeter security controls that must be in place at every BSL-4 lab. While three labs had all or nearly all of the key security controls we assessed, our September 2008 report demonstrated that two labs had a significant lack of these controls. (Government Accountability Office, Biosafety Laboratories: BSL-4 Laboratories Improved Perimeter Security Despite Limited Action by CDC, GAO-09-851, July 2009) As Global Security Newswire revealed in June, a "recently completed inventory at a major U.S. Army biodefense facility found nearly 10,000 more vials of potentially lethal pathogens than were known to be stored at the site." The 9,220 samples--which included the bacterial agents that cause plague, anthrax and tularemia; Venezuelan, Eastern and Western equine encephalitis viruses; Rift valley fever virus; Junin virus; Ebola virus; and botulinum neurotoxins--were found during a four-month inventory at the U.S. Army Medical Research Institute of Infectious Diseases at Fort Detrick, Md., according to Col. Mark Kortepeter, the center's deputy commander. (Martin Matishak, "Thousands of Uncounted Disease Samples Found at Army Biodefense Lab," Global Security Newswire, June 18, 2009) The GSN report states that while "half of the newfound material was destroyed after being recorded," inventory control officer Sam Edwin told reporters that "the other half was deemed worthy for further scientific use, cataloged, and stored in the center's containment freezers." More pertinently, what happens when the state itself turns "rogue" and under cover of national security and the endless "war on terror" creates the "acute risk" in the form of out-of-control laboratories "designed to protect against bioweapons" that instead, have "become a source for them"?

Bioweapons and National Security: A Chronology

Source Notes: This chronology has drawn from dozens of books, articles and declassified government documents in its preparation. Notable in this regard is Michael Christopher Carroll's Lab 257: The Disturbing Story of the Government's Secret Germ Laboratory; Linda Hunt, Secret Agenda; Bob Coen and Eric Nadler, Dead Silence: Fear and Terror on the Anthrax Trail; the National Security Archive's documentary history of U.S. Biological Warfare programs and The Sunshine Project.

* August 1945: Operation Paperclip, an Office of Strategic Services (OSS) program to import top Nazi scientists into the United States. Linda Hunt relates in her book, Secret Agenda, that Reich Health Leader (Reichsgesundheitsführer) Dr. Kurt Blome, was saved from the gallows due to American intervention. Blome admitted he had worked on Nazi bacteriological warfare projects and had experimented on concentration camp prisoners with bubonic plague and sarin gas at Auschwitz. After his acquittal at the 1947 Nuremberg Doctors' Trial, Blome was recruited by the U.S. Army Chemical Corps and advised the Pentagon on biological warfare. Walter Paul Emil Schreiber, a Wehrmacht general who assigned doctors to experiment on concentration camp prisoners and disbursed state funds for such experiments was another Paperclip recruit; in 1951, Schreiber went to work for the U.S. Air Force School of Medicine. Hubertus Strughold, the so-called "father of space medicine" discussed--and carried out--experiments on Dachau inmates who were tortured and killed; Strughold worked for the U.S. Air Force. Erich Traub, a rabid Nazi and the former chief of Heinrich Himmler's Insel Riems, the Nazi state's secret biological warfare research facility defects to the United States. Traub was brought to the U.S.

by Paperclip operatives and worked at the Naval Medical Research Institute and gave "operational advice" to the CIA and the biowarriors at Ft. Detrick.

* September 1945: General Shiro Ishii's Unit 731, a secret research group that organized Japan's chemical and biological warfare programs is granted "amnesty" by Supreme Allied Commander in the Pacific, General Douglas MacArthur in exchange for providing America with their voluminous files on biological warfare. All mention of Unit 731 is expunged from the record of The Tokyo War Crimes Tribunal. During the war, Unit 731 conducted grisly experiments, including the vivisection of live prisoners, and carried out germ attacks on Chinese civilians and prisoners of war. According to researcher Sheldon H. Harris in Factories of Death: Japanese Biological Warfare 1932-45 and the American Cover-Up, Unit 731 scientists performed tests on prisoners with plague, cholera, smallpox, botulism and other infectious diseases. Their work led to the development of what was called a defoliation bacilli bomb and a flea bomb used by the Imperial Army to spread bubonic plague across unoccupied areas of China. The deployment of these lethal munitions provided the Imperial Army with the ability to launch devastating biological attacks, infecting agriculture, reservoirs, wells and populated areas with anthrax, plague-infected fleas, typhoid, dysentery and cholera. Rather than being prosecuted as war criminals, Unit 731 alumni became top bioweapons researchers. Ishii himself became an adviser at USAMRIID at Ft. Detrick.

1950: A U.S. Navy ship equipped with spray devices supplied by Ft. Detrick, sprayed serratia marcescens across the San Francisco Bay Area while the ship plied Bay waters. Supposedly a non-pathogenic microorganism, twelve mostly elderly victims die.

* Early 1950s: Army biological weapons research begins at the Plum Island Animal Disease Center (PIADC). Vials of anthrax are transferred from Ft. Detrick to Plum Island. This information is contained in a now declassified report, "Biological Warfare Operations," Research and Development Annual Technical Progress Report, Department of the Army, 1951.

* 1951: Racist experiments are carried out. U.S. Army researchers deliberately expose African-Americans to the fungus Aspergillus fumigatus to discern whether they are more susceptible to infections caused by such organisms than white Europeans. Also in 1951, black workers at the Norfolk Supply Center in Virginia were exposed to crates contaminated with A. fumigatus spores.

* 1952: According to 1977 hearings by the Senate Select Committee on Intelligence and the Subcommittee on Health and Scientific Research into Project MKULTRA, we discover the following: "Under an agreement reached with the Army in 1952, the Special Operations Division (SOD) at Fort Detrick was to assist CIA in developing, testing, and maintaining biological agents and delivery systems. By this agreement, CIA acquired the knowledge, skill, and facilities of the Army to develop biological weapons suited for CIA use."

* 1953: Frank Olson, a chemist with the Army's top secret Special Operations Division at Ft. Detrick was involved with biological weapons research and was tasked to the CIA for work on MKULTRA. In 1953, as Deputy Acting Head of Special

Operations for the CIA, Olson is a close associate of psychiatrist William Sargant who was investigating the use of psychoactive drugs as an interrogation tool at Britain's Biological Warfare Centre at Porton Down. After being dosed with LSD without his knowledge by Dr. Sidney Gottlieb, the Agency's liaison to Ft. Detrick, Olson undergoes a severe psychological crisis. The scientist begins questioning the ethics of designing biological organisms as weapons of war. This does not sit well with his Agency and Army superiors. On November 24, 1953, Olson and a CIA minder, Robert Lashbrook, check into New York's Staler Hotel. He never checked out. According to Lashbrook, Olson had thrown himself through the closed shade and window, plunging 170 feet to his death. But because of his knowledge of CIA "terminal experiments" and other horrors conducted under MKULTRA, the Olson family believes the researcher was murdered. When Olson's son Eric has his father's body exhumed in 1994, the forensic scientist in charge of the examination determines that Olson had suffered blunt force trauma to the head prior to his fall through the window; the evidence is called "rankly and starkly suggestive of homicide." Norman G. Cournoyer, one of Olson's closet friends at Ft. Detrick also believes the scientist was murdered. When asked by the Baltimore Sun in 2004 why Olson was killed, Cournoyer said, "To shut him up. ... He wasn't sure we should be in germ warfare, at the end."

* 1955: Following a CIA biowarfare test in Tampa Bay, Florida, the area experiences a sharp rise in cases of Whooping Cough, including 12 deaths. The Agency had released bacteria it had obtained from the U.S. Army's Chemical and Biological Warfare Center at the Dugway Proving Grounds.

* 1956-1958: More racist experiments. The U.S. Army conducted live field tests on poor African-American communities in Savannah, Georgia and Avon Park, Florida. Mosquitoes were released into neighborhoods at ground level by "researchers" or by helicopter; residents were swarmed by the pest; many developed unknown illnesses and some even died. After the tests, Army personnel posing as health workers photographed and tested the victims, then disappeared. While specific details of the experiments remain classified, it has been theorized that a strain of Yellow Fever was used to test its efficacy as a bioweapon.

* 1962: A declassified CIA document obtained by the National Security Archive relates the following: "In November 1962 Mr. [redacted] advised Mr. Lyman Kirkpatrick that he had, at one time, been directed by Mr. Richard Bissell to assume responsibility for a project involving the assassination of Patrice Lumumba, then Premier, Republic of Congo. According to Mr. [redacted] poison was to have been the vehicle as he made reference to having been instructed to see Dr. Sidney Gottlieb in order to procure the appropriate vehicle." Gottlieb was the chief scientific adviser for the CIA's MKULTRA program.

* June 1966: The U.S. Army's Special Operations Division dispenses Bacillus subtilis var niger throughout the New York City subway system. More than a million people were exposed when Army operatives dropped light bulbs filled with the bacteria onto ventilation grates.

* December, 1967: The New York Times reports, "Fatal Virus Found in Wild Ducks on L.I." A virus never seen before in the Western hemisphere began with ducks in

Long Island at a site opposite Plum Island; the virus devastates the area's duck industry and by 1975 has spread across the entire continent.

* 1971: The U.S. Department of Agriculture proclaims that "Plum Island is considered the safest in the world on virus diseases." USDA's proof? "There has never been a disease outbreak among the susceptible animals maintained outside the laboratory since it was established."

* 1975: PIADC begins feeding live viruses to "hard ticks," including the Lone Star tick (never seen outside Texas prior to 1975). The Lone Star tick is a carrier of the Borelia burgdorferi (Bb) bacteria, the causal agent of Lyme Disease. The first cases of the illness are reported in Connecticut, directly across from the facility. Current epidemiological data conclusively demonstrate that the epicenter of all U.S. Lyme Disease cases is Plum Island. It is theorized that deer bitten by infected ticks swam across the narrow waterway separating the island from the mainland.
* September 1978: A PIADC news release relays the following: "Foot and Mouth Disease has been diagnosed in cattle in a pre-experimental animal holding facility at the Plum Island Animal Disease Center." A documented outbreak has occurred.

* 1979: An internal investigation of the FMD incident reveals massive, widespread failures in the containment systems at PIADC. A USDA Committee report recommends that "Lab 101 not be considered as a safe facility in which to do work on exotic disease agents until corrective action is accomplished."

* 1979: Despite containment failures and poor practices, USAMRIID undertakes the investigation of the deadly Zagazig 501 strain of Rift Valley Fever at PIADC. Producing symptoms similar to aerosolized hemorrhagic fevers such as Marburg and Ebola virus, the Army inoculates sheep that should have been destroyed as a result of the FMD outbreak with an experimental Rift Valley Fever vaccine. The experiments are conducted outdoors, in violation of the lab's primary directive prohibiting such work. During a 1977 Rift Valley outbreak in Egypt, some 200,000 people are infected and 700 others die excruciating deaths. A survey of blood serum taken before 1977 proved that the virus was not present in Egypt prior to the epidemic. By 2000, rampant outbreaks of the disease have occurred in Saudi Arabia and Yemen with the virus poised to unfurl its tentacles into Europe.

* 1982: A Federal review begun after the FMD outbreak concludes: "We believe there is a potentially dangerous situation and that without an immediate massive effort to correct deficiencies, a severe accident could result... [L]ack of preventive maintenance, [and] pressures by management to expedite programs have resulted in compromising safety."

* 1983: Six PIADC workers test positive for African Swine Fever virus. The workers are not notified of the test results which are conducted clandestinely during routine annual physical exams.

* 1991: USDA privatizes PIADC. A New Jersey firm, Burns & Roe Services Corporation low bids other competitors and is awarded the contract. In cost-cutting moves, the contractor scales back on safety and security measures in place for decades.

* June 1991: An underground cable supplying Lab 257 shorts out but is not replaced since there is no money left in the budget.

* August 1991: Hurricane Bob, a category 3 storm similar to Hurricane Katrina, slams into Plum Island, knocking down overhead power lines that connect Lab 257. The underground cable which was Lab 257's primary power source has not been repaired. Freezers containing virus samples defrost, air seals on lab doors are breached and animal holding room vents fail. PIADC's "fail safe" mechanism of "air dampers" to seal off the facility also fail. Melted virus samples mix with infected animal waste on lab floors as swarms of mosquitoes fill the facility.

* September 1991: The USDA denies that any system failures occurred during the hurricane. Whistleblowing workers in Lab 257 at the time of the blackout are fired in further cost-cutting moves and several subsequently develop mysterious undiagnosed diseases.

* 1992: The Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA) cite PIADC with hundreds of safety violations. When OSHA returned five years later, none of the violations have been corrected and discover 124 new violations.

* July 1992: Although USDA officially denies that PIADC conducts biological warfare research, fourteen officials from the Joint Chiefs of Staff and the Pentagon visit Plum Island. Internal documents reveal that that the visit was "to meet with [Plum Island] staff regarding biological warfare." According to Carroll, "the visitors were part of the Arms Control and Disarmament Agency reviewing the dual-use capabilities of the facility."

* Spring 1995: Lab 257 is closed. Although scheduled to be fully decontaminated and demolished in 1996 Carroll reports: "Lab 257 still stands today, rotting from weathered decay, harboring who knows what deep within."

* August 1999: The first four human cases of West Vile virus, a mosquito-borne pathogen never diagnosed in North America are diagnosed on Long Island. Horse farms within a five-mile radius of one another, directly opposite Plum Island, report horses dying following violent seizures. An investigation reveals that 25% of the horses in this small, localized area test positive for West Nile. The outbreak begins in August 1999 when birds, including half the exotic bird species in the Bronx Zoo begin dying mysteriously. The virus has an affinity for birds and the vector is soon identified as the mosquito. In 1999, the disease was confined to the New York City area, however by 2002, the Centers for Disease Control reports all but 6 of the lower 48 states reported West Nile virus in birds, mosquitos, animals or human populations. CDC estimates that some 200,000 people are infected nationally. During the initial outbreak in 1999, veterinary pathologist Tracey McNamara suspected a casual relationship between the bird die-offs and the human cases; CDC rebuffs her concerns. Through her persistent efforts, it is determined that the virus was indeed West Nile, a pathogen that had never been seen in North America. The CDC announces that West Nile virus was in the nation's blood supply when transplant patients who had no prior exposure to the pathogen develop the disease. The USDA's

response? Deny, deny, deny? However, Jim House, a former PIADC scientist, believes that West Nile samples existed prior to 1999 on Plum Island. He told Carroll, "There were samples there, and it wasn't answered clearly to the public. They didn't honestly tell how many samples they had and that's when people started to get upset. When Carroll filed a Freedom of Information Act request for a catalog of germs held in the Plum Island virus library, he was turned down on grounds of "national security."

* September 1999: The New York Times reports that due to "the growing threat of biological terrorism" against America's food supply, USDA "is seeking money to turn the Plum Island Animal Disease Center ... into a top security laboratory where some of the most dangerous diseases known to man or beast can be studied."

* 1999: A Cold War-era document is declassified proving that in the early 1950s USAMRIID shipped twelve vials of weaponized anthrax (enough to kill one million people) to PIADC. In 1993 Newsday revealed that previously unclassified documents demonstrated Pentagon plans to disrupt the Soviet economy by spreading diseases to kill pigs, cattle and horses.

* 1999: Plans to "upgrade" PIADC by building a BSL-4 lab are killed when Congress pulls funding after a public outcry.

* September 2001: After the anthrax attacks, despite USDA denials that anthrax was ever present on the island, FBI investigators include the following questions in their polygraph examination of scientists under investigation: "Have you ever been to Plum Island?" "Do you know anyone who works at Plum Island?" "What do they do there?"

* December 2002: The New York Times reports "a three-hour power failure at the Plum Island Animal Disease Center last weekend renewed concerns about the safety of the high-security government laboratory." According to the Times, "the loss of power and failure of all three backup generators raised fears for the first time that the containment of infectious pathogens could have been seriously compromised at the laboratory."

* June 2003: President George W. Bush transfers control of PIADC to the Department of Homeland Security. The airspace over the island is unrestricted and the gates leading to Lab 101 remain open and unguarded.

* May 2004: In a sign that work on Plum Island is being shifted to "other sites," including those run by private contractors, DHS announces an $18 million grant to study Rift Valley fever, avian influenza and brucellosis.

* August 2004: DHS confirmed that an FMD outbreak "had spread briefly" in "two previously undisclosed incidents earlier this summer," The New York Times reports. A DHS spokesperson said the virus remained "within the laboratory's sealed biocontainment area" and that there "had be no risk" to human or animals. An investigation into the cause "was continuing."

* 2004: At the Medical University of Ohio, a researcher is infected with Valley Fever at the center's BSL-3 facility; Valley Fever is a biological weapons agent.

* February 2005: University of Iowa researchers conduct unauthorized genetic engineering experiments with the select agent Tularemia (rabbit fever). The Sunshine Project reports that researchers mixed genes from Tularemia species and introduced antibiotic resistant characteristics into the samples.

* March 2005: When a containment facility fails, workers at the University of North Carolina at Chapel Hill are exposed to tuberculosis when the BSL-3 "fail-safe" systems malfunction; a blower pushes contaminated air out of the work cabinet, infecting the workroom. The facility had been inspected one month prior to the accident by U.S. Army.

* Summer 2005: At the same Ohio facility a serious accident occurs when workers are infected with an aerosol of Valley Fever.

* October-November 2005: Dozens of samples thought to be harmless are received by the University of California at Berkeley. In fact, they are samples of Rocky Mountain Spotted Fever, a BSL-3 bioweapons agent due to its transmission as an aerosol. The samples are handled without adequate safety precautions; however, the community is never notified of the incident.

* August 2005: The whistleblowing watchdog group Tri-Valley Cares obtains documents in May 2009 proving that the Lawrence Livermore National Laboratory had conducted "restricted experiments" with "select biological agents" at the facility. In 2005, LLNL "inadvertently" released anthrax at the lab in another incident that lab officials attempted to cover-up; five individuals were infected with the deadly pathogen.

* April 2006: Three Texas A&M "biodefense" researchers are infected with Q Fever, a biological weapons agent. Rather than reporting the incident to the CDC as required by law, Texas A&M officials cover-up the accident.

* August 2006: DHS announces that PIADC is "not on the rebuilding list" and a new site to study infectious diseases is being considered.

* January 2009: DHS announces that the new National Bio and Agro-Defense Facility will be built in Manhattan, Kansas.

* July 2009: Government Accountability Office investigators charge that DHS relied on "a rushed, flawed study" to locate the $700 million research facility for highly infectious pathogens "in a tornado-prone section of Kansas." Among other concerns, the GAO cites DHS's "flawed and outdated methodology" in its criticism. Those concerns are: "the ability of DHS and the federal government in general to safely operate a biosafety facility such as the proposed NBAF; the potential for a pathogenic release through accidents, natural phenomena, and terrorist actions; our May 2008 testimony that concluded that DHS had not conducted or commissioned a study to determine whether FMD research could be conducted safely on the U.S. mainland; natural phenomena such as tornadoes, earthquakes, and hurricanes that could cause catastrophic damage to the NBAF and result in the release of a pathogen; the possibility that an infected mosquito vector could escape, allowing a pathogen such as

Rift Valley Fever virus to become permanently established in the United States; the economic effects of a release or a perceived release on the local, state, and national livestock industry."

ISRAEL'S FIRST SECURE ER PROTECTS PATIENTS FROM CHEMICAL WARFARE

The Rambam Hospital in Haifa dedicated this week a new $14 million emergency facility that provides protection from missiles and chemical weapons that Israel believes may be in Hizbullah's possession. The hospital was one of hundreds of civilian targets that came under fire by the terrorist organization in the Second Lebanon War in the summer of 2006. The new emergency room is the first stage of a plan that includes the establishment of a secure underground hospital for 1,730 patients, a children's hospital and facilities for cancer care and for cardiac treatment, and a tower for clinical research. Government sources provided one quarter of the construction costs, and private donors and organizations provided the remainder. The new emergency room complex, when completed, will be more than three times larger than the previous facility, covering three-quarters of an acre with the ability to treat 60 patients simultaneously, according to Rambam Health Care Campus director Prof. Rafi Beyar.

FEAR HENDRA VIRUS

Overseas researchers were investing in Hendra virus research, despite it occurring only in Australia, because of fears it may be used in biological warfare. A Queensland Horse Council Hendra virus conference attended by horse owners and bat carers in Cleveland, on Brisbane's bayside, heard from Dr Peter Reid today. Dr Reid, who was the veterinarian involved in the first known Hendra outbreak that claimed the life of horse trainer Vic Rail in 1994, said the virus and its relative, the Nipah virus, were so lethal that the US considered it a homeland security threat. "Americans see it as a potential bioterrorism weapon that's why (the department of) Homeland Security is funding research into viruses in bats," Dr Reid said."There is no effective treatment or vaccine for Hendra or Nipah and the mortality rate is high. "Bats are quite accessible and in the wrong hands it can pose quite a threat." Bats are the host of both viruses, with the Nipah virus being the deadlier of the two, having killed hundreds in Malaysia, Bangladesh and India. The virus was originally known to transfer from bats to pigs and from pigs to humans but there have also been bat to human transmissions and human to human transmissions, with a 70 to 75 per cent mortality rate. Hendra, so far, is only known to be transmitted from bats to horses and from horses to humans. There have been no bat-to-human or human-to-human transmissions. It has a **57 per cent mortality** rate, with four human deaths out of seven people infected - all having occurred in Queensland. Rockhampton vet Alister Rodgers was the most recent victim, succumbing to the virus last month after an outbreak at a horse stud in Cawarral. Dr Reid warned against complacency in the southern states as bats continued to spread in NSW and Victoria due to climate

change. "Why hasn't it happened down south? It might be just luck so far," Dr Reid said. "Wherever flying foxes live there's the potential for Hendra to occur and people down south should not be lulled into a false sense of security that it only happens north of the Tweed (River)." Dr Reid said it was his gut feeling that the virus was becoming more contagious, with more outbreaks in the past four years. He warned horse owners that the virus could survive up to four days in the urine of bats and in the saliva or body fluids of infected horses. QHC president Debbie Dekker said simple biosecurity measures such as wearing safety glasses, gloves, rubber boots and a mask would prevent infection.

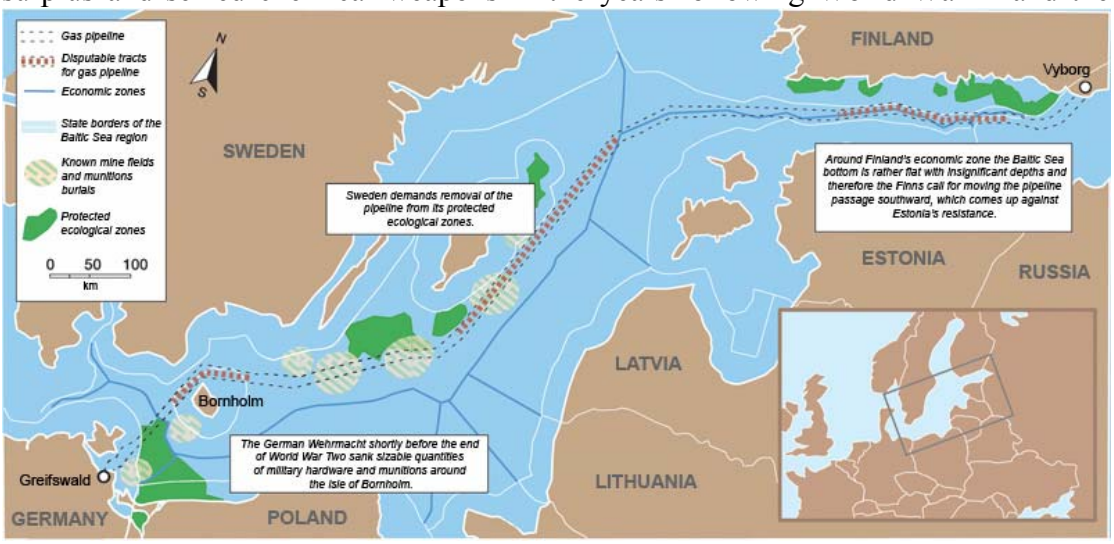
IRAQI SUPREME COURT: 460 FOREIGN COMPANIES SOLD CHEMICAL WEAPONS TO SADDAM

To this day, people from Halabja still suffer the aftereffects of the gas attack. Four-hundred and sixty foreign companies sold chemical weapons to Saddam Hussein's ousted Iraqi regime, yet the current Iraqi government-despite vowing to pursue those companies has filed no lawsuits in court against them, says Goran Adham, chief prosecutor in Iraq's Supreme Criminal Court. The companies are American, Russian, German, Dutch, Japanese, Indian, Greek, and other nationalities, stated Adham. "We have writen down their names for the Iraqi Supreme Criminal Court," he added. "The Iraqi government is delinquent in questioning those companies that sold chemical weapons to the Baath Regime," says Mohammad Ahmed, head of the Martyrs, Victims and Political Prisoners Committee in Iraqi Parliament. "On several occasions we've called on the Iraqi government to file lawsuits to question those companies," tells Adham. Halabja, situated 81 km southeast of Suleimaniyah and 364 km northeast of Baghdad, was subjected to an airborne chemical weapons attack in March 1988 by the former Iraqi regime. **The death toll was widely estimated at 5,000, with more than 10,000 injuries. To this day, people from Halabja still suffer the aftereffects of the gas attack. Since 2007, 17 victims of that day have died.**

PIPELINE RENEWS DEBATE ON SEA-DUMPED CHEMICAL WEAPONS

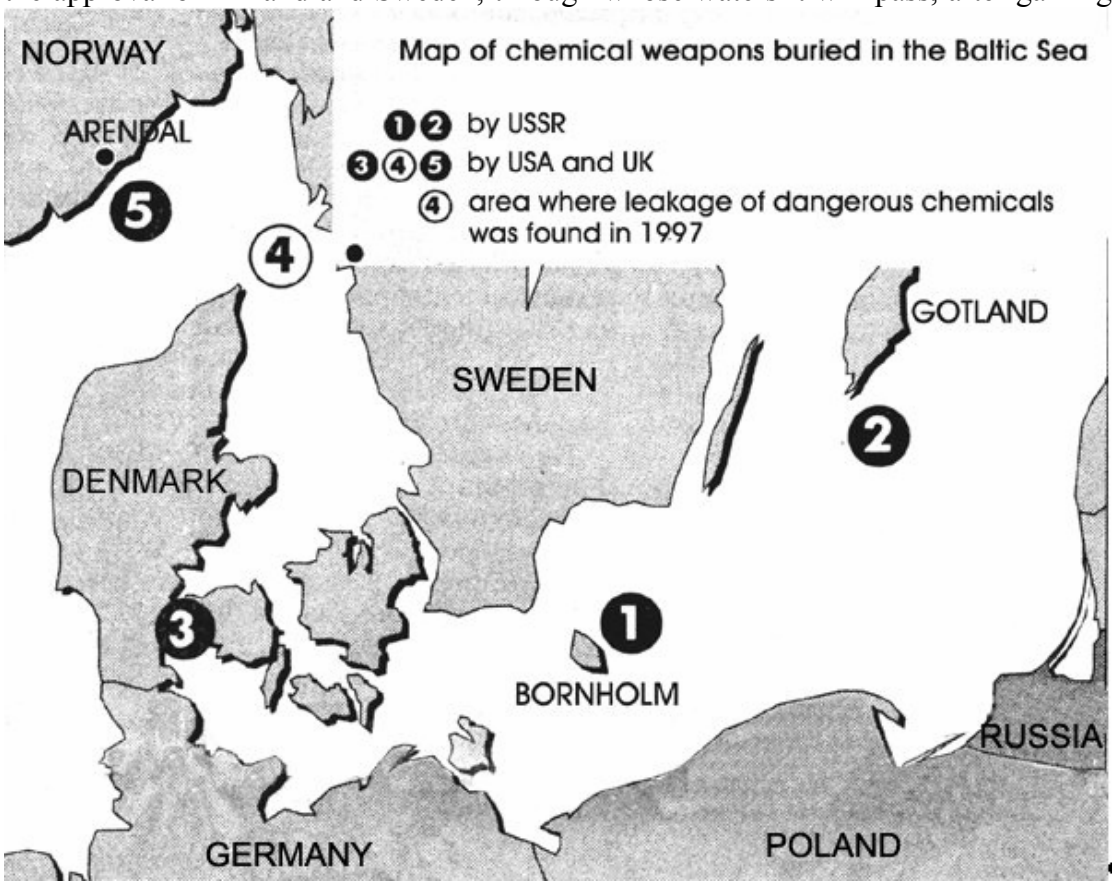
On Sep. 24, a beachgoer near Swansea, Wales reported a piece of military equipment washed up on the shore. Three days later, the two members of the team that had showed up to dispose of the shell developed symptoms compatible with mustard gas –

a chemical warfare agent used in the two world wars and other conflicts. Concern over sea-dumped chemical weapons such as the mustards that washed up in Wales is growing, particularly in the Baltic Sea - the site of the dumping of 40,000 tonnes of surplus and seized chemical weapons in the years following World War II and the



proposed site of the Nord Stream natural gas pipeline connecting Russia and Germany. Following presentations at the U.N. last week and meetings on Capitol Hill later this week, Vaidotas Verba, Lithuania's ambassador to the Netherlands and to the Organisation for the Prohibition of Chemical Weapons hopes to spread awareness of this sea-borne hazard and build momentum for a draft resolution to be presented at the U.N. General Assembly next fall. "The full extent of chemical weapons dumping will never be known due to inadequate or destroyed records," Verba told a room of officials and experts at the Washington offices of the environmental non-profit Global Green USA Monday. In addition to the Baltic, abandoned chemical weapons have been dumped in the Atlantic and Pacific Oceans and the North and Mediterranean seas, as well as off the coast of Australia and the Hawaiian island of Oahu, he said. The Nord Stream project has refocused attention on this issue. The Helsinki Commission, charged with protecting the relatively shallow and stagnant Baltic from pollution, found no major threats to marine life from abandoned chemical weapons in 1994 and determined that the best way to deal with these materials on the sea floor is to identify where they are and leave them alone. But laying the two parallel 122-cm Nord Stream pipelines would run a strong risk of disrupting at least a few dumpsites, despite the construction company's continuing efforts to lay a route that avoids known sites and its disposal, currently underway, of unexploded ordnances in the pipeline's path. In addition to sediment building up and burying canisters, the documenting of dumpsites is further complicated by the drifting of objects around the seafloor, Verba explained. In a possibly analogous case, 4,500 incendiary bombs washed up along the west coast of Scotland a few days after the trench digging for a pipeline from Scotland to Ireland had begun in October 1995. "Many people think that if it's in the water, it's out of sight, out of mind," said Rick Stauber, a retired bomb disposal technician and current disposal analyst, Monday. But the events in Wales, western Scotland and elsewhere suggest otherwise. Bottom trawling, dredging, and sand and gravel extraction all pose risks, said Verba, in addition to the laying of underwater pipes and cables, of which Nord Stream is only the most prominent case. While some agents decompose and eventually become harmless in the salt water, others remain viable and dangerous. Sulfur mustards like mustard gas, for instance, undergo a

process in water whereby the outer layers solidify into a globule while the mustard liquid inside remains active. If a fisherman drags up this amber-colored lump and dumps it on his deck he could face serious health hazards. "As long as the water or air doesn't reach the chemicals inside, it stays dangerous," explained Stauber. In the United States, the (southeastern Virginia) Daily Press set off a wave of concern and research in 2005 after reporting that 64 million pounds of chemical weapons and 400,000 chemical-filled bombs were dumped off the coasts of several U.S. states in the decades following World War II. "The 2005 articles generated interest at the Department of Defence," said Stauber, "as there were questions and nobody really had any answers." One of the many discoveries his and other research then revealed was the 1919 journey of the USS Elinor from Baltimore to New York, dumping surplus weapons along the way. The locations of some of these dumps are known; many are not. In Operation Davy Jones Locker, the U.S. dumped the tonnes of German chemical weapons that were taking up space in their depots, particularly at the Skagerrak Strait north of Denmark, where they sank German ships they had loaded with captured mustard and nerve gas. The most pressing issue connected with sea-dumped chemical weapons today is likely the Nord Stream project, which still needs the approval of Finland and Sweden, through whose waters it will pass, after gaining



the approval of Denmark Tuesday. In this connection, Markus Binder, an independent nonproliferation analyst and former deputy director of the Chemical and Biological Weapons Nonproliferation Programme at the James Martin Centre for Nonproliferation Studies in Monterey, California, has some reservations about the motivations of states like Lithuania in bringing the chemical weapons issue to the forefront now. Lithuania has expressed concern over the possibility of a pipeline to Western Europe that will circumvent its territory and, thus, the possibility of Russia cutting off its gas supplies. Appealing to the dangers of laying pipe amongst chemical

weapons dumpsites, known and unknown, might delay this possibility. The chemical weapons are probably an issue of concern to Lithuania, Binder said Monday, "but why they're of so much concern is likely strategic." Listening to the Baltic States and others, sometimes it sounds like at any moment someone could disturb a dumpsite and a cloud of gas will explode, he said, but as a threat, it is really no worse an environmental or health problem than industrial runoff from old factories in the former Soviet Union. "It's a manageable issue," he said. How it might be managed, however, remains to be seen. Chemical weapons dumped before 1985 are not required to be declared to the OPCW, so German weapons dumped into the Baltic by a Russian ship in 1946 and dislodged next year by an Italian construction crew could pose a difficult question regarding who has the responsibility to clean up the abandoned weapons. Most likely, posits Stauber, the weapon would just be dumped back overboard in order to avoid the delays and legal issues a clean-up operation would entail. Lithuania's concern over the current and potential dangers of sea-dumped chemical weapons is at least genuine enough to cause it to push for a draft resolution at the U.N. in 2010 as well as new research and publicity projects to educate the public about the hazards of chemical weapons in their waters. "The main object of our efforts is to encourage dialogue between the countries affected," said Verba.

PAINT 'TO THWART CHEMICAL ATTACK'

Scientists are planning to develop a paint coating for military vehicles which would soak up a chemical warfare agent and then decontaminate itself. The technology could protect those operating in or around a vehicle after a chemical attack. It would be adapted from "strippable" coatings currently used to provide temporary camouflage for vehicles. The development work is being carried out by the UK's Defence Science and Technology Laboratory (DSTL). Dr Steven Mitchell, from DSTL's headquarters at Porton Down in Wiltshire, said the next generation of paint could be engineered to absorb chemical warfare agents. Further down the line, scientists are looking into reactive coatings. These would incorporate catalysts and possibly enzymes allowing the paint to "self-decontaminate". "Ultimately, what we'd like to create is a coating that changes colour to indicate it's been contaminated, decontaminates itself, then returns to the original colour when it's clean," said Dr Mitchell, acting team leader for hazard management and decontamination at DSTL. "This is a long-term but not unreasonable ultimate objective." Currently, strippable - or peelable - coatings are used when a new camouflage is required; changing a vehicle's colour from green to, for example, "light stone" in order to blend with desert terrain. But even if something is not visible from far away, it may reveal itself by reflecting sunlight; the paint can also alter the vehicle's "glint signature", helping conceal it from hostile troops. Under the skin DSTL has been collaborating on the technology with industry partner AkzoNobel Aerospace Coatings. "There are a number of advantages to this technology. One is its flexibility; it is easy to apply and easy to remove. You can change your colour or your signature in theatre in a relatively straightforward

manner," Dr Mitchell told BBC News. The coating is applied just like normal paint, often using commercially available spray guns. "It's a single pack emulsion. It looks much like paint you'd find in a DIY store for painting your house. So you could apply it with a paint brush, or you could apply it with a roller. It's really flexible," Dr Mitchell explained. "That's important for potential use in theatre because you might not have a sophisticated paint spray system available." On the grounds of DSTL's headquarters, Dr Mitchell demonstrated how to remove the coating from a battlefield ambulance which had been painted for desert camouflage. The coating on a rear door had been pre-scored with a knife; Dr Mitchell reached up to the raised tab and peeled back the rubbery skin by hand. The coating came away easily and largely in one piece. While paint remained stuck to some raised areas such as bolts, he said remaining residue could be removed with a water power washer. Before long, the whole door was stripped to the vehicle's dark green base colour. Dr Mitchell squashed the peeled coating into a lump and dropped it on the grass.

Chemical peel

Some other coatings require a caustic wash to remove, which means care has to be taken when disposing of the waste. But this one can be disposed of as general waste as long as it is not contaminated. Dr Mitchell said DSTL was currently working in partnership with industry to develop a version of the coating that would absorb the vast majority of a liquid chemical warfare agent. "That helps prevent the contact hazard. It also helps prevent people touching the surface and spreading the contamination," he explained. Liquid decontamination would still be required; some parts of vehicles, such as tracks and running gear, are not suitable for the application of a coating. "Ultimately, what we'd love to do is develop a paint technology that is 'self-disclosing' - when it becomes contaminated, perhaps it changes colour to tell you it is contaminated with a chemical warfare agent," Dr Mitchell said. "Maybe we'd also like to put some chemistry into the coating that would then react with and decontaminate the agent itself. And then perhaps even a colour change to tell you that process has been successful and the agent has been destroyed." However, he stressed that these were long-term research aims: "Clearly, there are a lot of technical hurdles to be overcome to develop something this sophisticated," Dr Mitchell said.

AL QAEDA'S NUCLEAR SCIENTIST?

Amidst much furor, French anti-terrorism judge Christophe Tessier announced that year-old Algerian-French scientist Dr. Adlene Hicheur had been brought up on charges of "association with terrorists" on October 12. Allegedly in contact with al-

Qaeda's North African affiliate, al-Qaeda in the Islamic Maghreb (AQIM), Dr. Hicheur was arrested with his 25-year old brother (later released) in Vienne, France on October 8 after an 18-month investigation headed by France's internal security service, the Direction centrale du renseignement intérieur (Central Directorate of Interior Intelligence - DCRI) (Le Monde, October 14). A scientist involved in the Large Hadron Collider project (also known as the European Organization for Nuclear Research or CERN), Dr. Hicheur's arrest was met with a wave of speculation in the press that he might be at the center of a nuclear-focused al-Qaeda plot. In an attempt to dampen such speculation, CERN

published a press release which admitted that Dr. Hicheur was an employee, but categorically stated: "CERN does not carry out research in the fields of nuclear power or nuclear weaponry." The investigation into Dr. Hicheur was apparently initiated as a result of an American tip which had turned up on the periphery of a separate investigation into Afghan support networks in France (Le Monde, October 14). Having been alerted, the DCRI launched an extensive bugging operation tracking Hicheur's online activity to a degree described by the former Interior Minister as being on a par with "reading over someone's shoulder" (Independent, October 11). In his email traffic, watchers noticed messages apparently passing from Dr. Hicheur to known high-level contacts in AQIM in which he offered to assist them in plotting in France, though it was unclear whether these offers had anything to do with his work at CERN (Le Figaro, October 11). Born in Seif, Algeria in 1976, Dr. Hicheur's family moved to France when he was two. A bright pupil, he obtained a Ph.D. in particle physics in 2003 from the University of Savoie in Annecy, France, which involved research in 2002 at Stanford University in the United States (Le Monde, October 14). British intelligence agencies investigated his possible links in the UK after a period of employment in 2005 at the sensitive Rutherford Appleton Laboratories in Oxfordshire and trips to universities in London, Manchester, Durham, Edinburgh, and St. Andrews (Times, October 13). Investigations into the case continue, though there has been some level of tension within the French security establishment that the arrest may have been premature, potentially driving Dr. Hicheur's contacts in AQIM underground before they can be intercepted. As speculation around his "nuclear" connections died down, focus instead turned to the fact that a seemingly well integrated member of French society could be attracted to AQIM's violently anti-Western rhetoric. Unlike many of the other individuals incarcerated or otherwise detained in France on terrorism charges, Dr. Hicheur was a prominent and active member of the European scientific community, respected by his colleagues and part of a large, religious and well integrated family. In his home of Vienne, France, he was apparently held up as something of a local celebrity thanks to his impressive academic achievements. While the man described by colleagues as a "shy but brilliant young physicist" has reportedly confessed to some level of activity to French investigators, his family continues to protest his innocence, including his older brother Hashim who gave an interview to the academic journal Nature in which he stated that the high volume of email traffic back and forth with Algeria is normal for a family which retains deep connections to their homeland. He also stated that a recent large money transfer was intended for the purchase of land in Algeria, but was the likely cause of police interest in his brother (Nature, October 14). While the outcome of the case remains uncertain, the evidence of AQIM activity and the charge that a seemingly well-integrated member of French society could be so deeply involved in terrorist activity suggests that France remains at risk to al-Qaeda affiliated networks.

ΑΝΘΡΑΚΑΣ ΣΚΟΤΩΝΕΙ ΖΩΑ ΣΤΟΝ ΑΞΙΟ

Συναγερμός στη Νομαρχία Θεσσαλονίκης, μετά τα αλλεπάλληλα κρούσματα θανάτων ζώων από τον βάκιλο του άνθρακα που έχουν καταγραφεί στο Δέλτα του Αξιού τις τελευταίες ημέρες (Νοε 2009). Η Διεύθυνση Κτηνιατρικής της νομαρχίας πραγματοποιεί προληπτικούς εμβολιασμούς στα βοοειδή κάθε εξάμηνο και έχει ήδη

πληροφορήσει όλους τους κτηνοτρόφους της περιοχής για την κρισιμότητα της κατάστασης. Τα κρούσματα άνθρακα (*Bacillus anthracis*) έχουν διαγνωσθεί τα τελευταία χρόνια σε βοοειδή της περιοχής από τη Διεύθυνση Κτηνιατρικής ενώ παρατηρήθηκαν και θάνατοι αλόγων από άνθρακα. Σύμφωνα με τον Φώτη Δημητρακόπουλο, προϊστάμενο του αγροτικού κτηνιατρείου Μαλγάρων, περιστατικά μόλυνσης βοοειδών από άνθρακα εμφανίζονται πλέον περιστασιακά καθώς όλα τα ζώα εμβολιάζονται κάθε άνοιξη και φθινόπωρο. Ωστόσο, κίνδυνος για τους ανθρώπους υπάρχει μόνο αν αγγίξουν ένα πτώμα ζώου που έχει πεθάνει από άνθρακα, καθώς έτσι μεταδίδεται η αρρώστια. Σημειώνεται ότι το βακτήριο του άνθρακα σχηματίζει σπόρους προκειμένου να επιβιώσει σε αντίξοες συνθήκες. Με αυτή την μορφή γίνεται ανθεκτικό στη ζέστη και την ξηρασία και μπορεί να παραμείνει στο έδαφος για περισσότερα από 40 χρόνια. Όσον αφορά στην προέλευση του άνθρακα, κανείς από τους επιστήμονες δεν είναι σε θέση να απαντήσει, καθώς πρόκειται για βάκιλο που μεταφέρεται εύκολα.

IRAN STUDIED ADVANCED NUKE TRIGGER

A continuing U.N. analysis of Iran's nuclear capabilities suggests the Middle Eastern state might have tested explosive elements of a "two-point implosion" technology that could be used in producing smaller nuclear warheads, the London Guardian reported yesterday. The design, which uses explosives to simultaneously compress two ends of a football-shaped fissile "pit," is "a more elegant" means of detonating a nuclear bomb than primitive triggers that can rely on dozens of compression points, said one diplomat with knowledge of the undisclosed International Atomic Energy Agency report. If successfully incorporated, the technology would help produce warheads more easily fitted on missiles. Tehran insists its nuclear program is entirely peaceful and has defended its high-explosives research as a strictly civilian effort; still, the nation has failed to specify the nonmilitary purpose behind the studies. "It is breathtaking that Iran could be working on this sort of material," said one European official specializing in nuclear matters. "It's remarkable that, before perfecting step one, they are going straight to step four or five," added James Acton, an nuclear analyst at the Carnegie Endowment for International Peace. "To start with more sophisticated designs speak of [a] level of technical ambition that is surprising." It is

uncertain how Iran acquired the advanced implosion technology, a Western expert on Iran's nuclear program said: "Did [Abdul Qadeer] Khan (a Pakistani scientist who confessed in 2004 to running a nuclear smuggling ring) have access to this, or is it another player?" (Julian Borger, London Guardian, Nov. 5). Meanwhile, Iran has called on world powers to provide the entire supply of nuclear fuel for a medical research reactor in Tehran before it surrenders any of its own uranium under a proposed U.N. agreement, the Washington Post reported today. At talks early last month with the five permanent U.N. Security Council member nations and Germany, Iran tentatively agreed to terms intended to defer its ability to fuel a nuclear weapon with material produced from its low-enriched uranium stockpile. France, Russia and the United States indicated their support for a version of the proposal put forward by IAEA chief Mohamed ElBaradei, but Iran appeared to balk last week at the plan's call for the rapid transfer of much of its uranium. The debate over ElBaradei's proposal has "paralyzed the decision-making process in Tehran," said a high-level European diplomat. "It is a battle over who is tougher or who is more anti-American, and we are in a situation so ridiculous that (Iranian President Mahmoud) Ahmadinejad is in the middle." "We keep using the Russians to pass tough messages every day, saying: 'This is a good deal. Take it,'" the official added (Glenn Kessler, Washington Post, Nov. 6). Iran today indicated it would soon address the U.N. proposal in greater detail and seek additional negotiations with world powers, Agence France-Presse reported. "We have some more details which we have to give to the International Atomic Energy Agency," Iranian Foreign Minister Manouchehr Mottaki said, according to state media. "We have three options -- enrich the fuel ourselves, buy it directly or exchange our uranium for fuel," Mottaki said. "They (the IAEA and the major powers) have to choose from these options. Given the need of Iran to have the fuel, my view is that they will accept another round of discussions." Washington, though, indicated that ElBaradei's plan would not be subject to further negotiation. "As I have said, this is a pivotal moment for Iran, and we urge Iran to accept the agreement as proposed," U.S. Secretary of State Hillary Clinton said. "We will not alter it, and we will not wait forever" (Agence France-Presse I/Spacewar.com, Nov. 6). Possible options for saving the deal are under consideration, ElBaradei said in remarks published yesterday by the New York Times. “There are a lot of ideas,” he said. "One is to send the material -- Iran's uranium -- to a third country, which could be a friendly country to Iran, and it stays there. Park it in another state, then later bring in the fuel. The issue is to get it out, and so create the time and space to start building trust” (Roger Cohen, New York Times, Nov. 5). Elsewhere, the U.N. nuclear watchdog's 35-nation governing board is expected to rule later this month on whether Iran violated its safeguards commitments through its work on the recently disclosed and still-unfinished Qum uranium enrichment facility. A positive decision by the board might prompt its members to refer the matter to the U.N. Security Council for possible punitive action. The Security Council has already imposed three rounds of sanctions on Iran over its disputed nuclear activities (Kessler, Washington Post). An IAEA inspection team found no evidence of nuclear-weapon activities during a visit to the site late last month, ElBaradei said. The inspectors uncovered “nothing to be worried about,” he said. “The idea was to use it as a bunker under the mountain to protect things. It’s a hole in a mountain" (Cohen, New York Times). Satellite photos suggest that construction of the Qum facility began at some point between February 2006 and May 2007, the Washington-based Institute for Science and International Security concluded in an analysis (Institute for Science and International Security release, Nov. 5). In Washington, the U.S. Treasury Department yesterday imposed

new financial penalties on the Malaysian branch of an Iranian bank as well as the bank's manager, AFP reported. Iran's Bank Mellat "has facilitated the movement of millions of dollars for Iran's nuclear program," the department said in a statement. Bank Mellat Chairman Ali Divandari, the individual targeted by the latest sanctions, "plays a significant role" in the institution's "activities and decision-making process," according to the press release. The department's action was permitted by an executive order that "freezes the assets of designated proliferators of weapons of mass destruction and their supporters and prohibits U.S. persons from engaging in any transaction with them," the statement says. Treasury Undersecretary Stuart Levey said the bank is "an institution that has supported Iran's nuclear program in violation of U.N. Security Council resolutions" (Agence France-Presse II/Spacewar.com, Nov 5). In Prague, a proposal has moved forward in the Czech parliament to permit sales of equipment and services in support of Iran's Bushehr nuclear power plant, the Czech News Agency reported. The plant is scheduled to begin operation this year (Czech News Agency, Nov. 5).

RADIATION SENSORS INSTALLED ALONG U.S.-CANADIAN BORDER

The United States has finished fielding new equipment at all border crossings with Canada to aid in the detection of potential nuclear- and radiological-weapon materials, the U.S. Homeland Security Department announced yesterday. The radiation portal monitors are expected to scan all vehicles entering the United States for radiation sources that could include material in a nuclear device or a radiological "dirty bomb." When the sensors pick up radiation strong enough to indicate a potential hazard, border personnel are expected to investigate the source of the reading in accordance with official procedure. The installations were completed two months ahead of schedule by the Domestic Nuclear Detection Office and U.S. Customs and Border Protection, according to a press release. Radiation portal monitors are now able to scan all cargo and personal vehicles entering the United States from Canada; all mail entering the country from Mexico undergoes scanning in addition to cargo and personal vehicles. Roughly 98 percent of U.S.-bound sea cargo containers undergo radiation scanning. “Securing our northern border while facilitating legitimate travel and trade requires a strategic combination of technology, personnel and infrastructure,” Homeland Security Secretary Janet Napolitano said in a statement. “This technology enhances our capability to guard against terrorism and criminal threats while expediting border crossings for lawful trade and travel”.

CLANDESTINE LABS CAN BE HAZARDOUS TO RESPONDERS' HEALTH

Clandestine laboratories present huge hazards for all responders who encounter them. Police risk injury and illness responding to the crime scene or investigating suspicious activities. Firefighters expose themselves to hazardous materials as they put out fires or try to deal with contaminated sites. And EMS providers expose themselves to the

same risks trying to treat the responders and the perpetrators, who may have been adversely affected by the materials used and produced in these clandestine labs. Arthur Musselman, a hazardous materials specialist for the Georgia Police Academy, Drug Training Section, gave a presentation on clandestine laboratory safety and awareness for first responders at the 2009 EMS Expo/Firehouse Central/Enforcement Expo Southeast in Atlanta, Ga. The session was designed for responders who have little or no experience with clandestine laboratories but may, in the course of their work, encounter meth labs, bioterrorism and explosive labs in all forms. Clues Musselman said laboratories can be found virtually anywhere from shacks in the woods, to downtown hotel rooms, to trunks of automobiles to apartments in nice suburban areas. But there are clues that responders should keep in mind to help keep them safe. "If you walk up on something and you see dead squirrels, dead rabbits, dead birds, dead dogs, and hopefully not, dead people, those are clues right there that something is wrong," Musselman said. "If you see dead plants, dead trees, dead grass, dead anything, why are you still there? Back out until you can figure out what's going on and mobilize the resources needed to deal with the situation." In many hazmat situations, like rolled over tanker cars or industrial accidents, responders can roll up,

take out the binoculars and take a look at the placard to figure out what they're dealing with, Musselman. "We don't have that luxury with a clandestine lab," he said. Responders should also bristle with attention at strange odors or noises, or lack of, which might be clues of clandestine labs. "Nerve gases kill off insect life very quickly," Musselman said. "So if you're going along and you hear crickets and bugs, and then all of a sudden, stop hearing them as you get closer, that's an unnatural condition that you should pay attention to." Unexplained and sudden rashes, breathing difficulty and welts are obvious signs of a problem, Musselman said, noting that the goal is to avoid those kinds of things from happening in the first place. Many clandestine labs are cluttered with seemingly common household goods, like paint thinner, cleaning agents and bleach, Musselman said. The quantity and variety should serve as indicators that responders might not be dealing with just a cluttered house, rather a lab designed to produce harmful products or drugs.

Entering clandestine labs

Clandestine labs are used to produce drugs, biological and chemical agents and explosives and can be established virtually anywhere by anyone with a mission to produce something that is otherwise controlled or illegal, Musselman said. "There are lots of brilliant, and not so brilliant, people out there with the capabilities of producing a variety of very dangerous substances," he said. Upon entering a suspected lab, Musselman said responders should be looking for pressure cookers and crock pots, lots of glassware of all varieties, ventilation systems, refrigeration and cooling systems as well as raw ingredients. Also, many labs have decontamination systems and personal protective gear of widely ranging sophistication, from a kiddy pool and garden hose to hazmat suits, and cat litter filtration systems to blower systems with outside air handlers. "Be very careful when you go into these lab sites," Musselman said. "If you see anything suspicious, back out. It could be an explosive lab, it could be a drug lab, it could be a chem lab." Responders should also keep an eye open for literature indicating what the suspects might be up to, he said. Many clandestine labs will have things like "The Anarchists' Cookbook," lying around, or might have Jihadists' or White Supremacists' literature Musselman said, noting that all lab folks have a reason for establishing the clandestine operations in the first place. Figuring out what that is might help determine what hazards are being faced. The unknown nature of the labs is the biggest danger of clandestine operations, he said, noting that the suspects could be cooking up agents for bioterrorist attacks or chemical agent attacks, or making straight up explosives for virtually any kind of attack.

Considering the scene

Taking the time to carefully consider the scene and the hazards is critical to responder safety, Musselman said. Using the right protection, like respirators or SCBAs and the most appropriate PPE for the hazard is equally important. And, whenever in doubt, stay out and call for the experts, Musselman said. "If it's the weekend, and it's not a life threatening situation, the best solution is to just secure the scene." He said it's not worth the risk to go in unnecessarily. Musselman also warned that the hazardous byproducts of clandestine laboratories can show up anywhere, from remote acreage, to hotel waste water systems, to city sewage systems and drains, which present a whole different set of challenges and hazards. "For every one pound of crystal meth produced, there's five to seven pounds of hazardous waste created," Musselman said. "That's going somewhere." Above all else, the take-away that Musselman tried to convey is to stay out when in doubt and call for expert help whenever necessary. "We'd rather come out and check and help out than let someone get hurt or killed," he said.

SOLDIERS NEARLY KILLED WITH MILITARY'S BIOTERRORISM VACCINE

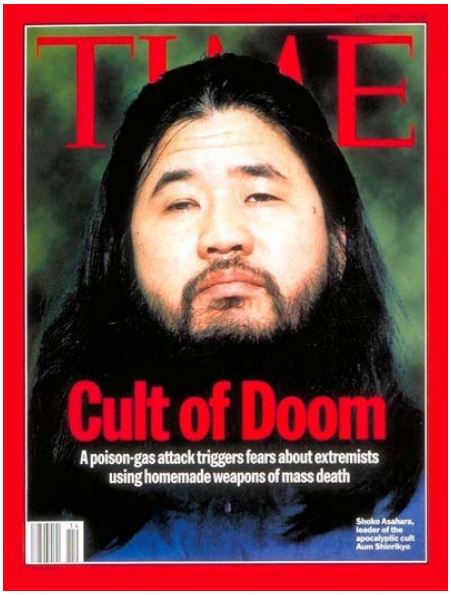
Approximately 200 soldiers have suffered from serious and even life-threatening complications from the government-mandated smallpox vaccine, and one has even died. Starting in 2002, fears over a bioterrorist attack have led the U.S. government to require that all of its military servicepeople receive vaccination against a variety of diseases before deployment, including anthrax and smallpox. An estimated 1.7 million have been vaccinated against smallpox since then. Yet in a number of cases,

the vaccine has led to severe complications such as inflammations of the brain or heart. In 2003, two expert panels concluded that Army Specialist Rachel Ray died in part due to complications from the deployment vaccines that she had been given. "The reality is, we're never going to have zero risk on a vaccine," said Dr. Michael Kilpatrick of the Military Health System. "There's always going to be that individual that has some untoward event that would occur." Awareness of the risks over the smallpox vaccine has prevented the government from requiring vaccination of civilians. One potential side effect is infection with the virus used in the vaccine, a condition known as progressive vaccinia. Back when smallpox vaccination was widespread, the infection had a 15 percent fatality rate. In a recent case, Lance Cpl. Cory Belken began to suffer from a persistent headache and unusual sleepiness one week after receiving the smallpox vaccine. He was diagnosed with acute myelogenous leukemia, which was destroying his circulatory system, and was immediately placed on chemotherapy. The cancer treatment destroyed his immune system, leading to progressive vaccinia and no fewer than two infections with antibiotic-resistant bacteria. He broke out in a rash, had spreading vaccinia lesions all over his body, became delirious with a fever of 104.6 degrees, and began to suffer from organ failure. Treating Belken required 30 times the dose of Vaccinia Immune Globulin that the Centers for Disease Control and Prevention has previously assumed would be needed for a single person. Belken's family said that the leukemia would have been enough for their family to deal with, without vaccine complications on top of it. "I think it's a big chance they're taking giving them the shots," his mother said.

DEATH SENTENCES FOR 2 EX-AUM MEMBERS

The Supreme Court on Friday upheld lower court rulings that sentenced two former members of the AUM Shinrikyo religious cult to death for their involvement in the deadly 1995 sarin nerve gas attack on the Tokyo subway system that killed 12 people and left thousands ill. The top court's second petty bench turned down appeals from Toru Toyoda, 41, and Kenichi Hirose, 45, against the sentences by the Tokyo High Court in 2004. Under the Code of Criminal Procedure, Toyoda and Hirose can still file an objection with the highest court against its decision. But it is limited to technicalities such as an error in the wording. Friday's decision is expected to eventually become final as the top court has rarely accepted such an objection. This would bring the number of former AUM members on death row to eight for their involvement in a series of crimes. Among them is AUM founder Shoko Asahara, 54, whose real name is Chizuo Matsumoto. Death penalties would stand for four of the five former AUM members who were convicted of actually dispersing the sarin gas in the subway system. The only exception is former AUM physician Ikuo Hayashi, 62, who is currently serving a life sentence in prison. Prosecutors did not seek the death penalty for Hayashi as he turned himself in to police investigators. In Friday's decision, Justice Yukio Takeuchi, the presiding judge in the case, said the sarin attack

on the subway system constituted "organized and premeditated acts of indiscriminate mass murder" and the crime was "extremely cruel and inhumane." The death penalty is inevitable for the two men even though they committed the crime under instructions from higher cult members, the justice said. Both Toyoda and Hirose had sought lighter penalties, arguing they were victims of Asahara's mind control. Court findings show that Toyoda and Hirose, in conspiracy with Asahara and senior AUM members, disseminated the sarin nerve gas on the Hibiya and Marunouchi subway lines on March 20, 1995, killing 12 passengers and subway staffers. Toyoda was also found guilty of conspiring with other AUM members to send a parcel bomb to then Tokyo Gov. Yukio Aoshima by mail in May The bomb went off and seriously injured a metropolitan government official. In July 2000, the Tokyo District Court sentenced both Toyoda and Hirose to death -- a decision upheld by the Tokyo High Court in July 2004. AUM Shinrikyo renamed itself Aleph in January 2000. In 2007, a senior AUM member and his followers left Aleph to launch a splinter group called Hikari no Wa (Circle of Rainbow Light). Asahara and many of his followers were responsible for a series of crimes that include the sarin attack on the subway system and another on a residential area in Matsumoto, Nagano Prefecture, in 1994. The Matsumoto sarin attack claimed the lives of eight people and left hundreds ill. Asahara and his followers were also convicted of killing a Yokohama- based anti-AUM lawyer, his wife and their son in 1989.



CLOROX TO HALT USE OF CHLORINE AT BLEACH PRODUCTION SITES

Clorox Co. said today that it would begin phasing out use of chlorine in the production of bleach. Chlorine is a known chemical weapons agent that was used during World War I and more recently by insurgents in Iraq. Observers have expressed concern that would-be terrorists might target U.S. industrial plants that employ the material. Beginning with a facility in California, Clorox over the next several years will convert seven plants to use high-strength bleach rather than chlorine in the manufacturing of household bleach.

"This decision was driven by our commitment to strengthen our operations and add another layer of security," Clorox Chairman and CEO Don Knauss said in a press release (Clorox Co. release/Marketwire, Nov. 2). The environmental organization Greenpeace lauded the decision. "Once the conversion is completed at all seven U.S. Clorox plants, the company will have eliminated catastrophic risks from chlorine gas to 13.6 million Americans living downwind of its facilities," according to a

Greenpeace press release. "This conversion will also eliminate equally disastrous risks posed by the transport of 90-ton rail cars of chlorine gas". The Clorox move could strengthen the case for House legislation set for a vote Wednesday that would require "highest-risk" chemical plants to shift away from using chlorine when feasible, Greenpeace said (Greenpeace release, Nov. 2).

NEWS FROM

VIGILANT GUARD NEW YORK 2009

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The largest military/civilian disaster response exercise ever held in New York brought more than 1,300 troops from five states to the Niagara Frontier the first week of November, 2009. The drill, part of the Vigilant Guard exercise series run by United States Northern Command and National Guard Bureau, gives National Guard Forces

the chance to practice emergency response operations with local, state, regional and federal partners against both natural disasters and terrorist attack.

MYSTERIOUS FLU IN UKRAINE

Nearly three quarters of the Ukrainian population have flu-like symptoms of the mysterious virus and the government has ordered more than 650,000 doses of anti-viral drug Tamiflu. Digital Journal reported at the end of October that more than 40,000 Ukrainians contracted a serious virus but now more than three quarters (478,456) of Ukrainians have contracted the flu-like symptoms, according to Radio Netherlands. As Recombinomics notes, the total number of deaths has been reported to be between 81 and 100 with more than 25,000 hospitalized. The mysterious flu strain has caused a variety of theories such as biological warfare. Jose Mosse, who is a former microbiologist for the Israeli intelligence agency Mossad, called into a radio talk show warning about a biological weapon that would occur in Ukraine by Baxter International. Other theories reported have been stories of people seeing light aircrafts spraying an unidentified substance over Kiev, the capital of Ukraine. However, this specific theory has been denied by the government of Ukraine. The Prime Minister of Ukraine, Yulia Tymoshenko, recently said, according to Inter Fax, that the World Health Organization, "The WHO noted that the measures we are currently taking are the most appropriate for the situation that re being taken in the world. This applies both to the actions of local authorities in all the regions and those of the central authorities." Nevertheless, the health minister Vasyl Kniazevych told a radio station that he does think it is the H1N1 Swine Flu but tests of the mysterious virus will take several weeks to find conclusive evidence of the specific influenza.

recombinomics
elegant evolution

DISINFECTANT THAT QUICKLY WIPES OUT SWINE FLU, ANTHRAX SPORES

Disinfectant that quickly wipes out swine flu, anthrax spores, is being tested at NJIT [New Jersey Institute of Technology] "A disinfectant [Ygiene] that quickly eradicates organisms from the swine flu [sic] to deadly anthrax spores is being tested by scientists at the New Jersey Institute of Technology [NJIT] in Newark, a report in NorthJersey.com said. A scientist told the newspaper that Ygiene wiped out the H1N1 virus from surfaces in 20 seconds. BioNeutral, the chemical specialty company based at NJIT, is submitting Ygiene to the federal Environmental Protection Agency for final testing against at least 12 microbes, including those that cause tuberculosis."

SCIENTISTS ANNOUNCE POSSIBLE TREATMENT FOR DEADLY VIRUS

A team of Australian and U.S. scientists believe they have found an antibody that could protect humans from the deadly Hendra virus, Australia's Northern Miner reported yesterday. Researchers with Australia's Commonwealth Scientific and Industrial Research Organization have developed a treatment that appears to block infection in people who have come into contact with the virus. The U.S. Homeland Security Department has been reported to consider Hendra a possible bioterrorism agent, due to the disease's lethality. In the seven known occurrences of human Hendra infection, there has been a **57 percent fatality** rate. Transmissions of the virus thus far have only been known to occur from bats to horses and from horses to humans. All cases have reportedly occurred in Queensland, Australia. "The idea is to eventually take people ... who've been potentially exposed to a horse that's infected with Hendra virus and to provide therapy to those people," said lead researcher Deborah Middleton. She said the Hendra antibody would be given to people during the virus' initial replication process when it is still trying to establish a presence in the body (Trudy Brown, Northern Miner, Nov. 10).

UN INSPECTORS TO EXAMINE MUNITIONS FOUND IN AUSTRALIA

A stockpile of apparently forgotten munitions found near Columboola, Australia, are not expected to be moved until they have been examined and cleared for disposal by U.N. weapons inspectors, the Toowoomba Chronicle reported yesterday. Australian Defense Department officials talked with Western Downs Regional Council representatives and emergency personnel Tuesday on the process for dealing with the 144 undetonated 105mm shells. The munitions, at least three filled with **mustard H blister agent,** were discovered in August during a survey by a mining company at the

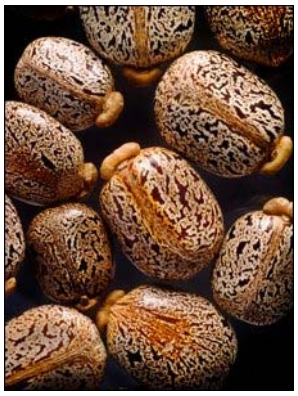
site of a former U.S. military weapons facility. The corroded munitions were unearthed by specially trained workers. The shells have been placed in special containers and put into storage. Australian Defense Department official Colin Trinder said the munitions did not have any fuses and so could not be accidentally set off. "We take an extremely precautionary approach to dealing with these things," Trinder said. Defense officials are now figuring out how to destroy the shells. Australia has never before carried out a chemical weapons destruction program of this sort. One avenue being considered is transporting U.S. disposal technology to Australia. It is believed that the munitions would be eliminated by June 2010 (Stuart Cumming, Toowoomba Chronicle/Finda.com, Nov. 11).

THREE MORE ILLNESSES ADDED TO AGENT ORANGE LIST

Veterans Administration officials are alerting Vietnam War veterans that they've added three illnesses to those associated with the chemical weapon Agent Orange. **Cell B leukemias, Parkinson's disease and ischemic heart disease** have been added to the list of presumed illnesses associated with those veterans exposed to sprayed Agent Orange, said Rock Larson, Wood County Veterans Service officer. The presumption simplifies and speeds up the application process for benefits. Any veteran who stepped foot in Vietnam during the war is presumed to have exposure to Agent Orange, Larson said. Some units stationed in the demilitarized zone in Korea during the late 1960s also are presumed to be exposed. The change includes any Navy veterans who were on inland waterways where there was fighting, Larson said. "If they were there and have these diseases, we should talk," he said. If veterans who served in Vietnam have died of any of these diseases, the death would be considered service connected and spouses and children might qualify for death benefits. Regardless of whether they have a disability or financial condition, Vietnam War veterans have been guaranteed enrollment to Veteran Affairs health care because of the presumed exposure to Agent Orange. This allows the veterans to have annual physicals at VA hospitals to screen for diseases related to Agent Orange.

RICIN 'ANTIDOTE' TO BE PRODUCED

An anti-toxin that protects against ricin poisoning is to move into production for the first time. It is the result of eight years of work by researchers at the Defence Science and Technology Laboratory based at Porton Down in Wiltshire. The antidote can protect against death up to 24 hours after exposure, according to Dr Jane Holley from DSTL. Security experts say ricin - roughly 1,000 times more toxic than cyanide - could be used in a bio-terror attack. Dr Holley told BBC News: "In the past there has been lots of research carried out using different methods. But this is the first [anti-toxin] that has been moved into production. The principal scientist in biomedical sciences at DSTL added: "It is anticipated that a product will be available for



use in the next couple of years." Ricin is extracted from castor beans, which are processed throughout the world to make castor oil. The toxin is part of the waste "mash" produced when castor oil is made. It can cause harm if injected, swallowed or inhaled. A tiny quantity can be lethal, but the amount needed to kill depends on the route of administration. A combination of pulmonary, liver, renal and immunological failure can lead to death, though people can recover from exposure.In recent years, the perceived threat of bioterrorism has increased. Although the anti-toxin developed at Porton Down was initially intended for use by the military, DSTL scientists are investigating its potential use in a civilian environment. Production of the anti-toxin involves immunising sheep with an inactive form of ricin, which results in the production of antibodies. These are proteins used by the immune system to neutralise harmful substances. The antibodies are then harvested from the sheep to produce a freeze-dried product. This is reconstituted with water for injection into the body. Dr Holley said that although the anti-toxin is ready to be manufactured, full licensing is likely to take about five years.

Dissident murder

Professor Alastair Hay, a toxicologist at the University of Leeds described ricin as "a very potent poison". "Having an anti-toxin in the armoury would be very helpful for anyone who has to deal with possible ricin poisoning," he told BBC News. Ricin was the poison used for the infamous murder of Bulgarian dissident Georgi Markov in September 1978. Mr Markov, who was an avowed critic of Bulgaria's communist regime, was waiting at a bus stop near Waterloo Bridge, London, when a stranger jabbed him in the leg with an umbrella. The rigged umbrella injected a tiny ricin-filled pellet into Mr Markov's calf. He was admitted to hospital that evening but died three days later.

In 2005, an Algerian man, Kamel Bourgass (picture), was convicted of plotting to use poisons - including ricin - to cause disruption, fear or injury. He was arrested after anti-terrorist squad officers found a suspected poisons laboratory in a north London flat in January 2003, though the toxin itself was not found. There have also been incidents in the US; in 2004, an alert was triggered after tests identified ricin in a Senate office building mailroom. The development of the ricin anti-toxin follows on from work to develop an "antidote" for poisoning with botulinum toxin. "Although there had been small-scale batches of anti-toxins for botulinum available in hospitals, for military use we needed a large capability in case it was used as a biological weapon. We developed an anti-toxin against all seven 'serotypes' of botulinum toxin," Dr Holley explained. Serotypes are structurally distinct forms of the toxin. Dr Holley added: "This has been available for several years now, has been made to good manufacturing practice and is undergoing full licensing studies at the moment." Research has also been carried out into a vaccine against ricin poisoning. While an anti-toxin works by mopping up the poison once it is in the body, a vaccine would

prime the body for exposure to the agent. Its effectiveness would depend in part on the period of time between administration of the vaccine and exposure to the agent.

NEW DEVICE MAY MINIMISE LOSS OF LIVES IN DISASTER ZONES

Researchers have developed a device that could become a godsend for paramedics and may help save many lives in disaster zones. The very first task of paramedics at the site of a terror attack or a collision is to assess who needs immediate care. But blood haemorrhaging can obscure damage, and the gruesome mess means paramedics can't always determine who should be treated first. 'LifeFlow,' a technology being developed by Tel Aviv University (TAU) researchers is based on a cutting-edge algorithm which, when applied to a computer-controlled I.V. drip, can accurately assess **how much blood the victim has been left with**. The device then administers the proper amount and type of I.V. fluid, permitting the paramedic to move on to the next disaster victim with fewer worries – and more confidence that the first victim will remain stable before arriving at the emergency room. 'It's practically impossible for a well-trained paramedic to assess an individual's loss of blood, especially at a scene where there are already mass casualties,' says Ofer Barnea, professor at the TAU department of biomedical engineering. 'When paramedics approach a disaster scene, they have little to no idea how much blood a person has lost. But this can be a big medical mistake, since fluid overload can have a grave outcome,' adds Barnea. **It's good for soldiers in Iraq and Afghanistan, and it's good for hospitals in developing nations**,' says Barnea, 'especially when you have to take care of a lot of wounded people at once.'

'DIRTY TIMEBOMB' TICKING IN RUSSIAN NUCLEAR DUMP THREATENS EUROPE

20,000 discarded uranium fuel rods stored in the Arctic Circle are corroding. The possible result? Detonation of a massive radioactive bomb experts say could rival the 1986 Chernobyl disaster. A decaying Russian nuclear dump inside the Arctic Circle is threatening to catch fire or explode, turning it into a "dirty bomb" that could impact the whole of northern Europe, including the British Isles. Experts are warning that sea water and intense cold are corroding a storage facility at Andreeva Bay, on the Kola Peninsula near Murmansk. It contains more than 20,000 discarded fuel rods from nuclear submarines and some nuclear-powered icebreakers. A Norwegian environmental group, Bellona, says it has obtained a copy of a secret report by the Russian nuclear agency, Rosatom, which speaks of an "uncontrolled nuclear reaction". John Large, an independent British nuclear consultant who has visited the site, told The Independent on Sunday: "The nuclear rods are fixed to the roof and encased in metal to keep them apart and prevent any reactions from occurring. However, sea water has eroded them at their base, and they are falling to the floor of

the tanks, where inches of saltwater have collected. "This water will begin to corrode the rods, a reaction that releases hydrogen, a gas that is highly explosive and could be ignited by any spark. When another rod falls to the floor and generates such a spark, an enormous explosion could occur, scattering radioactive material for hundreds of kilometres." Mr Large, who was decorated by Russia's President Vladimir Putin for his role in the salvage operation that retrieved nuclear material from the Kursk submarine in 2000, added: "This wouldn't be a thermonuclear or atomic explosion, as in a bomb, but the outcome is just as bad. Remember Chernobyl? If you had the right weather conditions and wind pattern, this would mean a radioactive cloud drifting over the UK." The three storage tanks contain more than 32 tons of radioactive material. But the Kola Peninsula is littered with relics of Soviet nuclear facilities, housing more than 100 tons of nuclear waste - the largest concentration in the world. Experts predict that a major explosion at Andreeva Bay could destroy all life in a 32-mile radius, including Murmansk and a sliver of Norway, whose border is only 28 miles away. But a much wider area of Norway, north-west Russia and Finland would be rendered uninhabitable for at least 20 years, and huge quantities of radioactive material would be dumped into the Barents Sea. "In the best case a small, limited explosion in just one of the stored rods could lead to radioactive contamination in a 5km radius," Aleksandr Nikitin, a Russian former submarine officer and nuclear safety inspector turned environmental activist, told the Norwegian newspaper Aftenposten. "In the worst case, such a single explosion could cause the entire tank facility to explode. We have no calculations for what that could lead to." Mr Nikitin, whose work for Bellona led to continuing treason charges in Russia, added: "We are sitting on a powder keg with a burning fuse, and we can only guess about the length of the fuse." Nils Bohmer, nuclear physicist and head of Bellona's Russian division, told the newspaper: "It will at least, at a careful estimate, hit northern Europe. There are enormous amounts of radioactivity stored in these tanks." Other activists have voiced concern about the security of stored nuclear waste in the Kola Peninsula, amid reports that some is left outside in barrels, protected by only a link fence and a couple of guards. Washington-based GlobalSecurity.org reported that in 1993 about 1.8kg of enriched uranium was stolen from the Andreeva Guba fuel storage area. Although the material was quickly recovered, the fact that some of the uranium is enriched to between 30 and 40 per cent, much higher than the 2 to 3 per cent used in civil nuclear reactors, could make it tempting to terrorists seeking to make a "dirty bomb". Apart from the decay at the Andreeva Bay facility, said Ben Ayliffe, senior climate and energy campaigner at Greenpeace UK, "security is so lax that almost anyone who wants to can just walk in. It's like Homer Simpson meets Dad's Army." As the 1986 Chernobyl disaster showed, drifting atmospheric radiation can contaminate crops and water supplies more than 1,000 miles from the site of the explosion. In the world's worst civilian nuclear incident, the four explosions that ripped through the power plant in what is now eastern Ukraine resulted in the dispersal of a radioactive cloud containing at least 100 times as much radiation as was released by the combined effect of the atomic bombs dropped on Hiroshima and Nagasaki. Although only three people were killed by the Chernobyl blast, it has been estimated that around 100,000 people have since died from cancers caused by exposure to radiation, with thyroid cancers increasing by 88.5 per cent. A further 300,000 people have developed non-fatal tumours even though

half a million people were evacuated immediately after the accident. The economic and social effects remain devastating, despite large-scale international assistance.

Many industries have collapsed, and 1.4 million acres of prime agricultural land and forest destroyed by the explosion are still unusable. Residents are banned from entering a zone some 20 miles around the site, yet hundreds of elderly people have ignored government restrictions and gone back to their homes in surrounding villages, where they raise animals and eat fruits and berries from the radiation-soaked land. But experts using the Chernobyl "radioactive release" to predict the likely effects of a disaster on the Kola Peninsula point out that Britain and the rest of Europe escaped remarkably lightly. The 1986 explosion occurred on a still summer night sending radioactive particles straight upwards for the most part, until they encountered winds in the upper atmosphere. Although the radiation was widely dispersed, there was little rainfall in the immediate area, or across Europe, in the following week. The only area of Britain where rain brought the radiation to earth is relatively lightly populated: north Wales, parts of Cumbria and south-western Scotland. Care still has to be taken with meat from the affected area, but there are no reliable statistics that show any impact on human health in Britain. Another Chernobyl-type meltdown, this time in the Arctic, could have much more far-reaching effects. The worst case would be widespread fallout caused by rain in a densely populated area, causing untold social and economic disruption beyond the threat to life. Even without a catastrophic explosion, contamination from the Kola Peninsula facility is spreading. The region is outstandingly beautiful, with jutting cliffs, snow-covered peaks and deep fjords. The soil is rich in minerals, the rivers swim with Atlantic salmon, and the land is home to reindeer and their nomadic Saami herders. But Andreeva Bay is already devoid of

marine life, and much of the area around it, a landscape of rusting submarine hulks, cranes, workshops and a disused power station, now stands empty. A rupture or fire in the storage tanks would spread radiation further, probably forcing the evacuation of the nearest town, Zaozersk, which is less than four miles away. But Andreeva Bay is merely one of five naval bases on the Kola Peninsula, a testament to the era when the Soviet Union vied for supremacy with the US and nuclear capability, both in weapons and energy, was seen as the means to that end. The ice-free harbours of the White Sea have always been the base of the Northern Fleet, which has two-thirds of the navy's nuclear-powered vessels. Its submarines, which can circle the globe without surfacing or refuelling, were a source of pride in superpower days. But with this came an attitude of careless arrogance towards the environment - apart from the effects on land, many spent nuclear fuel rods were dumped into the Kola and Barents seas - and the region is now paying the price. In the economic crisis that followed the collapse of communism and the breakup of the Soviet Union, the nuclear submarine fleet and its support structure were hit by drastic cutbacks. The decommissioning of submarines rapidly became a major national problem, with suitable storage facilities filled to capacity and little money to carry out the necessary expansion. The fuel rods at Andreeva Bay first began to leak radioactive material in 1982, when they were stored in flimsy navy warehouses. In a precursor of the emergency action taken at Chernobyl, a startled government hastily erected three massive concrete tanks filled with metal pipes in which the rods could be safely stored. These facilities were intended only as a provisional measure, to last no more than five years, yet they have now been housing potentially lethal uranium for more than two decades. The problem has been compounded by confusion over who is directly responsible for the area: the nuclear agency Rosatom, which controls all Russian nuclear sites, or the defence ministry, which has authority over military bases. President Putin's administration denied Norwegian claims that the tanks at Andreeva Bay were unstable, claiming that the nuclear waste posed no environmental hazard. This was echoed by Rosatom's deputy head, Andrei Malyshev, who declared that "the possibility of a nuclear event that is significant in terms of safety is excluded". Mindful, however, that the Soviet authorities sought to deny there had been an accident at Chernobyl, Russia's neighbours have been pressing for action to tackle contamination in the Kola Peninsula for years. In the 1990s European leaders began efforts to help secure the region. A 2003 agreement between Sweden, France and Russia pledged more than £30m, a deal described by the Swedish Foreign Minister as "a historic event". But little has happened since, partly due to the enormous costs. It is estimated that a clean-up of the Kola Peninsula, either by moving radioactive material to permanent storage facilities or transporting it to a reprocessing plant, will cost around £2.2bn. Although Britain, the EU and the US have offered help, with Norway saying last month that it would pay to decommission two nuclear submarines, Russia will still end up footing most of the bill. It also faces the hazardous task of shifting the waste to where it can be dealt with, making Britain's problems in handling waste from old, and possibly new, nuclear plants seem minor. After the radioactive material has been extracted from the dumps by remote-controlled vehicles, it will have to be transported in sealed containers down the coast to Murmansk, where the government hopes to construct new long-term storage facilities. Material which can be reprocessed will be carried in trains hundreds of miles to Mayak, in the heart of the Ural mountains. The residents of the city, who face the prospect of having tons of highly dangerous material passing through for several years, formally learned of the proposals only last autumn. The latest controversy shows, however, that **doing nothing is no longer an option**. Mr

Ayliffe said: "The Andreeva Bay nuclear dump is incredibly dangerous... a disaster waiting to happen that underlines the intractable problem of how to deal with the thousands of tons of highly toxic waste created by nuclear power."

Danger Zone: What will happen if there is an explosion
Best scenario: a limited explosion of **one rod** could **contaminate** a three-mile radius around Andreeva Bay. Wildlife could die out. Worst scenario: the entire facility explodes, radiation could destroy life in a 32-mile radius and make areas of Norway, Finland and Russia uninhabitable. Contamination could reach the UK and beyond.

The threat within the tanks
7,000 nuclear fuel rods are stored in each tank. Each rod hangs separately, encased in a metal tube to prevent any uncontrolled reaction. Seawater enters through cracks in the tank and erodes the rods, causing them to fall into the salt water that has collected in the tube. Hydrogen is released when the rods corrode. A spark from another falling rod could ignite this highly explosive gas, setting off an "uncontrolled explosion".

Dirty bombs: the terror threat posed by nuclear materials
Unlike a nuclear bomb, which requires costly precision engineering, the construction of a "dirty bomb" requires only the combination of radioactive material with a standard explosive, which serves to scatter the particles. Few people might be killed in the explosion, but the disruption caused by contamination in a city centre would be huge. Authorities in several countries claim to have foiled such plots by terrorists. In 1995 Russian police said they had prevented Chechen separatists from detonating radioactive isotopes wrapped in explosives in a Moscow park. Londoner Dhiren Barot, jailed in 2004 for planning to detonate dirty bombs in underground car parks in London and New York, sought radioactive material from hospital equipment such as X-ray machines.

ANTI-TERROR ANTIBODIES

European scientists have developed a method to detect potential biological warfare agents in food. "A possible scenario for a bioterrorism attack could involve food contamination with protein toxins" A possible scenario for a bioterrorism attack could involve food contamination with protein toxins, such as ricin and botulinum neurotoxins, says Brigitte Dorner, researcher into microbial toxins, of the Robert Koch Institute in Berlin. However, until now detecting toxins in such complex samples has been difficult. Dorner and colleagues in Germany and Switzerland have devised a highly sensitive system that can detect trace amounts of the toxins in foods such as milk, baby food and yoghurt. Protein toxins are detected most effectively using immunological techniques, since antibodies bind to their targets with very high affinity. However, current methods for raising antibodies against toxins without causing animal poisoning are time consuming and labour intensive. Dorner and coworkers have used an alternative technique, immobilising the toxins on microbeads to reduce their toxicity, allowing the team to generate antibodies quickly in vivo. The researchers then modified a commercially available system to analyse complex food samples using the antibodies. In **Luminex xMAP technology** antibodies are covalently coupled to beads embedded with dyes that generate signals in response to

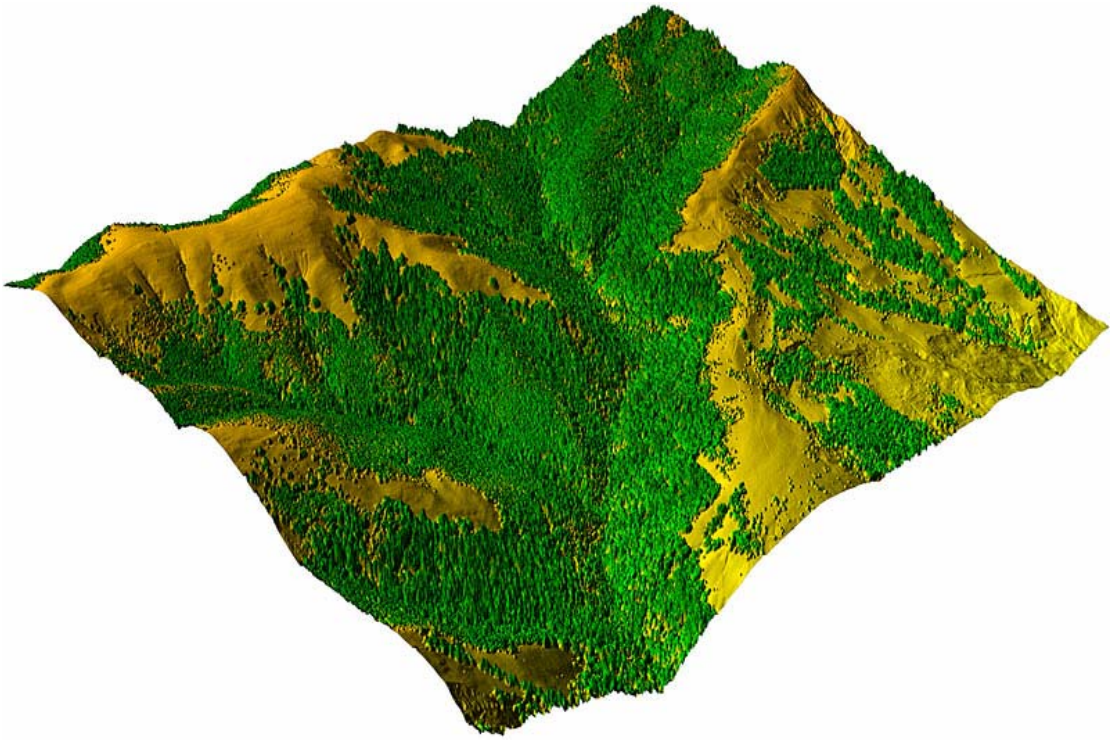
different targets - in this case the toxins. Dorner explains: 'We further developed the Luminex xMAP technology to incorporate magnetic beads to allow us to analyse complex matrices.' The magnetic property means that the beads can be easily removed from food samples and can undergo automated washings. This makes toxin detection in foods possible where many other technologies have failed due to interference of sample components with binding agents or technical equipment. "Using the bead array, the researchers simultaneously detected trace amounts of five toxins, including ricin and botulinum neurotoxins, in food at lower concentrations than commercially available systems" Dorner says the technique has very good sensitivity. 'We are able to detect toxins down to a level of picograms per millilitre which, as far as I know, is superior to any limit published for other multiplex detection systems,' she says. Phillipe Thullier from the Research Centre for Armed Forces' Health in La Tronche, France, is an expert in the field of immunological techniques for toxin detection and neutralisation. He comments: 'The sensitivities are quite unique and to a large extent are made possible by the beads. In the future,' he adds, 'we could see more of these nano objects in biology, used for several purposes.' Dorner anticipates a possible commercial application for the technique. 'A further step would be introduction of a mobile device using the bead array,' she says, 'and a very nice use of the technique would be large scale screening of the food supply chain.'

SATELLITES USED TO PREDICT INFECTIOUS DISEASE OUTBREAKS

From avian flu to cholera, infectious diseases may not be able to hide for long. Some researchers have their sights trained on predicting their every move with detailed satellite data. Rather than searching for weird weather or enemy missiles, some satellites are helping researchers to track—and predict—the spread of deadly diseases.

With the pandemic spread of H1N1 swine flu and the continued advance of the H5N1 avian flu, scientists are anxious to better predict the spread of infectious diseases and are looking for new tools wherever they might be—even if that's hundreds of miles in the sky. "Ideally we could predict conditions that would result in some of these major outbreaks of cholera, malaria, even avian flu," says Tim Ford of the University of New England in Biddeford, Maine. Ford and a group of experts have co-authored a perspective paper (pdf), due out next month in Emerging Infectious Diseases that proposes making use of environmental data—tracked via satellite—to predict disease outbreaks. "As climate changes, and even with many of our weather patterns, [it] directly affects the distribution of disease," Ford says. Hantavirus, the pulmonary disease spread by rodents, for example, has been linked to changes in precipitation. With more rainfall, vegetation increases, which then fuels rodent populations. And

pinpointing an area as relevant conditions emerge — before an outbreak starts — buys precious time to spread public health messages. Satellite imaging can also help warn of cholera outbreaks, which are predicted to worsen with climate change. The satellites provide information about water surface temperatures, which are key to the spread of this waterborne disease. One study found that giving people simple preventative instructions, such as filtering water through a sari cloth, reduced cholera-related deaths by an estimated 50 percent in some areas. Remote data have already been used to map the avian flu in Asia. Xiangming Xiao, associate director of the University of Oklahoma's Center for Spatial Analysis in Norman, has been tracking likely outbreaks of this highly pathogenic flu by looking for key habitat and weather changes. The domestic duck—determined to be the main carrier of the disease—is a common inhabitant of Southeast Asia's rice paddies, and the movement of migratory birds—a secondary carrier—could be predicted based on temperatures. So using both land-use and temperature information from satellites, Xiao and his team could track the spread of the flu by estimating where the birds would be. If visual data from satellites is combined with information from radar and LiDAR, (light detecting and ranging, which provides laser-measured data about 3-D contours), Xiao explains, researchers can really hone prediction of some diseases down to a tree line. "You can look at… the transition of pasture grassland to forests," he says, habitats which determine the range of deer. "And this has very important implications for tick-borne diseases, like Lyme disease." Much of the satellite work, however, still relies on clear skies. And all of it has been dependent on quality information from willing providers, such as NASA and its Earth Observing System, the availability of which researchers hope will continue in the future. Even with the clearest NASA images, though, current methods are far from perfect. They employ complex models and incomplete information, risking false alarms and missed outbreaks. The satellite data are still just



a portion of the equation. They allow researchers to start "standing back and looking at the picture from a distance," Ford says. He and others are heavily reliant on ground-based measurements and observations. Xiao notes that, "the in situ observations are still very, very important. So the key is to combine those together—that's a real challenge." To make the predictions as precise as possible takes understanding the ecology not just of the place being studied, but also of the disease and the human population. "You see tremendous variations in different areas," says Ford of how diseases behave, and "in some sense, [that is due to] just difference in human behavior." Judging the severity of avian flu's spread from satellite imaging, for instance, requires knowing how likely certain areas are to keep domestic chickens and ducks—a practice more common in countries that consume more poultry, Xiao explains. And getting precise poultry production statistics can be a real challenge, he notes, as record-keeping can vary greatly among countries and regions. But Ford thinks that even with these limitations, "There's no reason at all we shouldn't be able to say, 'This summer is going to be a bad hantavirus year' or 'This season will likely have a high cholera risk.'" Novel or long-dormant diseases present more challenges for remote prediction. "Whether we can predict emerging diseases is a whole other question," Ford says , especially as their vectors or risk factors might take time to assess. And some diseases that spread among people might turn out to be nearly impossible to predict using satellite and environmental data beyond what researchers already know about seasonal cycles, like that for the seasonal flu. And, the nonseasonal H1N1 flu, for example, "is probably going to be more to do with human patterns [and] rapid transport between countries" than environmental changes that can be mapped, Ford says. Predicting infectious diseases is a crucial step in curbing them, Ford notes. "With all our medical advances and our advances in sanitation…we still have not been able to grapple with diseases," he says. But he is hopeful for the future of satellite-based prediction—even as it becomes a greater necessity in a changing climate and globalized world. "There's really nowhere on the globe that a pathogen can really remain isolated," he says.

FIVE ELEMENTS OF A TERRORIST ATTACK

Homeland Security Secretary Janet Napolitano has stated in numerous briefings and public statements that the common citizenry of the country is an "untapped resource" in the fight against terrorism. For years the anti-terrorism intelligence and law enforcement communities have been voicing a desire to tap information possessed by average citizens who have observed terrorism related activities but didn't have an adequate means of reporting the observations and in many cases didn't recognize the activities. But, now the DHS appears to be finally listening to the suggestion that American Citizens are a great asset in gaining information on terrorist cells operating inside the United States. Since the 9/11 attacks the various agencies in the law enforcement and intelligence gathering communities have put methods and mechanisms in place that facilitates citizen reporting of suspicious activity. The result was less than what had been hoped for as citizens jammed hotlines and exchange servers with reports of activities and circumstances of absolutely no intelligence or law enforcement relevance. It didn't take long for hotline receipt stations and the agencies themselves to start treating reports from citizens as worthless and time consuming. Many agents could be heard complaining about the total waste of time the complaints and reports were. However, the problem wasn't in the existence or even the use of the reporting hotlines. The problem lay in the fact that the intelligence and law enforcement communities had great difficulty in educating the masses on what they were looking for. Many agencies didn't trust the public enough to share information that was all but unclassified regarding the behaviors and processes involved in terrorist activities. They felt that if they publicized the methodologies and processes of terrorist planning and attacks that they would "accidentally create domestic terrorists." It was, and remains, an unjustified fear. Other agencies, especially those governed by the Department of Defense, lost touch with the intent of classifying information. In these offices everything that came in was instantly classified and locked away. Information remained solely within the agency itself and literally went nowhere. In order for the common citizenry to become a viable intelligence and law enforcement information resource two items must be engaged successfully. The first is the availability and functionality of a reporting and information routing mechanism. This part has been done well but doesn't produce much of anything useful because of the lacking and quite important second item. That item is the education of the public on the elements of a terrorist attack, terrorist organizations, and even elements of terrorist thought and ideology. To this day, the educating of the public is severely lacking and met with skepticism, fear, and reluctance from the various agencies involved in the process of combating terrorism. So, what exactly is it that serves to change the average American citizen into a "viable intelligence and law enforcement asset?" First, it is essential that every American understand that terrorists and terrorist organizations are not spontaneous in their actions. The word simply doesn't exist in their vocabulary and means of thinking.

Every terrorist attack is very well planned, coordinated, and executed with extreme discipline. The second thing to know is that terrorists are not crazy or stupid. In fact, they are just the opposite. Many terrorists have advanced academic degrees and are highly intelligent. They are the type of people few would ever suspect of harboring a desire and plan to cause massive damage and death. Many people, who were neighbors or friends of terrorists, often say that the individual displayed absolutely no inclination towards violence at all. They would never have suspected that they were living next door to a person who would blow-up a building or fly a plane into a building. Intellect is a commodity in vast volume when it comes to terrorists and their various organizational manifestations. They are not by any means stupid. One must also consider the sanity and emotional stability of terrorists. Many commentators and people like to say that all terrorists are crazy. This comes more from an effort to generate a self-defined justification for an act that cannot otherwise be fully understood by the observer than from any genuine realization about the mental health of a terrorist. It is easier to dismiss terrorists as "sick and unable to know better" than it is to recognize the fact that they are quite sane and quite stable before and during their deadly acts against humanity. It goes back to the old saying that "it isn't the loud ones you have to worry about. It's the quiet ones that will kill you." Mentally ill and emotionally disturbed people tend to explode in fury and are quite spontaneous in their behavior. For instance, the rampant shooter that walks into a mall and opens fire on people is an example of violence from insanity. But, the carefully planned, prepared for, and executed car bombing of a VIP's convoy is far from a spontaneous act of a mad-man. So, it is important to keep in mind that the "terrorist candidate" is usually very sane and very stable. Now you know what to look for, right? Not exactly, there is one more thing that everyone should be aware of. Contrary to popular belief, a terrorist attack starts long before the actually deadly event. **There are five elements to every terrorist attack. These elements are** (1) Target Identification, (2) Intelligence Gathering & Planning, (3) Logistics & Training, (4) Rehearsals or "Dry Runs," and (5) the physical manifestation of the attack itself. These are the five elements of a terrorist attack and they are universal. Virtually every terrorist attack that has and will take place follows these elements in the presented order. Three of these elements can be detected if the observer knows what he/she is looking at and has a means of reporting the observation to the appropriate authority.

The **first element**, "Target Selection," is an exact mathematical science for terrorist planners and organizational leaders. The target isn't randomly selected but is instead a product of a carefully study and comparative observation. For instance, terrorist organizations seek several outcomes from their actions. These outcomes range from simple media attention to political/military disruption. So, the target would have to meet criteria relative to the desired outcome. Areas to consider are the impact on the populous, generation of fear and vulnerability, societal or cultural significance, symbolism, and level of chaos generated by attacking a particular person, place, or thing. Yes, a potential target is a noun but a noun of significance to the terrorists' cause and the effect on the target populace and/or government. This element is not one of the three that can be easily recognized or detected by common everyday people. The probability of detecting this, even by seasoned intelligence gatherers, is quite slim, indeed.

The **second element** of a terrorist attack is very much vulnerable to detection. But, it is often very well compartmentalized in order to reduce the obviousness of the effort.

This step involves the gathering of intelligence, surveillance of the target, and observation of vulnerabilities. The type of information gathered and the methods of observation used are dependent on what the target is. If the target is a building then the intelligence gatherers may seek blue prints, layout plans, entrance points, and security measure and/or procedures. They may want to acquire structural engineering figures or material strength ratings. If the target is a person they will want to know residence and work addresses, travel routes, daily routines, health records, and security codes. In order to gather this information the terrorists will have to interact with certain people. People like public librarians, archivists, medical professionals, architects, security guards, etc. These interactions leave them vulnerable to detection especially when they are not a part of or fully familiar with the cultural environment in which they are operating.

Third, the terrorists will begin to formulate a general plan and the maneuvering of personnel, money and materials. This is communication dependent and involves a plethora of shipments, flights, and fund transfers. Bankers, lawyers, airline booking agents, business licensure agencies, property rental managers, immigration officials, and even trucking companies can become instant sensors of unusual activity. The enemy operatives will need to be placed in the area, given covers, provided with funding, provided transportation, and provided shelter. Not to mention the explosive materials or other dangerous items to be used in the final and fifth step. This is also a detectible element of a terrorist attack. Again, it is a matter knowing what to look for and being able to report it to the appropriate people in a timely manner.

The **fourth element** is the final step before the massive damage of property and loss of life occurs. It is also the last of the civilian observed and detectible steps of a terrorist attack. It is in this step that the operatives selected to carry out the attack will begin to execute rehearsals. They are commonly known as “Dry Runs.” These are especially detectible in attacks that include car bombings. An example of a dry run would be for the terrorists to drive up to the entrance gate of a facility but then turn around suddenly before approaching the guard shack. This may happen several times on different days and at different times of days. The vehicles may change but the occupants are almost always the same. Perimeter security probing is another form of rehearsal and last minute intelligence gathering for the terrorists. There is but one thing left to do, execute the actual attack itself.

The **fifth element** is the one step we all hope to prevent from happening. It is here that the devastating loss of life and destruction to property occur. This step can be detected but in most cases the detection occurs only seconds before the blast, shooting, or kidnapping. There is very little time to react when the fifth and final step of an attack is executed. Like 9/11, there is usually no warning or detection at all until it is too late. Citizens become viable assets in detecting criminal and terrorist activity in reporting “viable and tangible information.” Thus, knowing the five elements of a terrorist attack is important to reducing useless and false reports and enhancing and increasing useful information reports from average Americans via special hotline services offered and maintained by the U.S. Government.

WHAT IS BEHIND THE BOLIVIA-ISLAM CONNECTION?

It is a strange and unexpected sight in the middle of Bolivia, a country better known for alpaca sweaters and Marxist revolutionaries, but everyday from the curved towers of a mosque in the city of Santa Cruz goes out the call for Muslim prayer. One would not be embarrassed to have never imagined that the Bolivian Islamic Center ever existed in this country heavily dominated by Roman Catholicism and with a majority indigenous population. It is one of a handful of Islamic centers serving a tiny population of Bolivian Muslims estimated to be comprised of 1,000 people. But despite its size the population has become the new subject of security interest of the United States. The head of the Islamic Center, Mahmud Amer Abusharar, an elderly grey haired Palestinian refugee sitting in his front office appeared humorously bewildered when presented with recent US intelligence and media reports detailing him among others in a study of extremist threats in Bolivia. "The Islamic center is a Bolivian institution, which has no discrimination, whatsoever, against anyone… white like the Europeans, or brown like the Bolivians… Thank God we call on the people to be good to be universal and honest, not to be aggressive," Abusharar insisted. "I never thought that the Islamic Center forms danger to the United States, but who is introducing this idea to the United States public; he must be the one looking to harm the North American people." In a June 6th piece, Fox News published "Bolivia becoming Hot Bed of Islamic Extremism, Report Concludes" based on a May 2009 US intelligence report on Bolivian Muslims. The author Nora Zimmett cites the report to paint the potential threat of advancing terrorism in the Western Hemisphere from "Anti-American" attitudes of Bolivian Muslims, the leftist Bolivian government's increasingly strained relations with Washington, and budding relations with Iran. Quoting an unnamed US intelligence official, "There's a theory that they may believe — Latin America, particularly with its Leftist leanings in recent years, may be more receptive to the anti-American-type rhetoric that we've been accustomed to hearing from Iran…The goal of the [Islamic] revolution is not just for Iran, but they feel an obligation to spread it. So we see their outreach as not just an economic one, but also a cultural one. Now, is there potential that could be capitalized by some other for some more nefarious purposes? There's a lot of possibilities out there." While Fox News and their anonymous source push the potential likelihood of such a threat the actual report prepared by the Open Source Center (OSC) of the Director of National Intelligence is void of specific or possible security threats and concludes that Bolivian foreign relations are "not a result of Bolivian Muslim influence." Instead the report's dissection of eight Bolivian Muslim organizations directs attention to critical attitudes of United States and Israeli policies held by local religious leaders. The Islamic Center is described having the supposed contradictory view of both voicing support for "open-mindedness and peace" while "numerous on-line statements reveal a strong anti-US position", citing statements in opposition to the US invasion of Afghanistan: "Today we see the US declaring armed Jihad against terrorism. They aim their bombs at UBL and Afghanistan, whom they financed and trained." "The fox is known to be a most sneaky animal," Abusharar said referring to the reports. "Criticism is normal. In a democratic country, if we want to keep democracy we cannot behave like this." "These people, they want something. To convince the US government they have to write something." "I don't think the CIA needs to write a report like this. They know

me personally," describing previous visitors whom he believes work for US intelligence services. "I opened all the doors and you know what I told them, 'Take all the photographs you want'."He emphasized, "It is not the Muslims who are the problem of the United States in Bolivia. It seems that our government is the problem and they are looking for motives to threaten our government or looking for reasons why they have bad relations with Bolivia." The government of Evo Morales which has initiated pro-indigenous and socialist reforms has butted heads with the United States in recent years. Contentious issues include expelled US diplomat Philip Goldberg and other US agencies links to violent rightwing opposition, the nationalization of natural gas exploitation, and supposed setbacks in Bolivian anti-narcotics measures following the expulsion of the DEA for alleged political activity. Evo Morales described the recent suspension of Bolivia from the Andean Trade Promotion and Drug Eradication Act as based on "false accusations of the Obama administration against the Bolivian government to suspend the tariff preferences and in a political program of open interference by the United States government against the Bolivian people." The OSC report naming the Bolivian Islamic Center additionally details local Muslim protests against the Israeli offensive in Gaza which sparked friction between the two countries. Morales expelled the Israeli consulate in response and called for the Israeli leadership to be tried for war crimes. In May, the Associated Press published details of a "secret Israeli government report" claiming Bolivia is supplying Iran with uranium for its nuclear program. Bolivian Mining Minster Luis Alberto Echazu dismissed the allegation pointing out that no uranium mining operations exist in the country while Government Minister Ramón Quintana harshly rebutted, "Only a clown would permit such barbarities to happen. Since it's so, it must be said that a certain Israeli agency is an agency of inepts, incompetents, and clowns." Such a theory of nuclear relations between Bolivian and Iran had previously been advanced by the Washington Times, based on hearsay speculation in a February 10th piece, "Mineral Wealth, Political Weapon". Growing relations between Bolivia and Iran have garnered much attention and alarm, heralded in 2007 a state visit by Iranian President Mahmoud Ahmadinejad to La Paz and the promise of $1.1 billion in aid to Bolivia. In January, Defense Secretary Robert Gates stated before the Senate Armed Services Committee, "I'm concerned about the level of, frankly, subversive activity that the Iranians are carrying on in a number of places, in Latin America, particularly South America and Central America. They're opening a lot of offices and a lot of fronts, behind which they interfere in what is going on in some of these countries." However few of the publicized cooperative loans and projects between the two governments have yet to follow through in practice, a catch which has not dissuaded the interest of many journalists. The McClatchy reporter Tyler Bridges wrote a full length article centered on the construction of an Iranian financed dairy factory outside La Paz. United States preoccupation with the spectacle of Iran appears so great that the OSC report on Muslim Bolivians includes a seemingly misplaced section on Iranian-Bolivian relations, lacking any stated connections to the local Muslim community. Abusharar was staunch during the interview in his views of Iranian politics. "For me, the Iranian government is not Islamic. Since when does Islam permit the creation of terrorists?" Perhaps few have stretched reality to the limits in search of the extremist Islamist threat more than Douglas Farah. Farah, a former longtime Washington Post foreign correspondent and analyst for the Washington D.C. based security and counter-terrorism think-tank International Assessment and Strategy Center published in June an alarmist report "Into the Abyss: Bolivia under Evo Morales and MAS". He argues the existence of an

emerging Islamist threat in Bolivia via Iran and Venezuela. The report, littered with erroneous facts and discredited accusations, claims without reference to any collaborating sources or material that Venezuelan military advisers are instructing their Bolivian counterparts in "asymmetric warfare" terrorist tactics inspired by "radical Islamists". While the emergence of a military threat from Morales' Bolivia has so far been speculative at best, La Paz has expressed alarm over a number of US actions. Coinciding with the 2005 Presidential elections hundreds of US troops were stationed through 2006 at the Estigarribia military base in Paraguay, 200 kilometers from the Bolivian border and prompting fears the US would support a military coup to halt a Morales victory. The presence was partly justified by a dubious theory of Hezbollah terrorism threats in the Tri-Border region between Paraguay, Argentina, and Brazil. Following Morales' election the US removed 28 anti-aircraft missiles from the Bolivian military stockpile without consulting civilian leadership. In May, the US military war game Unified Quest 2009 simulated US Army intervention in Bolivia during a right-left civil war "following the failure of a leftist regime".Evo Morales recently called plans for seven US military bases in Colombia a threat to the region's democracies. Strangely lacking in the fearful speculations surrounding Bolivian Muslims and Bolivian-Iranian relations is a consistent and concrete reason why such links present a danger besides the nebulous and catch-all category of "Anti-American". Jose Brechner, who has warned of the dangers of Islamic radicalism in Bolivia even prior to Evo Morales' election, is instructive on this point. Brechner is a Bolivian journalist and political commentator who writes for various Latin American news journals and magazines and was a founder of the rightwing Nationalist Democratic Action party, the now defunct political organization of former US backed Bolivian dictator Hugo Banzer. As in the March 2009 opinion "Bolivia, Israel, and the Muslims", he describes the threat in unabashed xenophobic terms: "There is fear in Bolivia, and a lot of it, because those who do not know the frantic Indians do not know terror. The closest to the Bolivian altiplano indigenous are the hordes of Muslim fanatics. "It is not by chance that the Arabs are strengthening bonds with Morales, they have through the Indians the human material favorable to expand the Jihad. The Muslim savagery fits perfectly with that of the Bolivian altiplano." Given the persistently alarmist and speculative nature of attention given to Bolivia's Islam connection it is difficult not to suspect that an element of old fashion racism is at work, better suited to the era of colonialism. Abusharar of the Islamic Center related the Fox News article to the story of a friend in 1950s Palestine who stripped naked in order to prove to a group of American tourists that he did not, as they had heard, have a tail. "We have to be very careful of this cancer. These are the real enemies of the United States. They are trying to show that everyone is an enemy of the United States, it is not true. I have met many Americans in my life and they deserve respect. They teach their sons to tell the truth, but once they read the rubbish of a person like this problems start for the United States… If we have intelligent governments, they will not listen to this rubbish." Abusharar concluded the interview, "And I don't know why the report calls me a Sheikh. I am not a Sheikh."

SNIFF, WATCH, GUIDE

You take a seat on the subway and prepare for a crowded trip into the city. You dig through the day's headlines and fiddle with your iPod. A seemingly normal commute.

But what you don't know is that, in the tunnel and terminal, a system of detection technologies may be quietly helping to protect you from dangerous chemicals … lethal chemicals that could be unleashed intentionally by terrorists. It's a system developed by the DHS S&T Directorate, and it's sniffing for danger in more and more transit systems across the Nation. The chemical threat to subways became very real on March 20, 1995. On that day, members of a religious cult released poisonous gas in the Tokyo subway system, killing 12 people and injuring as many as 5,000. There were no detectors or security cameras. There was no formal emergency plan. More than an hour passed before authorities arrived, and two more hours went by before the gas was identified as the chemical warfare agent sarin. Learning from that day, U.S. researchers set out to arm subways with detectors, cameras, communications, and training, designed together as a system. As a result, subway riders in a growing number of U.S. cities can now breathe a little easier because of the Program of Response Options and Technology Enhancements for Chemical Terrorism (PROTECT). Initiated in 1998 by the U.S. Department of Energy, PROTECT has been transitioned by the Directorate to DHS's Transit Security Grants Program.

PROTECT helps rapidly identify a chemical release, alerts authorities, and guides their response.

Here's how it works (photo): When a chemical is released 1, it is detected by a sensor 2. In the station's operations control center, a warning sounds, calling attention to a live image from the sensor's closed-circuit television camera. The control center operator pans, zooms, and tilts the camera while watching the video 3. If all appears normal—people are walking, standing, reading—the detector probably got a whiff of floor cleaner. But if people are vomiting, gasping, or rubbing their eyes, a chemical attack is under way 4.

If that's the case, the operator summons responders, bad air is vented, and trains halt so the chemical won't find new victims in the next train or the next station. Out on the street 5, the incident commander receives vital data while responders "plug in" to monitor events 6 using the Chemical/Biological Emergency Management Information System (CB-EMIS). This system shows where the trains are, the chemical plume's concentration, where the plume is drifting, and how fast. CB-EMIS can point the way into danger … and back out.

PROTECT was piloted in 2001 in select stations of the Washington, DC, Metro. In a simulation exploring the system's benefits, responders were on the scene within five minutes. Impressed, Washington set up PROTECT for more stations. Soon, PROTECT was deployed in Boston and New York. Today, other cities are considering installation of the system. "The program works. It guides my people in plain English," says Ron Masciano, Deputy Director of Security at New York's Metropolitan Transportation Authority (MTA), where in 2004 a detector and its pivoting camera spotted a man spraying a wide area of Grand Central Terminal with a wand jutting from a black box. Within seconds, security mobilized. "As he walked out to Lexington Avenue," says Masciano, "boy, was he surprised." The sprayer turned out to be an exterminator, but MTA's response became a textbook training scenario.

UNCOMMON OPERATING PICTURE

When military types and incident commanders talk about getting a common operating picture (COP), they may each have their own notion about what a COP is or ought to be for their needs. The U.S. Joint Forces Command defines a COP as "a single identical display of relevant information shared by more than one command. [It] facilitates collaborative planning and assists all echelons to achieve situational awareness."

But how? Most COPs are basically electronic push-pin situational awareness maps, based on the same technology that you use to get directions to the

nearest mall. When first responders arrive at the scene of a disaster or an emergency, they have an abundance of data available to them, and access to real-time sensors to keep feeding data, such as cameras, radiation detectors, and air quality monitors. But it can be challenging to integrate, correlate, and effectively fuse all the raw data and the alerts provided by these sources and sensors into a cohesive, easy-to-understand view of what's going on at the scene. However, the DHS S&T Directorate is now sponsoring innovative technology that can make this view possible. Called fourDscape®, the technology will help responders and their commanders to quickly analyze situations, interact with people on the scene, and coordinate a response with a clearly defined mission. It's produced by Balfour Technologies under a contract with DHS S&T's Small Business Innovation Research program.

In short, fourDscape® is capable of managing a large number of cameras and sensors in a virtual, high-resolution, and four-dimensional (4-D) computer display (4-D includes the three traditional dimensions of space, plus the fourth dimension of time). Beyond a basic satellite map of an incident overlaid with data about the locations of buildings and streets, the technology allows the user to monitor cameras at the scene, watch videoconferences with colleagues, and receive alerts to get both contextual and interactive updates. These updates can help a commander understand the totality of a situation—while remaining on-scene—and make tactical decisions. The fourDscape® project was put to the test earlier this year during Operation Lupercale, a planning and emergency response exercise that included DHS and the Los Angeles Sherriff's Department. The exercise simulated a scenario where a vehicle-borne improvised explosive device (that is, a car bomb) and a radiological dispersion device (like a dirty bomb) were notionally released against the Tournament of Roses Parade, which takes place on New Year's Day in Pasadena, Calif. Also included were the L.A. Sherriff's Bomb Squad, the Hazardous Material Response Team, and other resources in the vicinity of the County Emergency Operations Center of East Los Angeles. For the test, participants used a 4-D virtual view of the City of Pasadena, which included publicly available county images taken at different and complex camera angles (called ortho and oblique). Next, vivid 3-D building models of the parade route were layered in, followed by simulations of the float traffic, information from a police deployment plan, prerecorded traffic videos, mobile wireless helmet cameras, and even a webcam from one of the parade floats."The fourDscape® management engine took all of the data from those sensors and seamlessly fused them together into a single, visual 4-D scene that was meaningful and useful to the police," said Stephen Dennis, who manages the project at the Directorate's Homeland Security Advanced Research Projects Agency. "It gave us a chance to see what it would be like to have true situational awareness during a major, real-world event. It gave us, well, a not-so-common COP." "The technology demonstrated the value of integrated visualizations for a variety of specialized responders and command elements," said Lt. John Sullivan

of the L.A. Sherriff's Department. As his agency continues to test fourDscape®, the ultimate goal is to begin using it, for real, to support security operations during the actual 2009 parade on New Year's Day. Stay tuned…

THE SMALLER, THE BETTER

If you're a first responder, the size of your equipment matters. Case in point: Chemical detection. When firemen or EMTs arrive at the scene of a reported chemical release, some questions need immediate answers: "What class of chemical—if any—are we facing?" "What are the odds that we and others around us will be exposed?" "What type of personal protective gear should we use?" Without a chemical detector handy, first responders are often going by best estimates and the accounts of eyewitnesses. It's just not practical, or timely, to bring in large and cumbersome detectors to get a reading on the situation. But what if first responders had in their toolkits a handheld system for detecting and analyzing chemicals? It would be easy to carry, battery operated, and spot-on accurate. It would also be affordable, requiring little maintenance and simple training. This is the goal of the Lightweight Autonomous Chemical Identification System (LACIS). Under development with funding by the DHS S&T Directorate, LACIS could very well revolutionize hazmat and emergency response. "We're aiming for a device that could be used by all first responders," says Angela Ervin, the program manager for the project. "They'll be able to identify the chemical hazard and measure its concentration, in real time, when they arrive at the scene." Three performers are working to deliver a LACIS prototype: Sensor Research and Development Corporation, Smiths Detection–Edgewood, and a Purdue University/Griffin Analytical team. The detectors will weigh less than five pounds, use conventional batteries, and cost about $2,000 or less per unit. They'll be designed to avoid false alarms, and they'll enable first responders to identify a large number of vapor hazards, including the most dangerous toxic industrial chemicals and chemical warfare agents. LACIS will help first responders to determine—with confidence—what kinds of equipment to don, what levels of hazmat and medical support are needed, and how long they should wait before cleanup can safely begin. If the situation is considered severe or questions about chemical contamination persist, state or Federal reinforcements could then be called in. The U.S. Environmental Protection Agency operates, for instance, a DHS-funded fleet of mobile chemical laboratories. The next phase for the LACIS project is more rigorous and independent field testing of the prototypes, which is slated to begin this summer at Battelle Memorial Institute. "Our goal over the next two years is to evaluate the detectors in real-world environments," says Ervin, who hopes to have a product on the market within three to four years.

SOVIET RADIOACTIVE COBALT RETRIEVED FROM LEBANESE LABORATORY

Experts from the International Atomic Energy Agency (IAEA) recently managed to retrieve dozens of radioactive sources from a Lebanese research facility, where they had been left to decay for the better part of the last ten years. The active cobalt, which has now been repatriated, was a potential source of material for a "dirty bomb," if it were to fall in the hands of terrorists. The action was part of a wider IAEA initiative meant to secure such sources, Nature News reports.

The material was first identified in 2006, in an agricultural research institute in Lebanon. Originally used in a pest-control study, the dangerous cobalt-60 irradiator had been untouched since 1996. It was, fortunately, stored in a sealed unit, which contained about 36 sources of radiation. With a combined power of 3,500 Curies, this was by far the most radioactive source in the entire country. In the wrong hands, it would have made for a powerful component in a dirty bomb. "We were worried about the risk of theft, either for the value of the irradiator or particularly for malicious purposes," IAEA radioactive source specialist Robin Heard, who has been in charge of overseeing the new recovery mission, said. While the cobalt was found in a sealed unit, there existed a danger of someone accidentally opening the storage room. All the personnel that originally worked with the material had already left the research facility, so there was no one to look after it. Experts from the international agency said that, if someone had opened the container, he or she would have died within minutes, on account of the extremely high levels of radiation that the cobalt-60 emitted. When it was time to move the material back to Russia, the political instability in Lebanon, as well as the Israeli bombing of its airports prevented this from happening. Finally, on August 30th, the radioactivity source was taken to a secured, nuclear storage facility in Russia.

BRIT SCIENTISTS DEVELOP REVOLUTIONARY METHOD TO TREAT DIRTY BOMB VICTIMS

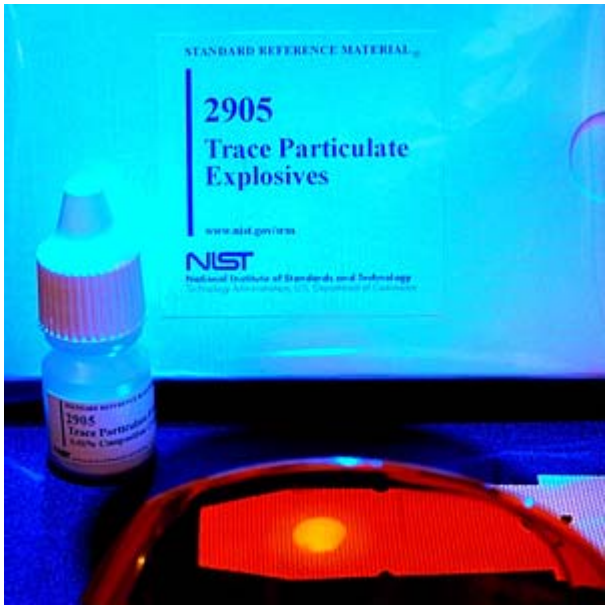
Brit scientists have developed a cutting-edge method to treat victims of radiation contamination in an event of "dirty bomb" explosion. The suitcase-size device can rapidly detect the extent of cellular damage caused by exposure to a nuclear will be announced this week. Trials of this device, which would help doctors scan hundreds of potential victims at an incident within hours, will be announced this week. Current methods of detecting such patients are complicated, and involve scientists taking blood samples which then undergo a complex battery of tests. Experts estimate that existing UK labs could handle only 100 samples a week. "If there was a major radiological or nuclear event the hospitals in this country could be overwhelmed," The Independent quoted Dr Kai Rothkamm of the UK Health Protection Agency as saying. The new equipment will assess the total body dose of radiation by detecting the damage to proteins in the nucleus of cells. Each machine will be capable of processing 30 samples per hour.

IS AL QAEDA ANTHRAX AND BIOLOGICAL WEAPONS' PROGRAM A CONCERN?

Peter Bergen, a CNN commentator and senior fellow at the New America Foundation, does not believe the intelligence Khalid Sheikh Mohammed (KSM) gave up on al Qaeda's sleeper agents was all that important. The facts and evidence, as accumulated by American intelligence and law enforcement officials, show otherwise. Bergen's reading of this evidence is simply mendacious. Bergen's reading of the intelligence KSM gave up on al Qaeda's anthrax program is also horribly skewed. Months prior to KSM's arrest, an al Qaeda operative named Yazid Sufaat was arrested in Malaysia. Authorities did not know Sufaat's role as al Qaeda's chief anthrax scientist at the time. After he was captured on March 1, 2003, KSM gave up intelligence on Sufaat and two others involved in the anthrax program. When confronted with this intelligence, Sufaat then admitted his prominent role. This story is partially told in a recently declassified CIA analysis dated July 13, 2004 and titled "Khalid Sheikh Mohammed: Preeminent Source on Al Qaeda." While the CIA found this intelligence important, Bergen thinks it was close to, if not entirely, worthless. Why? Bergen says al Qaeda's anthrax program was harmless. In a piece for Foreign Policy, Bergen wrote: "In fact, al Qaeda's anthrax program was a big dud that never produced anything remotely threatening, a point that the CIA report is silent on." The CIA's report is silent on this point because it is completely wrong. In fact, here is what Bergen wrote in his book Holy War, Inc.: Al Qaeda also explored the possibility of deploying biological weapons: diagrams of a balloon dispersing anthrax were discovered at an al Qaeda safe house in Kabul, and CIA director Geroge Tenet testified before Congress in February 2002 that documents discovered in Afghanistan "show bin Laden was pursuing a sophisticated biological weapons program."

NEW NIST TRACE EXPLOSIVES STANDARD SLATED FOR HOMELAND SECURITY DUTY

Security personnel need to be able to find explosive materials and persons who have been in contact with them. To aid such searches, the National Institute of Standards and Technology (NIST), with support from the Department of Homeland Security, has developed a new certified reference material, Standard Reference Material (SRM) 2905, Trace Particulate Explosives. Compatible with field and laboratory assay methods, the SRM will be helpful in calibrating, testing and developing standard best operating procedures for trace-explosives detectors. Most air travelers have probably had some experience with prototype walkthrough portal or tabletop-type trace explosive detectors. Customs inspectors use the machines to check international cargo shipments, and firefighters and police officers use them to evaluate suspicious packages. The goal of these detectors is to effectively collect residue particles that result from handling materials that might be used to fabricate a bomb and then evaluate the explosives content. For example, when operating the tabletop device, security personnel use a piece of material to swab packages and bags for explosive residues. The security officer then places the swab in a tabletop device that heats the material, separating any chemical residues that may have been absorbed. Like other sensitive instruments, these machines need well-defined calibration standards to ensure that they are working properly. According to NIST chemist William MacCrehan, the calibration materials that the vendors of these machines provide are typically of unknown quality. "These detectors need to be reliable and precise enough to detect particles that weigh as little as a few billionths of a gram," says MacCrehan. "We created this SRM to provide manufacturers and operators with high quality, independently generated and validated reference test materials to enable better designs and reduce the number of false positives and negatives." SRM 2905 consists of four different test substances designed to simulate trace residues of C-4 plastic explosives and TNT. The substances themselves consist of inert solid particles about 20 to 30 microns in diameter. The particles have been coated with explosive materials and a florescent tag, which enables the material to be seen using specially filtered optics or glasses. Although the particles are coated with explosive material, MacCrehan says they are incapable of exploding on their own and are completely safe to handle. This release is part of a larger, ongoing project to develop other wet and dry materials that simulate SEMTEX, gunpowder and peroxide-type explosives. According to MacCrehan, efforts also are underway to develop reference materials to help train bomb-sniffing dogs.



IMPROVING IMMUNE DEFENSE AGAINST ANTHRAX

Scientists discover a gene in anthrax-causing bacteria may help defend against this form of bio-warfare. Spread of the deadly disease anthrax by spores of the bacterium Bacillus anthracis is a known terrorism risk and protection includes finding ways to treat the disease, according to an academic paper reviewed by Faculty of 1000. Scientists from the University of California (San Diego) have identified a gene in B. anthracis that not only contributes to the severity of the anthrax disease but also makes it more difficult for a patient's immune system to fight the infection. Mattias Collin, of Lund University, and Marc A. Williams, of the University of Rochester, praised the study as "a true tour de force" on the Faculty of 1000 Biology website and noted that this might provide a new way to treat anthrax poisoning. If the **gene, known as ClpX,** is inactivated in the anthrax-causing bacteria, the body's natural defence mechanism can better fight the disease. "This study has indeed identified a potential treasure trove in ClpX", Colin and Williams wrote. While there is much left to learn about the exact mechanism the bacteria use ClpX to attack their hosts, the Faculty of 1000 members added the study will "unveil novel targets for therapeutic intervention in treating anthrax in human subjects.

REVOLUTIONARY ARMED FORCES OF COLUMBIA (FARC)

The Revolutionary Armed Forces of Columbia, spelled in Spanish as "Fuerzas Armadas Revolucionarias de Columbia," is the military element of the Columbian Communist Party. Communist fighters have been combating conservative factions in

Colombia since the 1950's. FARC was founded in 1964 in order to conduct military and terroristic operations against opposition groups and those civilians believed to be sympathetic to FARC opponents. They originally fought under specific Marxist-Leninist ideology and enjoyed Soviet support in its early days through to the late seventies. As a result of Soviet assistance during the first ten to fifteen years of existence, FARC has become Colombia's largest, oldest, best equipped, and most professional insurgency group. Today, FARC receives support from Venezuela, Cuba, and Ecuador. Its ideology and methods of operation have also changed over four decades of existence and political change. Although FARC leaders and representative continue to assert that FARC is a Marxist organization fighting for the lower classes against the rich exploiters of the workers, they hardly practice the principals of Marxist communism. Instead, they have actually shifted towards a mafia styled capitalist practice of acquiring revenues through extortion and through the manufacturing, shipping, and sales of illegal drugs. Their primary export product is cocaine. In addition to extortion and drug trafficking, FARC has also adopted the practice of kidnapping and hostage taking for ransom. Other sources of money come from countries like Venezuela under its Marxist dictator, Hugo Chavez. FARC conducts extortion and hostage taking operations throughout Colombia and in Ecuador, Venezuela, Panama, and Bolivia. Hardly anyone in Colombia is immune to FARC kidnapping raids. Politicians and common citizens alike are frequently

kidnapped and returned only when a ransom is paid. In many cases, the FARC murders their hostages when the demanded ransom is not paid by an established deadline. U.S. and European citizens are at exceptionally high risk of being kidnapped and/or killed by FARC operatives. At the top of FARC's leadership is the Secretariat. This body consists of about seven members with the leading member or chairman, called the "Septuagenarian," presiding and performing both military and executive supreme leadership operations. The rest of the Secretariat is comprised mainly of regional commanders and the Senior Military Commander. From the Secretariat, the organization of FARC strongly resembles that of a traditional military organization with multiple regional divisions under which one would find Brigades, Battalions, Companies, and Platoons. Distinguishing leadership insignia are worn on the uniforms of FARC officers/leaders but there is no centralized recognition system which can, at times lead to confusion. The exact numerical size of FARC is unknown. Of course, not revealing those numbers plays in the best interests of the FARC as U.S. and Colombian officials are often left not knowing what level of resistance they may encounter during law enforcement, intelligence, and military operations. However, there are estimates based on intelligence data and complex mathematical computations that place FARC's size to be anywhere between 9,000 and 19,000 combatant personnel. There are thousands of non-combatant sympathizers and supporters that simply can't be measured or dependably estimated using contemporary mathematical models. FARC was founded by the Colombian Communist Party to perform military roles and to act as the party's enforcers on the streets in 1964. However, smaller groups of communist fighters and terror cells had been fighting conservative paramilitary groups and Colombian government forces since 1950. FARC served to consolidate communist militant forces and to establish a centralized military command channel. Enjoying Soviet assistance throughout the sixties, seventies, and part of the eighties, FARC grew into a huge, militarily trained, equipped, and effective force. By the 1980's FARC was able to hold its own in restricted combat engagements with Colombian government forces and many other militants groups were either destroyed completely or reduced to being weak pockets. By the year 2000, FARC had become such a significant force to deal with that the Colombian government rendered it special political status and President Pastrana granted them a "Safe Zone" in exchange for FARC's participation in peace talks. Negotiations were filled with interruptions and slow responses while bombings, assassinations, and kidnappings continued. In October of 2001 FARC broke-off negotiations with the government in protest of enhanced government security procedures and military flights over its "Safe Haven." On 12 January 2002, Colombian President Pastrana gave the FARC an ultimatum of returning to the negotiations with a new proposal for discussion of he would revoke the Safe Zone he granted them three years earlier as a condition of their participation in peace talks. After issuing the ultimatum, Colombian military forces began to deploy along the borders of the FARC territory. Many in the region and throughout Colombia believed that a massive escalation in fighting was about to occur that would be the biggest confrontation between FARC and government forces since its founding in the sixties.
Eventually, the FARC agreed to return to negotiations before the end of the 48 hour time allotted by President Pastrana. The resulting agreement established a schedule for peace negotiations to produce a final peace between the two entities. This agreement also ended what many saw as the imminent and most deadly fight in the history of the decades long civil war. There are historians and military analysts who believe that the FARC was at a weakened point, having lost Soviet money and

weapons and struggling to gain support from elsewhere. In their opinion, Colombian government forces could have defeated FARC and ended the conflict then. The factor that may have served to let FARC slip by was the fear of the unknown. Colombian military commanders and U.S. advisors simply could not determine a close and dependable estimate of the FARC's size. Of course, FARC new its situation and relented in order to ensure survival.

Family Members of P.D. and Army members taken Hostage Display Signs

During the Inauguration of newly elected Colombian President Alvaro Uribe, FARC forces executed a mortar attack on the Presidential Palace. In attendance were many foreign dignitaries, including one from the United States. Nobody was injured by the attack but people in a nearby neighborhood were killed by rounds that missed their targets significantly. The FARC made it clear that they wanted the more conservative and determined political leader out by whatever means possible. It also displayed the FARC's disregard for the very common people they claimed to be fighting for. On 12 February 2003, a small military airplane, assigned to support the coca plant eradication program, was flying over FARC territory in order to perform a routine reconnaissance mission when it crash landed. The aircraft was carrying one Colombian military sergeant and four American contractors when it crashed inside FARC territory. When the location of the plane was finally determined Colombian military and U.S. DEA agents discovered that the Colombian Sergeant and one American had been shot. The remaining three had been captured by FARC terrorists. The three Americans were used as bargaining chips by the FARC. This incident, and many others like it, fits the typical operational tactics used by the FARC. Kidnapping, murder, and ransoming of hostages has become a common practice and trademark of the FARC in the new millennium. In 2004, President Uribe authorized a large military operation called the, "Patriot Plan." It included a force of fifteen thousand soldiers and had two goals. The primary objective was to push FARC forces out of territory they controlled for several decades. The secondary objective was to trap and arrest, or kill if necessary, key members of FARC's leadership. The operation proved highly

successful in regards to its primary objective. FARC forces, unable to sustain a lengthy and heavy defensive engagement retreated from targeted territory. However, the operation was not very successful in trapping and arresting, or terminating, key members of the FARC's leadership. Those who managed to escape went into deeper hiding after the offensive. Regardless, the operation struck a solid blow to the FARC and raised public trust and confidence in Uribe's leadership and government. Throughout 2005, President Uribe continued to put pressure on the FARC. Doing so resulted in less frequent and intense terror attacks and engagements with law enforcement and military forces of the government. A very alarming incident occurred, though. That incident was the capture of three Irish Republican Army (A Northern Ireland Based Anti-British terrorist organization) explosives and Improvised Explosive Device (IED) experts. They were caught exiting FARC controlled territory on foot. What initially drew suspicion was the fact that three European men walked in and out of FARC territory without being kidnapped, killed, or both. It is believed that the IRA terrorists were recruited through a deal with the IRA that was facilitated by one of Colombia's neighboring FARC supporting governments. The U.S., Colombia, and the European Union have agreed that the presence of professional terrorists like those discovered from the IRA indicates that FARC is working to modernize its terrorist units and tactics. Their understanding of Terrorist Attack planning and execution will lead to more frequent, surgical, and deadly attacks. Through their contacts with Venezuela and its relationship with Iran it is speculated by some experts that FARC operatives may be receiving training from Hezbollah, Quds Force Agents, or both at their bases inside Ecuador. In August of 2005 the Brazilian government arrested a FARC senior member and spokesman named Francisco Antonio Cadena Collazos in accordance with an International Arrest warrant. However, in a serious disappointment to U.S. and Colombian government officials, Brazil granted the FARC terrorist Collazos amnesty and refused to extradite him to Colombia. The International Arrest Warrant remains active and will certainly be executed without issuance of asylum should he decide to leave Brazil. The Colombian government announced the deaths of two FARC commanders, Gustavo Rueda Diaz (AKA: Martin Caballero) and Tomas Medina Caracas (AKA: El Negro Acacio), on 3 September and 25 October 2007. The deaths of these two leaders are believed to have struck a deep blow to the organizational hierarchy of the Revolutionary Armed Forces of Colombia. 2008 would also see the death of a key leader and representative for FARC. In March of 2008, Colombian military units executed a raid on a FARC base that was located inside the country of Ecuador. The base was the operating headquarters of FARC leader and spokesman, Raul Reyes. The laptop computer he was often photographed with was seized shortly after Reyes was killed in battle. A large volume of hardcopy documents and planning FARC officers were also acquired in the raid. The Ecuadoran government was outraged and threatened war with Columbia over what they described as a violation of their national sovereignty. Venezuelan dictator Hugo Chavez joined Ecuador in threatening war with Colombia. The threat of war was eventually resolved between Columbia and the two terrorist sponsoring nations of Venezuela and Ecuador. The information contained on the Reyes laptop, other seized computers, compact discs, and hardcopy documents along with the results of interrogations of captured FARC members proved to be of exceptional value to the Colombian government. The computer files contained documents and communications between FARC and Hugo Chavez's Venezuela that proved Venezuela was funding, supplying, providing safe haven for, and training FARC. The documents also showed Ecuadoran involvement with and support for FARC.

According to Colombian officials, the documents collected during the raid show that Venezuela gave FARC $300 million in cash, rifles, and even offered to supply them with uranium. The offer to provide uranium, indicative of further stretching sinister activities on the part of Venezuela's government, the presence of IRA explosives and bomb making experts, and the technology advances of the FARC seems, to many experts in intelligence, military operations, and terrorism to indicate that the making and detonation of a dirty bomb may have been on the minds of FARC leadership and the leaders of the countries supporting FARC, which could, if this is the case, lead all the way over to Iran. At present, FARC's allies have been identified by the U.N., U.S., and Colombia as Venezuela, Cuba, and Ecuador. Other countries such as Russia and Iran are suspected but not confidently asserted as international FARC supporters. In opposition to FARC is the United Nations via multiple resolutions, INTERPOL, the European Union, U.S. Colombian government, and Peru. FARC's areas of operation include all of Colombia, Ecuador, Venezuela, Panama, Mexico, Peru, and Bolivia. Anything from drug sales to kidnapping and extortion are perpetrated by FARC members throughout the aforementioned areas of operation. UNICEF and the Colombian government have condemned FARC for recruiting people under the age of eighteen years. Many of those are younger than sixteen. In many of the military and law enforcement engagements between Colombian forces and FARC, membership is comprised mainly of children. Some FARC soldiers are as young as eleven when captured, wounded, or killed during intense battles. President Uribe asked FARC representative to sign an agreement to not recruit children into their military ranks. The request was flatly refused by FARC leadership. The use of children as soldiers has been seen in other times and places, though. Nazi Germany, Vietnam, and Iran all recruited and used children as young as ten in military actions. Iran used children to clear mine fields during the Iran-Iraq war, Hitler used Children to defend Berlin in the last days of World War II, and the Viet Cong strapped hand grenades to children and sent them running into groups of American soldiers. Now comes FARC, with Venezuelan Dictator Hugo Chavez's support and endorsement, to abuse children in the worst of ways.

Επισκεφτείτε ένα μεγάλο ξενοδοχείο της αρεσκείας σας και κάντε μια πρόχειρη ανάλυση ασφαλείας. Τα συμπεράσματα δικά σας! Άλλο εάν δεν πρόκειται ΠΟΤΕ να συμβεί κάτι τέτοιο στη χώρα μας…

HOTELS FACE AN INCREASED THREAT OF TERRORISM

The hotel industry and foreign travellers are facing an increased threat of terrorism, according to global intelligence organisation STRATFOR. In the last few years, Islamic militants have changed their focus to more soft targets such as hotels, which have less security, the STRATFOR Special Security Report claims. "Hotels are often full of Western business travellers, diplomats and intelligence officers. This makes them targets for militants seeking to kill Westerners and gain media attention," said the report. The success of the Mumbai attacks on two luxury hotels and the dramatic news coverage it received suggests that there is a risk of copycat attacks, STRATFOR predicts. Hotels have been reluctant to incur the costs of adding security in the past, or do not want to inconvenience guests by imposing identity checks, according to the Texas-based firm. However, they may have to take notice following recent lawsuits.

"Given the highly competitive nature of the industry, hotel owners often have been forced to take the calculated risk that their business will not be targeted. However, hotel owners might have to change this mentality," it said.

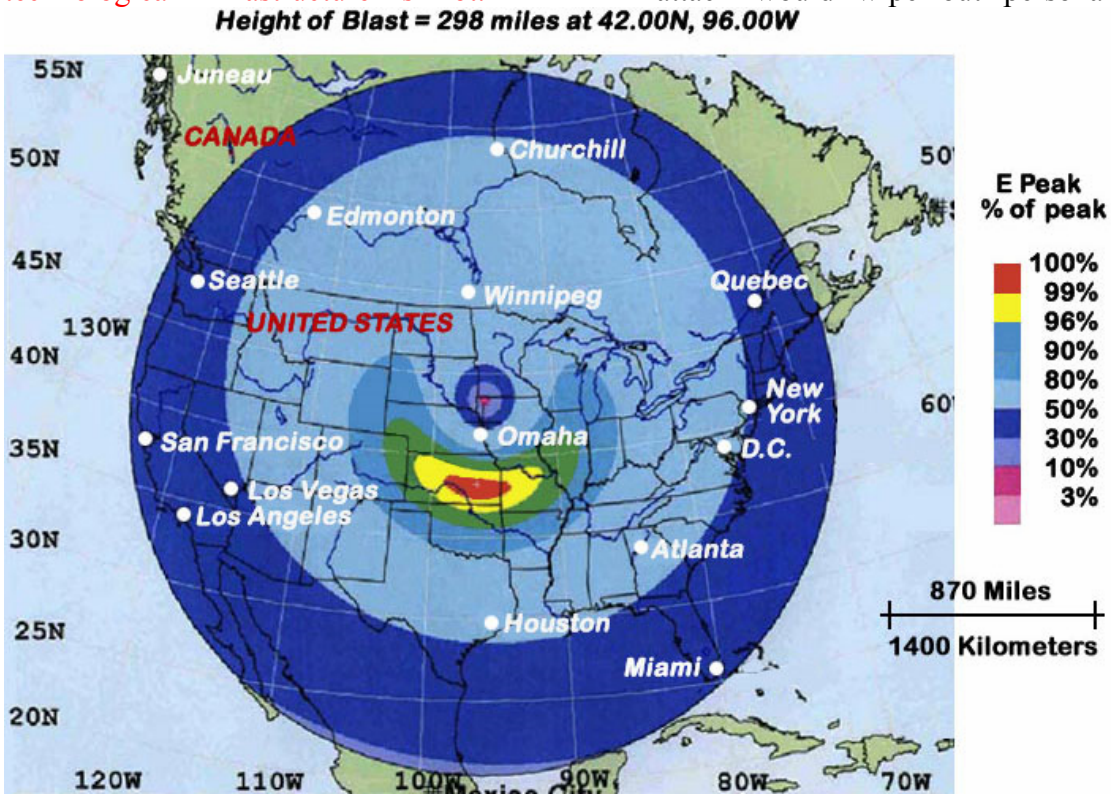
DID SOMALIA'S AL-SHABAAB PLAN TO ATTACK THE AUSTRALIAN MILITARY?

Operation Neath, one of the largest counterterrorism operations in Australian history, culminated in a series of early morning raids in Melbourne on August 4. The four men arrested were all Australian citizens of Lebanese or Somali descent and apparently part of a larger group of 18 individuals under observation by police (The Australian, August 4). In a press conference on the day of the arrests, police laid out their central charge that the men were "planning to carry out a suicide terrorist attack" on an Australian military base using "automatic weapons" in "a sustained attack on military personnel until they themselves were killed." According to police, some individuals in the plot had been to and presumably trained in Somalia, and had sought a "fatwa" (religious ruling) that would authorize them to carry out attacks in Australia. Four men (Saney Aweys, 26, of North Carlton; Yacqub Khayre, 22, of Meadow Heights; Nayef El Sayed, 25, of Glenroy; and Abdirahman Ahmed, 25, of Preston) were arrested in the raids, while a fifth man (Wissam Mahmoud Fattal, 33) was already in custody on unrelated charges. Police were apparently alerted to the cell late last year after individuals at a local mosque reported the increasingly extremist rhetoric of one of the plotters. Telephone wiretaps were obtained and the security services soon overheard discussions between a key plotter and individuals in Somalia. The Australian plotter appeared to be seeking assistance for individuals to go and train with al-Shabaab in Somalia (The Australian, August 4). Reports indicate that two men apparently did go and train, one of whom (believed to be Walid Osman Mohamed) remains in Somalia, presumably training or fighting with the Somali Islamist fighters. The other man, Yacqub Khayre, is alleged to have returned to Australia on July 14, having obtained a "fatwa" or legal ruling from Somalia authorizing a terrorist attack in Australia (Australian Associated Press, August 27). Telephone intercepts released by police during a bail application hearing revealed Saney Aweys telling an individual believed to be a Somali cleric, "They [the accused] know where they can get them [the guns]. Then they want to penetrate the military forces stationed in the barracks. Their desire is to fan out as much as possible ... until they would be hit [by defensive fire]. Twenty minutes would be enough for us to take out five, six, ten, eight, whatever Allah knows." In a later conversation between Nayef el Sayed and Wissam Fattal, Fattal says, "We are doing something very terrific for Allah. We are working together on a great monstrous thing and we will need to persevere." Fattal and El Sayed are alleged to be the central figures in the plot, with El Sayed apparently acting as a local recruiter for al-Shabaab, while Fattal was seen by police scoping out the Holsworthy Military barracks in New South Wales, the cell's presumed target (The Australian, August 25). Located outside of Sydney, Holsworthy is one of Australia's largest military bases. However, police also admitted during the hearings that they had so far uncovered no actual weaponry during their searches of properties related to the case (The Australian, August 25). Furthermore, there was some suggestion during the bail hearings that police may have relied on a covert

"civilian" agent within the group to obtain information. While defense lawyers did not pursue this avenue of questioning during the bail application, they did state they would pursue it during a later trial (The Age [Melbourne], August 26). It was unclear how much the apparent leak of the story to The Australian newspaper prior to the arrests would affect the trial. Australia's Federal Police have vowed to carry out a thorough investigation. The bail applications by El Sayed, Khayre, and Aweys were all rejected, with the judge assessing the men as a "serious flight risk" and the charges against them serious enough to warrant continued detention. The men's lawyers used the opportunity to complain about the manner in which their clients were being detained, likening them to "Guantanamo Bay-like conditions" (AAP, August 27). At least partly in response to the alleged plot, the Australian government officially announced that it was listing al-Shabaab as a terrorist organization on August 21. The proscription of the group means that it will be an offense "to be a member of, associate with, train with, provide training for, receive funds from, make funds available to, direct or recruit for al-Shabaab." While it has been involved in military and intelligence operations in the global struggle against Islamist extremist groups, mainland Australia has thus far mostly been spared the threat of home-grown terrorism. Australians have been targeted abroad, however, most notably in the 2002 Bali bombings in which 88 were killed. More recently three Australians were among those killed in the July 17 attack in Jakarta. At home there have been fewer such plots, with the cell around radical preacher Abdul Nacer Benbrika (who was incarcerated for 15 years along with six followers earlier this year) proving an exception to the rule (Herald Sun [Melbourne], February 3). A 2007 investigation codenamed Operation Rochester investigating possible links between Australia's 16,000 strong Somali community and international terrorism apparently dissipated after nothing was found (The Australian, August 4). Two days after the arrests, al-Shabaab spokesman Shaykh Ali Mahmud Raage (a.k.a. Shaykh Ali Dheere) issued a statement dismissing reports that the detainees were in any way members of al-Shabaab, claiming the men were arrested solely because they were Muslims (Dayniile, August 6). One suspect, Wissam Mahmoud Fattal, took the opportunity of his appearance before a magistrate to shout denials of his involvement. "You call us terrorists - I've never killed anyone in my life...Your army kills innocent people in Iraq and Afghanistan and Israel takes Palestinian land by force" (BBC, August 31). Though a magistrate has allowed the case to continue, defense lawyers are disputing the quality of the evidence. One proclaimed, "There was no imminent terrorist attack," while another insisted, "Not only is there an absence of compelling evidence, there is an absence of any evidence" (Australian Broadcasting Corporation, August 27; AAP, August 27). Given the complexity of a case like this - Australian security services indicated that links to the plot extended as far as Kenya, Somalia and the United Kingdom - it is unlikely that the men will face court for at least another year or more, meaning most information on the group will remain outside the public domain. While international press speculation has focused on the apparent link with al-Shabaab, it is unclear exactly why the Somali group would rather abruptly decide to target Australia. While the Royal Australian Navy has deployed an ANZAC class frigate, HMAS Toowoomba, off the Horn of Africa as part of Australia's contribution to coalition efforts against international terrorism and piracy in the Gulf of Aden, Australia is neither the only nor the largest contributor to the operation.

EMP ATTACK COULD WIPE OUT U.S.

The federal government is doing nothing to protect against an electromagnetic pulse (EMP) attack that could wipe out American civilization, Dr. Peter Vincent Pry, a leading expert on the subject, tells Newsmax. For only $200 million to $400 million, the government could protect a key element of the power grid to keep electrical power from being wiped out for years, according to Dr. Pry, a former staff member of the congressional Commission to Assess the Threat to the United States from Electromagnetic Pulse Attack. Yet neither Republicans nor Democrats have been willing to spend that small sum, says Pry, who is president EMPACT America, which is meeting in Niagara Falls, N.Y. this week to spotlight the scandal. A single nuclear bomb exploded over the Midwest would generate an electromagnetic pulse that would destroy the chips that are at the heart of every electronic device. While military and intelligence networks may be shielded against EMP, most of the rest of the country's technological infrastructure is not. An EMP attack would wipe out personal



computers and the internet. Cars would not start, gasoline pumps would not work, and airplanes could not take off. Heat and air conditioning would shut down, supermarkets would have to close, telephones would go dead, water would go out, and radio and television sets would not turn on. Banks and ATMs would shut down, credit cards would become useless, and emergency services and hospital operating rooms would close. In the ensuing chaos, most Americans would die from starvation. We have a 60-day food supply in big regional warehouses, Pry says. Typically when hurricanes take out the electric power grid locally, that food spoils, because it needs temperature control systems and refrigerators to keep it preserved. And if you lose the electric grid across the whole country, you're going to lose all that food that is the best hope for

feeding the American people. The 2008 report of the congressional commission found that the country is shockingly unprepared for an EMP attack. Terrorists or countries like Iran or North Korea could launch an EMP attack and possibly end us as a civilization, and take us out as an actor on the world stage, Pry says. At the least, Pry says, 100 to 200 large transformers used in electrical transmission should be protected against EMP attack. The key for our electric power grid are these big transformers, Pry says. All together, there are about 300 of them. They are absolutely indispensable to the operation of the power grid. If you fry those things, there are only a couple of countries in the world that sell them for export, and it takes a year, at least, to make one of them, Pry says. Equally important are small computers that regulate the power grid. This country can't survive for six months without electricity, let alone a year, Pry says. Everything else would go down after losing electric power. To harden those transformers against an attack would cost a mere $200 million to $400 million, Pry says. For perhaps $20 billion, the entire power grid could be protected, Pry says. By comparison, the stimulus bill costs nearly $800 billion. Yet without electricity, no one would have a job. Pry notes that the Iranians have written extensively about the possibility of wiping out America with an EMP attack. North Korea would also likely be in a position to do that, he says. **To be most effective, an EMP device would be detonated by a missile 200 miles above earth.** A strong missile defense would knock missiles out of the sky before they reach the U.S. But going back to President Reagan's Strategic Defense Initiative dubbed Star Wars. Democrats have consistently ridiculed the idea of an anti-missile defense. President Obama's administration already has cut the Pentagon's missile defense budget by $1.4 billion, or 15 percent. However, Pry says a missile with a nuclear device launched from a ship would be just as effective at taking out the U.S., and no missile defense would work quickly enough to defend against it. Moreover, he notes, a great geomagnetic storm could unleash destruction almost as devastating as an EMP attack. Therefore, Pry says, the only sure defense is the hardening of targets. Pry says the Department of Homeland Security has plans for 15 kinds of disasters, but none of the scenarios deals with an EMP attack. Nor, he says, are there any plans to harden the power grid. The Department of Defense has contingency plans, and they put a lot of effort into planning to come to the rescue in places like Africa and Indonesia in the event that there are natural catastrophes, Pry says. But they don't plan for such contingencies for the American people. Like the government, the press has been asleep on the threat, Pry says. Liberals perceive efforts to prevent an EMP attack as a way to push for funds for anti-missile defense, which the left abhors. If they'd trouble themselves to read the EMP commission report, they would find the EMP commission is not saying strengthen missile defense is the answer, Pry says. While missile defense can be useful against EMP, it's not the first solution, or the best solution. Instead, Pry says, "The best solution is smart planning to protect and recover the critical infrastructures, especially the electric power grid."

SWINE FLU ANTIDOTE DEVELOPED 15 YEARS AGO

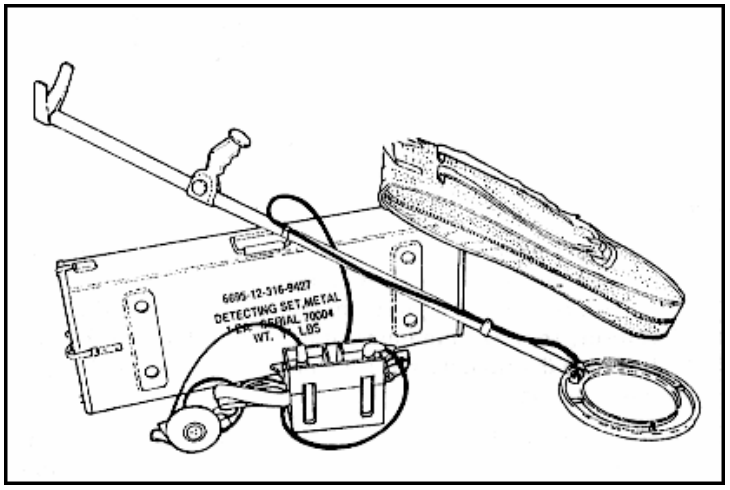
A Russian expert today claimed that an antidote to counter the swine flu virus was developed in Russia some 15 years back under the secret programme for protection against biological warfare. Oleg Chupakhin of Yekaterinburg-based Institute of Organic Synthesis today told a Russian TV channel that an antidote'Triazaverin' developed under the secret programme for protection against biological warfare can destroy the A(H1N1) virus at any stage of disease, including later stages.

TALIBAN MAKES IEDS DEADLIER

The Taliban has been building simpler, cheaper anti-personnel bombs made of hard-to-detect nonmetal components, increasing the number of lethal attacks on NATO forces in Afghanistan, according to a confidential military report. The shift in the use of improvised explosive devices (IEDs) away from larger anti-armor bombs has allowed the Taliban to produce more weapons and hide them in more places as they strive to kill larger numbers of American forces in southern Afghanistan's Helmand province and other contested regions. The change in production from metal-dominated explosives to devices made of plastic is making it more difficult for ground troops to detect the buried IEDs with portable mine-detectors, creating an "urgent need" inside the Pentagon for better detection devices, the report said. The new Taliban tactics are disclosed in a confidential report from the Pentagon's Joint Improvised Explosive Device Defeat Organization, portions of which were obtained by The Washington Times. The area around Now Zad, northwest of Kandahar, has experienced some of the most ferocious fighting for control of southern Afghanistan since the surge of 21,000 U.S. troops began last spring. News reports and military bloggers say Marines on patrol face a constant threat from hidden IEDs. "Although the Taliban still fights with small-arms, rocket-propelled grenades and improvised explosive devices, they have increasingly focused the role of IEDs as antipersonnel devices," the report said. "Smaller, lighter, more quickly constructed and quite often triggered by a victim-operated switch [booby trap], these antipersonnel IEDs have been a significant factor in labeling Now Zad the most dangerous location with the highest U.S. casualty rate in either the Afghan or Iraq theaters." The Aug. 11 report, titled, "The Taliban's

Emerging IED TTPs in the Proving Grounds of Now Zad, Helmand Province," was written by an analyst at U.S. Central Command, which oversees troops in the Middle East and Afghanistan. TTPs is short for tactics, techniques and procedures. The shift in tactics comes at a particularly sensitive time for President Obama. Sentiments inside the Pentagon lean toward sending more troops to Afghanistan, while key Democrats oppose such an expansion as the number of casualties grows in the theater. The research Web site icasualties.org reports 328 NATO fatalities so far this year, already making it the most deadly since the war began in October 2001. The U.S. has lost 190 service members this year, after reporting 155 deaths last year. In the past two months, more than half of the battlefield deaths suffered by NATO troops were caused by IEDs. This month, of 31 fatalities, 15 came from IEDs; in August, 46 of the 77 coalition deaths resulted from these devices, according to icasualties.org. The Pentagon report said the Taliban IED research-and-development program used the Now Zad region to show that smaller, more numerous IEDs kill more people. The rate for dead and wounded for the 2nd Battalion, 7th Marine Regiment stood at one-third of the unit in August, the report said. A typical Marine battalion has 800 to 1,000 troops. A military official, who monitors Afghanistan and asked not to be named because he was not authorized to speak to the media, said the Taliban is shifting to small IEDs for a number of reasons. "You've got the fear factor," the source said. "It's also less costly. It's easier for them to build those things and use them as opposed to running the risk of getting in firefights and losing people. The cost is relatively low. We're fighting guys who from all appearances are from three centuries ago, but we can't figure out how to beat them." The Pentagon report said the Taliban has become adept at mining a road called the "Pakistani Alley" -- so-named because Taliban militants use it to ferry in new fighters from the neighboring country. "U.S. troop movements are split between foot and mounted patrols," the report said. "The terrain and deplorable road conditions often necessitate that foot patrols be conducted on uneven terrain. The Taliban have taken advantage of this by littering the area north of 'Pakistani Alley' with numerous antipersonnel IEDs to maintain control over their northern buffer-zone." Robert Maginnis, a military analyst and Army adviser, said IEDs are tailor-made for Afghanistan. "IEDs are effective in Afghanistan in part because of the terrain," Mr. Maginnis said. "There are few paved roads, which means planting a device in or near a road is easier and harder to detect by visual inspection. The increase in Taliban use of IEDs is due to the increased coalition forces in country, which forced the relatively small Taliban force to adjust its tactics. It stretches the force's impact." Lt. Col. Edward Sholtis, a spokesman for Gen. Stanley McChrystral, the top commander in Afghanistan, told The Times the general has stepped up efforts to disrupt networks before they can plant bombs, and get better intelligence on where they are embedded

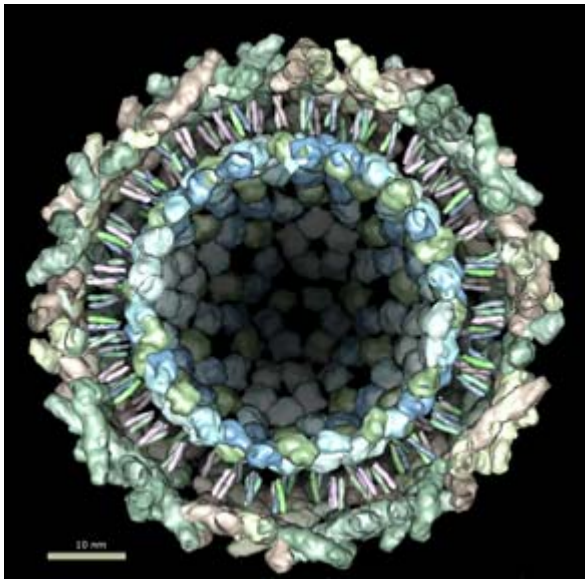
in light of "the weapons' increasing use against coalition forces and because of the impact of a larger number of indiscriminate, victim-operated IEDs on the Afghan people." "Like most everything in Afghanistan, the IED threat here is complex, and we go about addressing it in a number of ways," Col. Sholtis said. "Broadly speaking, there's an offensive component that involves intelligence collection tied to Afghan and coalition operations designed to identify and disrupt the cells that manufacture, place and operate IEDs. "There's also a robust defensive component that involves a comprehensive reporting system that tracks IED events, disseminates threat intelligence to all levels, identifies emerging threats and lessons learned, and trains the force in the latest threats and countermeasures." Two nonmetallic ingredients, salt solution and carbon, are being considered by the Taliban as IED trigger mechanisms, the Pentagon report said. The Taliban can harvest carbon from everyday batteries. This reduces the amount of metal, making detection difficult. "The use of IEDs as antipersonnel mines offers several distinct advantages," the report said. "They are small and easily transported and emplaced. They are easily camouflaged and do not need to be remotely controlled. In addition, antipersonnel IEDs are almost always lethal to their victims and are extremely difficult to detect with current U.S. minesweepers." One Taliban tactic involves waiting until NATO forces enter an IED field. Once a bomb explodes, the militants open fire with mortars and rocket grenades. The military source said the Taliban is also thwarting detection by using long pull-cords rather than an electronic signal to ignite IEDs. This way, the bomb cannot be defeated by electronic countermeasures on vehicles and aircraft that jam the signal. The source, who completed several tours in Afghanistan, said the Taliban strategy has been to abandon some villages rather than fight the Marines head-on. They then watch the Marines' routines and place IEDs along those routes. The Pentagon report said the current mine detector, the AN/PSS-12 (above), is not sufficiently sensitive to pick up the scarce metal in anti-personnel IEDs. "There is an urgent need to identify new man-portable detection platforms to expand the ability of U.S. troops to detect anti-personnel IED-mines," the report concludes. One system now readily available commercially consists of electric field sensors, which can pick up electricity from nonmetallic conductors, the report said.

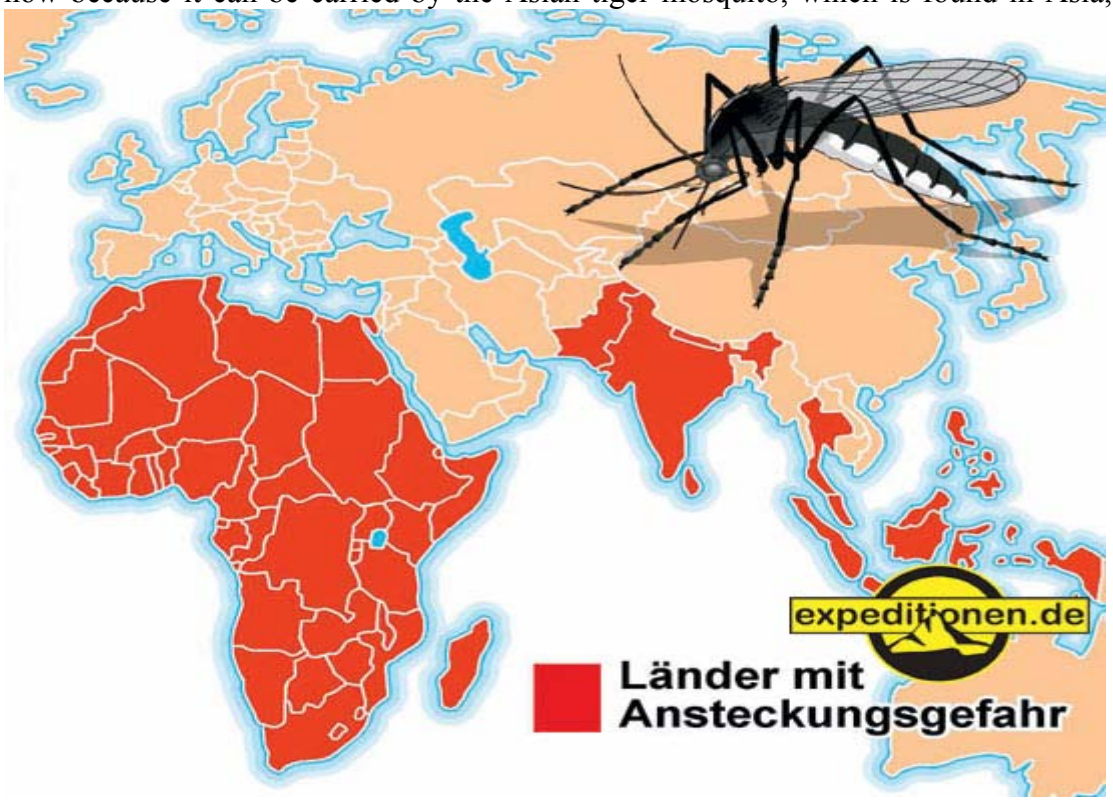


MOSQUITO-BORNE AFRICAN VIRUS A NEW THREAT TO WEST

The United States and Europe face a new health threat from a mosquito-borne disease far more unpleasant than the West Nile virus that swept into North America a decade ago, a U.S. expert said on Friday. Chikungunya virus has spread beyond Africa since 2005, causing outbreaks and scores of fatalities in India and the French island of

Reunion. It also has been detected in Italy, where it has begun to spread locally, as well as France. "We're very worried," Dr. James Diaz of the Louisiana University Health Sciences Center told a meeting on airlines, airports and disease transmission sponsored by the independent U.S. National Research Council. "Unlike West Nile virus, where nine out of 10 people are going to be totally asymptomatic, or may have a mild headache or a stiff neck, if you get Chikungunya you're going to be sick," he said. "The disease can be fatal. It's a serious disease," Diaz added. "There is no vaccine." Chikungunya infection causes fever, headache, fatigue, nausea, vomiting, muscle pain, rash and joint pain. Symptoms can last a few weeks, though some suffers have reported incapacitating joint pain or arthritis lasting months. The disease was first discovered in Tanzania in 1952. Its name means "that which bends up" in the Makonde language spoken in northern Mozambique and southeastern Tanzania. The virus could spread globally now because it can be carried by the Asian tiger mosquito, which is found in Asia,





Africa, Europe, the Americas, Australia and New Zealand. In the United States, the mosquito species tends to live in southern regions east of the Mississippi but has been found as far afield as western Texas, Minnesota and New Jersey. Health officials are greatly concerned about the appearance of Chikungunya in the islands of the Indian Ocean -- Mauritius, Seychelles and Reunion -- which have beach resorts frequented by European tourists. "It is hyper-endemic in the islands of the Indian Ocean," Diaz

told the meeting. "Travel by air will import the infected mosquitoes and humans," he added. "Chikungunya is coming." Diaz warned of possible double-infections involving Chikungunya and dengue fever or malaria, which are also carried by the Asian tiger mosquito. The spread of the disease could be greatest in so-called mega-cities such as Mumbai and Mexico City, which have large and impoverished populations, poor health controls and water systems that provide ready breeding grounds for mosquitoes, Diaz said. West Nile, spread by a different mosquito species, first appeared in New York in 1999 and now can be found in most of North America.

NEW CLASS OF SENSORS FOR DETECTING NEUROTOXINS

Soman, Tabun, and Sarin (which has already been used in terrorist attacks) are chemical weapons that attack the nervous system. When inhaled, these extremely toxic organophosphates can lead to death within minutes. The search for fast, simple detection methods for these colorless and odorless gases, which are unfortunately relatively easily manufactured, is correspondingly urgent. Julius Rebek, Jr. and Trevor J. Dale at the Scripps Research Institute in La Jolla, California (USA) have now developed a new class of sensors that detect these neurotoxins up to five orders of magnitude faster than previous reagents. As the scientists report in the journal Angewandte Chemie, these substances not only selectively detect the neurotoxins, they simultaneously render them harmless. Previous detection methods for organophosphates suffer from the fact that they are not sensitive enough, are too complex to use, and cannot be used in the field. In order to overcome these limitations, Rebek and Dale recently developed a new detection agent with a reaction time in the second range, which was still not fast enough. Step by step, they continued to develop their reagent. This has now led to a class of sensors consisting of an aromatic ring system and equipped with an oxime group (-C=N-OH). This type of group binds extremely fast to organophosphates (the researchers carried out their experiments with harmless neurotoxin analogues). Immediately neighboring the oxime group, the molecule has an alcohol group (-OH). This ensures that the reaction product is immediately split off again, which is important because it is as toxic as the original neurotoxin. This process involves an intramolecular ring closure. The aromatic ring system promotes the tendency of the sensor to undergo this splitting reaction with ring closure. Furthermore, it provides the actual signal that makes the presence of the organophosphate visible: the ring system is a fluorescent dye, and the fluorescence becomes significantly more intense as soon as the structure of the sensor molecule is changed by the ring closure reaction. This optical detection is four to five orders of magnitude faster than the original detection reagent. It should be possible to develop a simple, rapid-response, highly sensitive detection method for organophosphates based on these new reagents. Because the neurotoxins are rendered harmless by the detection reaction, it **may also be possible to develop combined devices for the simultaneous detection and neutralization of the toxins.**

DEVELOPMENTAL DRUG MAY HELP BONE FRACTURES HEAL AFTER RADIATION EXPOSURE

A drug currently under development by the University of Pittsburgh School of Medicine may help bone fractures heal more quickly after radiation exposure, according to a study by Pitt researchers. The study's results will be presented during the American Society for Radiation Oncology (ASTRO) annual meeting in Chicago. The drug, JP4-039, is a free-radical scavenger targeted to the mitochondria, the energy generator of all cells. For this study, researchers compared the healing time of fractures in a mouse model system treated immediately after radiation exposure with JP4-039 against a control group of mice that did not receive the drug. The fractured bones in the group treated with JP4-039 healed much more rapidly than the control group. "This study has important implications on two levels," said study author Abhay S. Gokhale, M.D., M.B.A., chief resident in the Department of Radiation Oncology. "From a patient care standpoint, this drug could eventually be beneficial to pediatric cancer patients who are vulnerable to the late effects of radiation treatment on bone growth and development. From an emergency response perspective, if the ideal dosage of the drug is developed and we find a way to have it easily administered, it could potentially help people exposed to radiation in an accident or attack." The study, carried out in the laboratory of Joel Greenberger, M.D., and Michael Epperly, Ph.D., with co-investigator Peter Wipf, Ph.D., in the Department of Chemistry at Pitt, is overseen by Pitt's Center for Medical Countermeasures Against Radiation. The center is dedicated to identifying and developing small molecule radiation protectors and mitigators that can be easily accessed and administered in the event of a large-scale radiological or nuclear emergency. Previous research conducted by this team showed that JP4-039 helps protect cells from the damaging effects of radiation.

SPOTTING A TERRORIST

Metal detectors, X-ray machines, and dogs are used at security checkpoints to look for bombs. Now a next-generation technology under development in Cambridge will look for the bomber.With funding from the US Department of Homeland Security, Draper Laboratory and other collaborators are building technology to detect potential terrorists with cameras and noninvasive sensors that monitor eye blinks, heart rate, and even fidgeting. The project, called the “Future Attribute Screening Technology,’’ is aimed at allowing security checkpoint personnel at airports or large public events to make better, faster decisions about whether a person should get follow-up screening. At a demonstration of the technology this week, project manager Robert P. Burns said the idea is to track a set of involuntary physiological reactions that might slip by a human observer. These occur when a person harbors malicious intent - but not when someone is late for a flight or annoyed by something else, he said, citing years of research into the psychology of deception. The development team is investigating how effective its techniques are at flagging only people who intend to do harm. Even if it works, the technology raises a slew of questions - from privacy concerns, to the more fundamental issue of whether machines are up to a task now entrusted to humans. “I know what they’re doing, and I’m ambivalent,’’ said Paul Ekman, a

consultant on the project and an eminent psychologist who pioneered the study of facial expression and emotion. “I can understand why there’s an attempt being made to find a way to replace or improve on what human observers can do: the need is vast, for a country as large and porous as we are. However, I’m by no means convinced that any technology, any hardware will come close to doing what a highly trained human observer can do,’’ said Ekman, who directs a company that trains government workers, including for the Transportation Security Administration, to detect suspicious behavior. The researchers hope to have the device ready for field testing in 2011, perhaps at a border crossing. If it works - even Burns concedes that’s no sure thing - it could be used by government agencies. There are no immediate plans for commercializing the technology, which has cost about $20 million to develop. At the demonstration, actors walked one-by-one into a room with a metal detector, a guard, and a set of sensors that monitored their reactions while they spent a few minutes answering a dozen questions, ranging from where they lived to whether they planned to detonate a device. Most of the system’s sensors are commercially available. An eye tracker measures blinks, gaze direction, and pupil dilation. Two separate devices track heart rate and respiration. A thermal camera measures the way heat changes on a person’s face. And underfoot, an accessory normally used with the Nintendo Wii gaming system, has been repurposed to detect fidgeting. Burns said being able to simultaneously observe a suite of traits - such as slight variations in the interval between heartbeats, the way a person’s pupils dilate, the way the heat on their face changes, or whether they stop moving when asked a certain question - makes the system more accurate. “I think it is very interesting, but it also sets off alarm bells,’’ said Jennifer Lerner, a professor of public policy and management at the Harvard Kennedy School who has studied how facial expressions can be a readout of biological responses to stress. “The key here is to not to get too impressed by the physiological measurement and to pay attention to the validity of the science.’’ Researchers are evaluating how well the technology can detect a person’s intentions to do harm, compared with a human observer’s ability to do the same thing. They say initial results are promising. They also plan to test whether the software can distinguish malicious intent from other things that fluster a person. In the future, for example, experiments might include subjects who have to run to get to the screening checkpoint, or have an initial experience with a rude guard. Hardened terrorists might be able to control their heartbeat or breath, but researchers say that is one reason they are looking at multiple traits thought to be involuntary. Even if someone could control many physiological factors, researchers said that a person who lacked normal bodily reactions to questions would also raise a red flag. A privacy watchdog, after being told of the technology, expressed concern the technology would misidentify innocent people who might then be branded as potential terrorists by the Department of Homeland Security. “For goodness sakes,

you are at an airport,'' said Lillie Coney, associate director of the Electronic Privacy Information Center. "How many people are calm? People running to get to the gate, sweating through the security line, will I get there before my plane takes off?'' "This agency does maintain watch lists; it does maintain a number of other programs. It's important for them not to create files or reports or records on individuals because this technology picked up something,'' Coney said. Burns said the technology would erase data after each screening, and no personal information would be used to identify subjects, create files, or make lists. He said there would be close oversight, and regulations would be put in place to protect privacy if and when the technology is deployed. Ultimately, he hopes the technology can be developed to a point where it does not depend on an interviewer asking questions, but scans people as they walk through a checkpoint. "I remember when I could freely go through airports, buildings,'' Burns said. "I'd like to restore that - walk through security with my 4-year-old daughter, and not have her walk in front of me.''

Μπορεί η παρακάτω είδηση να μην συνάδει με το περιεχόμενο του Newsletter αλλά είναι από εκείνες που δίνουν μια ανάσα στην καθημερινή μιζέρια μας και το συνεχές κτύπημα του κεφαλιού σε τοίχους αδιαφορίας και εγκαφαλικής δυσκαμψίας που πιθανόν κάποια στιγμή να αποτελέσουν το πεδίο μελλοντικής έρευνας του λαμπρού γενετιστή ! Συγχαρητήρια κύριε Καθηγητά !

ΣΤΗΝ ΕΛΛΑΔΑ ΥΠΑΡΧΕΙ ΕΠΙΣΤΗΜΟΝΙΚΗ ΕΡΕΥΝΑ

ΣΥΝΕΝΤΕΥΞΗ: ΓΙΑΝΝΗΣ ΔΕΒΕΤΖΟΓΛΟΥ
ΔΗΜΟΣΙΕΥΘΗΚΕ: Τετάρτη 30 Δεκεμβρίου 2009, ΤΑ ΝΕΑ

ΒΡΑΒΕΥΤΗΚΕ χθες από την Ακαδημία Αθηνών για το επιστημονικό και ερευνητικό έργο του σε όγκους καρκίνου του μαστού. Ο Αθανάσιος Παπαβασιλείου, καθηγητής της Ιατρικής Σχολής του Πανεπιστημίου Αθηνών, υποστηρίζει ότι στην Ελλάδα υπάρχει επιστημονική έρευνα, ενώ από τα πιο σοβαρά προβλήματα της Ιατρικής Σχολής εκτιμά ότι είναι η υπερπληθώρα των φοιτητών και οι ελλιπείς κτιριακές υποδομές.

Για ποια εργασία βραβευθήκατε από την Ακαδημία Αθηνών;

Για την πειραματική μελέτη μας με τίτλο «Έκφραση του γονιδίου "p21waf1/Cip1"σε στρωματικούς ινοβλάστες πρωτογενών όγκων του μαστού» και συγγραφείς τους: Γεώργιο Τρίμη, Ιουλία Χατζηστάμου, Αικατερίνη Πολίτη, Ιπποκράτη Κιάρη και Αθανάσιο Γ. Παπαβασιλείου. Η εργασία δημοσιεύθηκε στο υψηλού κύρους διεθνές βιοϊατρικό περιοδικό «Human Molecular Genetics».

Σε τι θα μπορούσε να έχει πρακτική εφαρμογή;

Τα αποτελέσματα της μελέτης μας συνεισφέρουν στη διαλεύκανση του πώς γονίδια επηρεάζουν την αντίδραση του στρώματος και την απόκριση ασθενών στη χημειοθεραπεία, ενώ παράλληλα ανοίγουν τον δρόμο για τον σχεδιασμό νέων

θεραπευτικών στόχων που θα βασίζονται στην εκλεκτική τροποποίηση στρωματικών στοιχείων του όγκου.

Είναι γραμμένη στο DNA ενός κυττάρου η εξέλιξή του σε καρκινικό;

Εξαιρώντας τους κληρονομικούς καρκίνους, η καρκινογένεση, όπως την αντιλαμβανόμαστε σήμερα, αποτελεί πρόβλημα επεξεργασίας πληροφοριών του κυττάρου, στο οποίο συμμετέχουν καθοριστικά αρκετοί μη-γενετικοί (επιγενετικοί) παράγοντες.

Μπορούμε να προλάβουμε ή να αποτρέψουμε τον καρκίνο;

Ναι, εφόσον κατορθώσουμε να χαρτογραφήσουμε με λεπτομέρεια τα «πληροφορικά» δίκτυα που ελέγχουν τις φυσιολογικές κυτταρικές λειτουργίες.

Λένε ότι η Ελλάδα δεν έχει «χώρο» για επιστήμονες...

Τέτοιες απόψεις υπήρξαν και εξακολουθούν να λειτουργούν ως άλλοθι συμβιβασμού με «σύμφυτες μιζέριες» και «ιδεολογικού εξοστρακισμού» της αριστείας...

Σε ποια πανεπιστήμια του εξωτερικού έχετε φοιτήσει;

Μεταπτυχιακές σπουδές στο Τμήμα Βιοχημείας και Μοριακής Βιοφυσικής της Ιατρικής Σχολής του Πανεπιστημίου Columbia της N. Υόρκης των ΗΠΑ, απ΄ όπου και έλαβα το διδακτορικό μου (PhD), και μεταδιδακτορική έρευνα στο Τμήμα Μοριακής Ιολογίας της Ιατρικής Σχολής του Πανεπιστημίου Columbia και στο Ευρωπαϊκό Εργαστήριο Μοριακής Βιολογίας (EMBL) της Χαϊδελβέργης στη Γερμανία.

Οι διακρίσεις σας;

Βραβείο Νεαρού Ερευνητού της Αμερικανικής Εταιρείας Μικροβιολογίας. Εκλογή ως Εταίρος (Fellow) της Διεθνούς Εταιρείας Μοριακής Ιατρικής. Βραβείο Ακαδημίας Αθηνών, Βραβείο Εμπειρικείου Ιδρύματος.

Πόσο ιδιαίτερο είναι το Βραβείο της Ακαδημίας Αθηνών;

Η επιβράβευση από την Ακαδημία Αθηνών αντανακλά το κύρος του υψίστου ακαδημαϊκού θεσμού στη χώρα μας.

Εάν ξεκινούσατε σήμερα την καριέρα σας, θα παραμένατε στην Ελλάδα;

«Αργοπεθαίνει όποιος δεν αναποδογυρίζει το τραπέζι, όποιος δεν διακινδυνεύει τη βεβαιότητα για την αβεβαιότητα για να κυνηγήσει ένα όνειρο», γράφει ο Πάμπλο Νερούντα...

Τι δυσκολίες έχει η επιστημονική έρευνα στη χώρα μας;

Τη χαμηλή-έως ανύπαρκτη χρηματοδότηση, το γεγονός ότι εξακολουθεί να υπόκειται σε ασύλληπτες γραφειοκρατικές διαδικασίες και την έλλειψη κεντρικού συντονισμού.

Τι χρειάζεται για να δημιουργηθούν και να συντηρηθούν οι βασικές υποδομές;

Είναι επιτακτική πλέον η ανάγκη θεσμοθέτησης ενός φορέα χάραξης της ερευνητικής πολιτικής σε εθνικό επίπεδο, με χρονικό ορίζοντα που θα υπερβαίνει και θα είναι ανεξάρτητος της θητείας τού ελληνικού Κοινοβουλίου.

Τα καλύτερα ερευνητικά κέντρα;

Υπάρχουν αρκετές νησίδες αριστείας και στα ερευνητικά ινστιτούτα και στις ιατρικές σχολές των πανεπιστημίων. Το ζητούμενο είναι η ενθάρρυνση της συνεργασίας τόσο μεταξύ τους όσο και με τον ιδιωτικό τομέα.

Καταλήψεις, καταστροφές... Γιατί κάποιες φορές αντιδρούν τόσο έντονα οι φοιτητές;

Ίσως αυτά που προσφέρουμε εμείς, το εκπαιδευτικό προσωπικό του Πανεπιστημίου, να υπολείπονται εκείνων που προσδοκούν οι φοιτητές μας. Ίσως, πάλι, και να θεωρούν κάποια κεκτημένα αυτονόητα, σε μια εποχή που ο διεθνής ανταγωνισμός τα έχει προ πολλού ξεπεράσει...

Τα προβλήματα που αντιμετωπίζει η Ιατρική Σχολή;

Υπερπληθώρα φοιτητών και ελλιπείς κτιριακές υποδομές ταλανίζουν τη Σχολή μας, όπως και τα γενικότερα προβλήματα που ταλαιπωρούν το ελληνικό πανεπιστήμιο.

Πώς θα μπορούσαν να αντιμετωπιστούν;

Όταν οι λειτουργοί της Πολιτείας αποφασίσουν, επιτέλους, να εγκύψουν με ειλικρινές ενδιαφέρον στην επίλυσή τους, παραμερίζοντας αυτό που υποκριτικά – και θρασύτατα! – επικαλούνται ως «πολιτικό κόστος»...

Σας βρίσκει σύμφωνο ο θεσμός του πανεπιστημιακού ασύλου;

Είναι μια ζωντανή ακόμη ιστορική κατάκτηση για τη χώρα μας, συνδεδεμένη με σχετικά πρόσφατα γεγονότα της πολιτικής μας Ιστορίας, αφορά όμως την ελεύθερη διακίνηση ιδεών και όχι την προστασία κάθε λογής παρανομούντων που καταστρέφουν την περιουσία του ελληνικού λαού...

Τι θα μπορούσε να βελτιωθεί;

Δεν απαιτούνται βελτιώσεις. Ο ισχύων νόμος, αν εφαρμοζόταν, θα μπορούσε πραγματικά να καλύψει πλήρως τις ανάγκες και να έχουν αποφευχθεί πολλά τραγικά γεγονότα.

Τα παιδιά σας πού σπουδάζουν;

Έχω δύο γιους που φοιτούν σε πανεπιστήμια της Βοστόνης.

Γιατί δεν επέλεξαν κάποιο πανεπιστήμιο στην Ελλάδα;

Οι «ρότες» των γονιών είναι πολλές φορές καθοριστικές...

Σκοπεύουν να λάβουν τα κατάλληλα εφόδια και να «επαναπατριστούν»;

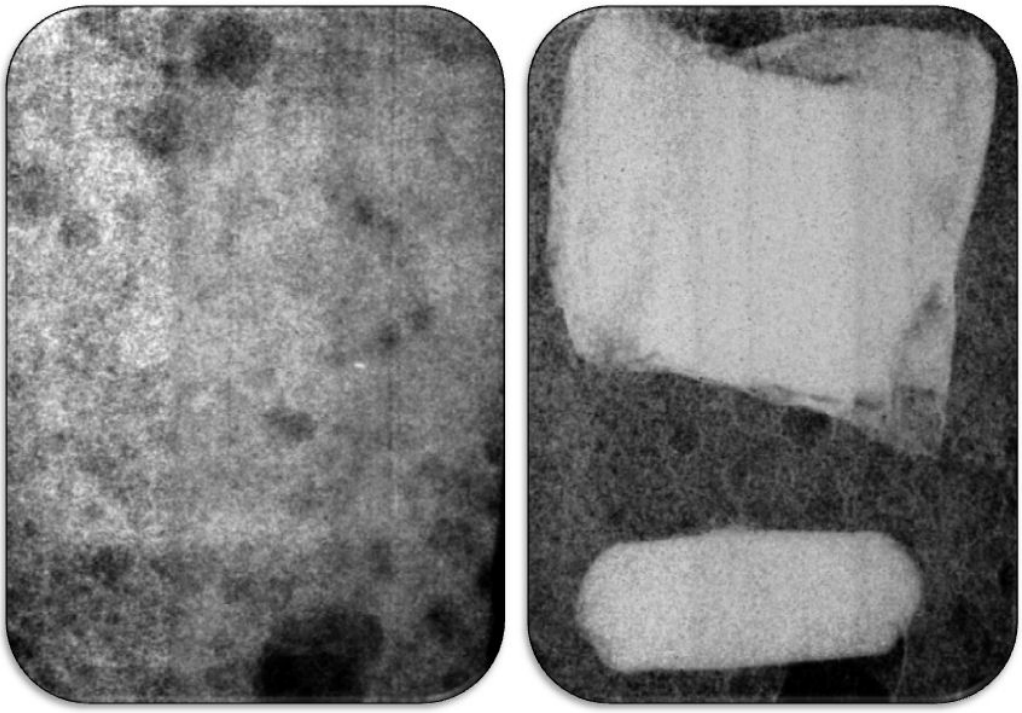
Το ελπίζω!

JIHADISTS GROOM CHILDREN IN THE UK UNDER 10

Police have identified children as young as seven being groomed for terrorism, with some expressing a wish to become suicide bombers. Up to 10 primary school pupils, aged between seven and 10, have been placed on a government outreach programme for individuals considered at risk of being radicalised and turning to violence. Some have taken inspiration from jihadi websites or after viewing extremist material in Islamic bookshops. One child was referred to the programme by his teacher after writing on a school book: "I want to be a suicide bomber." Other youngsters were identified by their parents after suddenly adopting traditional Muslim dress or espousing extremist views. At least 228 people, mostly teenagers and young men aged 15-24, have been referred to the anti-terrorism Channel project after being singled out as "potentially vulnerable to violent extremism". "For people to be identified there have to be distinct changes in behaviour and warning signs," said Craig Denholm, deputy chief constable of Surrey police who oversees the programme. "We assess each one on its own merits. There is a very small number of children aged seven, eight and nine." The Channel project was launched after the 7/7 suicide attacks in London in 2005, when 52 commuters died. It is run by the Home Office and the Association of Chief Police Officers, but also involves schools, social workers and youth workers. Those displaying "concerning behaviour" are monitored by police, their parents are alerted and some are provided with mentors with moderate views. "The programme is not appropriate for people who are dangerous or have passed over into violent extremism," said Denholm. "The whole purpose is to persuade." Community policing tactics have been used in an attempt to divert them from an extremist path. Some of the children are offered "diversionary" activities, such as football coaching, or are sent on outdoor adventure courses to try to integrate them into mainstream society.

CRACK NEW SCANNER LOOKS FOR BOMBS INSIDE BODY CAVITIES

The "underpants bomber" has renewed calls for new and more invasive security measures. Already, there's a push to install scanners that show travelers' naked bodies



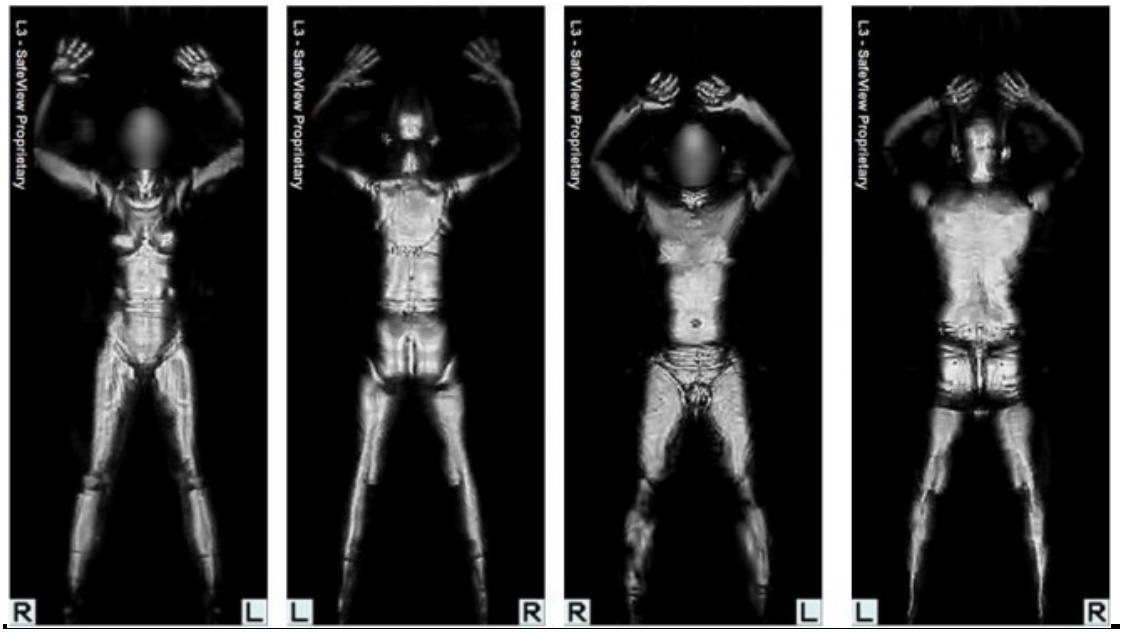
Conventional Radiograph DEXI™ Technology

through clothing, using either millimeter wave or backscatter X-ray imaging. But even those scanners might not have caught the terrorist who nearly brought down Northwest flight 253. That's why one company is trumpeting a sensor that can supposedly "detect substances such as explosive materials … hidden inside or outside of the human body." First step: Actually build a human-sized machine. There has already been one report of a suicide bomber carrying explosives internally. Many sources, including the BBC, carried an early report suggesting that Abdullah Hassan Al Aseeri adopted the new tactic of "carrying explosives in his anal cavity" for an attack in September. The target, a Saudi prince, survived, but Aseeri was reportedly blown in half by the blast. Later reports suggest the explosives were actually sewn into his underwear, but security experts believe there is a real danger of "internally carried" bombs, a technique used for years by drug smugglers. Nesch, a company based in Crown Point, Indiana, may have a solution. It's called diffraction-enhanced X-ray imaging or DEXI, which employs proprietary diffraction enhanced imaging and multiple image radiography. Rather than simply shining X-rays through the subject and looking at the amount that passes through (like a conventional X-ray machine), DEXI analyzes the X-rays that are scattered or refracted by soft tissue or other low-density material. Conventional X-rays show little more than the skeleton, but the new technique can reveal far more, which makes it useful for both medical and security applications. "Our patented technology can detect substances such as explosive materials, narcotics, and low-density plastics hidden inside or outside of the human

body," company CEO Ivan Nesch claims. DEXI allows explosives to create contrast, he adds, so it would be able to detect both the underpants bomber and the shoe bomber before they boarded. The image above shows how a conventional radiograph does not detect two packets of "illegal materials" concealed in soft tissue, while they are plainly visible in when DEXI technology is used. The process of taking the images, analyzing them, and then recognizing substances of interest — such as explosives — can be automated. Alerts issued can be computer-generated. Security staff would simply have to get passengers in and out of the imaging unit. "The initial expected throughput is approximately one to two passengers a minute," according to Nesch. "Once installed and tested in real applications, the throughput will be increased." Nesch has already demonstrated the technology with a unit originally designed for imaging small animals. The next stage is a human-sized unit, which is being "finalized for extensive testing." Nesch plans to start taking orders for the new unitin March this year. Of course, X-ray scanners always bring up a concern over the level of radiation involved. One of Nesch's corporate slogans is "Less radiation, more information," as DEXI uses significantly less radiation than other approaches. "It is far less than what a passenger would receive simply by flying on an airplane across the United States," says Nesch. "Passengers who are imaged using DEXI security will be exposed to approximately 50 times less radiation than that of a conventional radiograph. " There is likely to be a ready market for the new technology. Although an X-ray might be seen as more intrusive than an image of the outside of your body, it may be less controversial. In Britain, plans for "naked body" scanners may run into trouble because they break British child pornography laws: Creating "indecent" images of children is illegal. Those scans may also offend the modesty of some Muslims. DEXI may be able to see into your body cavities, but it may be less obnoxious than some of the alternatives.

UNDERWEAR BOMBER RENEWS CALLS FOR 'NAKED SCANNERS'

After an alleged terrorist unsuccessfully tried to detonate his explosive underwear on a Christmas Day flight to Detroit, current and former American officials are now



using the failed attack to push for more airport scanners to spot such explosives — and a lot more. The Transportation Security Administration in recent years has tried out a series of "whole-body imagers" to look for threats that typical metal detectors can't find. These systems are the only way that smuggled explosives, like the one officials say was brought on the Christmas flight, can be reliably found. "You've got to find some way of detecting things in parts of the body that aren't easy to get at," former Homeland Security chief Michael Chertoff told The Washington Post. "It's either pat-downs or imaging." The problem, privacy advocates say, is that a zap from one of the devices amounts to a "digital strip search" from a system "designed to capture, record, and store detailed images of individuals undressed." TSA has worked with two basic technologies to upgrade its passenger screening systems. Millimeter-wave sensors emit radio frequencies, and measure the differences in radiated energy. The result is a detailed, 3-D image of the passenger that looks sort of like a photo negative. The TSA currently has 40 of these machines installed at 19 airports. Six airports have a machine each for primary screening. The other 34 are used for follow-up searches at 13 airports. The agency handed out a $25 million contract to Rapiscan Security Systems in October for 30 more of the machines. Similarly, backscatter x-ray scanners send out low-intensity beams, and watch how the x-ray photons get reflected back. (Old-school machines simply sent the x-ray through the object.) "Elements with lower atomic numbers (fewer protons) on the periodic table scatter X-ray photons very powerfully, while elements located farther down on the periodic table tend to absorb more photons than they scatter. Most organics are located closer to the start of the periodic table. So backscatter systems are very good at imaging organic material — much better than dual-energy systems. They easily pick up the scatter patterns of drugs and explosives and body parts," notes one helpful description. TSA has ordered 150 backscatter units, after 46 of the sensors were used at 23 airports in a pilot project. But it's unclear how far the TSA will be allowed to go in deploying these systems. Because the same technology that allows the scanners to find explosive underwear can also provide some rather revealing glimpses of passengers' bodies. The agency says there's no privacy problem. "Facial features" (and, presumably, other body parts) "are blurred when our officers see the images," the TSA insists. Nor will the agency "keep, store or transmit images. Once deleted, they are gone forever…. For additional privacy, the officer viewing the image is in a separate room and will never see the passenger, and the officer attending to the passenger will never see the image." "These images are friendly enough to post in a preschool. Heck, it could even make the cover of Reader's Digest and not offend anybody," the TSA noted on its blog. But privacy groups aren't exactly comforted by the agency's assurances. TSA has already reversed earlier stands on the scanners, the groups say. The Electronic Privacy Information Center filed a lawsuit against the Department of Homeland Security on Nov. 9, to force it to give up information about the scanners. "TSA has stated that whole-body imaging would not be mandatory for passengers," the Center noted in its complaint. "On Feb.18, 2009, TSA announced that it would require passengers at six airports to submit to whole-body imaging in place of the standard metal detector search, which contravenes its earlier statement." The House of Representatives voted 310 to 118 in June to pass a measure that prohibits the TSA from using whole-body imaging as a primary means for screening passengers. The legislation's prime sponsor, Rep. Jason Chaffetz, said Sunday that he stands by the measure. "I believe there's technology out there that can identify bomb-type materials without necessarily, overly invading our privacy," he told the Salt Lake Tribune. "Yes, there is some brief violation of privacy with a full-body scan," Rep. Peter King,

the top Republican on the House Homeland Security Committee, told Face the Nation. "But on the other hand, if we can save thousands of lives, to me, we have to make that decision, and we have to come down on the side of saving thousands of lives." But that logic makes about as much sense as the TSA's new rules forcing passengers to stay in their seats for the last hour of a flight, says security guru Bruce Schneier. "It's the same magical thinking we're used to getting from the TSA," he tells Danger Room. "Descend on what the terrorists happened to do last time, and we'll all be safe. As if they won't think of something else."

KAZAKHSTAN OPENS ITS THIRD BIO-MONITORING STATION IN ALMATY

Kazakhstan has opened its third biological agent monitoring station in Almaty. The new monitoring system has been built under the Cooperative Threat Reduction (CTR) program, which is better known as the Nunn-Lugar Program. The new facility is the 18th built in the world. Apart from Kazakhstan's three, the others are located in Azerbaijan (one), Georgia (five), Ukraine (one) and Uzbekistan (eight). Facilities of this kind are designed to establish a first line of defense against infectious diseases by detecting outbreaks earlier and serving as a liaison with medical experts. Two U.S. senators, Richard Lugar, Republican of Indiana, and Sam Nunn, Democrat of Georgia, initiated the CTR program back in 1991. Its goal is to secure and dismantle weapons of mass destruction and their associated infrastructure in former Soviet Union states. At first the disarmament program has worked only in former Soviet countries, but since 2003 it was authorized to operate all around the globe. During the past 18 years, CTR has deactivated 7,504 strategic nuclear warheads, destroyed 752 intercontinental ballistic missiles, eliminated 31 nuclear submarines capable of launching ballistic missiles, eliminated 155 bombers, destroyed 194 nuclear test tunnels (at Semipalatinsk test site) and upgraded security at 24 nuclear weapons storage sites. After the collapse of the Soviet Union, Kazakhstan possessed 1,410 nuclear warheads. These had been completely destroyed by 1995. Joint Kazakhstan-U.S. efforts on non-proliferation of weapons of mass destruction received media attention this week as President Barack Obama signed documents allocating more than one billion dollars in the next fiscal year for funding three high profile threat reduction programs, including the CTR program. Beyond eliminating nuclear, chemical and biological weapons, the Nunn-Lugar program aims at reemploying scientists and redesigning facilities related toweapons of mass destruction to work in peaceful nuclear research. As a nation that voluntary renounced a nuclear arsenal, Kazakhstan enjoys high authority and is recognized as a leader in nuclear disarmament and non-proliferation. (ANI)

VIDEO GAMES TO TRAIN EMERGENCY RESPONDERS

Video games will be used to train workers in emergency response training in the face of a biological attack, U.S. authorities have announced. "The United States has a long way to go, for preparing for disaster," Colleen Monahan, a public health expert at the

University of Illinois in Chicago, told Gamer Headlines. Monahan said that the training required to prepare public health workers and volunteers how to react to a bioattack is incredibly costly and time consuming. “If they [Chicago] had an anthrax

dispersion, they would have to organise fifty five dispensing centres and provide medication to three million people in forty eight hours,” Monahan said. To provide the necessary training in the face of costs, a new "pod" games has been developed that allows players to pick a specific role and make quick decisions, all while dealing with a wide array of people in an artificially simulated disaster scenario. “We can give the cities that are using the game data that tells them what percentage of the work force is prepared," Monahan said. The video game technology is still expensive, however, and authorities are investigating the use of existing virtual worlds such as Second Life as a training ground for the tests. “We could imagine a day where we would have the public also come in and actually experience what it’s like in a virtual world before they actually get there,” Kevin Harvey, one of the creators of the disaster ‘game,' said.

Να μια καλή ιδέα που θα μπορούσε να ενσωματωθεί σε υφιστάμενο εθνικό σχεδιασμό αντιμετώπισης τρομοκρατικής ΧΒΡΠ προσβολής σε αστικό περιβάλλον. Δυστυχώς το «copy-and-paste» πολλοί εμίσησαν καθώς όλοι στην άνωθεν υψηλή προστασία της Πατρίδας...

U.S. POSTAL SERVICE TO BE IN CHARGE OF DRUG DELIVERY IN THE EVENT OF A BIOATTACK

Following an executive order released Wednesday, the U.S. Postal Service will be put in charge of delivering drugs and other medical aid to Americans in the event of a large-scale biological weapon attack. President Obama's order states that the postal service will be in charge of dispensing "medical countermeasures" for biological weapons in the event of an attack because of its ability to deliver to U.S. citizens rapidly. Federal agencies are required to develop a response plan within 180 days including possible law enforcement escorts for postal service workers under the order, which cites anthrax as a primary threat consideration. The order would see local law enforcement supplemented by local federal law enforcement officers. The Secretaries of Homeland Security and Health and Human Services, acting in coordination with the Secretary of Defense, must develop a concept for operations and establish requirements for dispensing medical countermeasures to an affected population through a federal rapid response program. The order, President Obama says, does not supersede the authorities of other agencies and seeks to "mitigate illness and prevent death; sustain critical infrastructure; and complement and supplement state, local, territorial, and tribal government medical countermeasure distribution capacity." The plan is to be developed by the Secretaries of Homeland Security, Health and Human Services, and Defense, and the Attorney General working in coordination with the U.S. Postal Service in consultation with state and local public health, emergency management and law enforcement officials.

Οι υπεύθυνοι των εθνικών αποθεμάτων παρακαλούνται να ελέγξουν τη θερμοκρασία περιβάλλοντος στις αποθήκες φύλαξης και να διαβάσουν το σχετικό ένθετο των φαρμάκων.

NERVE-AGENT ANTIDOTE VULNERABLE

Federal inspectors say states often have not been storing antidote to nerve agent at the proper temperatures, raising concerns about whether it would be effective after a terrorist attack. Worse, "these findings raise concerns about whether similar vulnerabilities also apply to other stockpiled CDC (Centers for Disease Control and Prevention) assets … in the $3.5 billion Strategic National Stockpile, because all assets share the same quality (control) system," said a report released Thursday by the inspector general of the Health and Human Services Department. That may raise eyebrows, especially in Utah, one of the few places where some residents may have been inadvertently exposed to nerve agent because of military testing and operations. Nerve agent testing at Dugway Proving Ground was blamed for killing 6,000 sheep in nearby Skull Valley in 1968, and residents there also blamed possible low-level exposure to it during that event for a variety of physical ills they suffered later. Also, Utah's Deseret Chemical Depot for decades stored 45 percent of the nation's chemical weapons. It reported destroying by incineration almost all of its nerve agent weapons by 2005 and has been destroying mustard gas and other munitions since.

THE ONTOLOGY AND PROCESSING OF HUMAN BODIES

Introduction

Understanding, detecting, characterizing, and predicting the actions and intentions of humans, as perceived from only visual image sequences containing views of those humans over a short period, is a challenging task. In certain applications the value of accurately accomplishing that task is incalculable. In scenarios where abnormal and threatening activities may be very infrequent but dangerous when they do occur, the reliability of human monitoring is often unsatisfactory due to distraction, boredom, fatigue, or psychological conditioning that tend to cause actual threatening situations to be missed. Reliable and economical automation of the visual surveillance function is highly desirable in such applications. In any realistic application, the surveillance must take into account the potential presence in visual scenes that may contain many moving and changing human shapes, multiple moving inanimate and other animate shapes, and a complex background of fixed inanimate shapes, some of which will be of interest and others of no particular interest.

Information Architecture

The information architecture that an automated visual surveillance system can use to enable effective (accurate, rapid, and affordable) measurement and decision processes is complex. Designing that architecture involves addressing several key technical challenges required to devise a complete surveillance system solution. These challenges amount to constructing the information framework that defines how one or more persons observed in a sequence of views of a volume of space appear, articulate

their body posture, interact in space with inanimate and other animate objects and with each other, and move within the field(s) of view of the applicable imaging sensors. The architecture must also enable analysis of the history of how all of these attributes change over a period of time. The *information* architecture must enable a separate but dependent multilevel logical *processing* architecture to perform an insightful situation analysis. That analysis must in turn lead, when and only when appropriate, to alarms or other actions that minimize the adverse effects of any threatening or hostile activity. It must also not lead to excessive false alarms when observing innocent activity sequences.

The characterization of a human as instantaneously observed in a visual scene can be treated as a collection of attributes arranged in a hierarchy of attribute vectors. When the dimension of time is incorporated into the information architecture, the attribute vectors become a "sliding table" or "waterfall" of instantaneous vectors. As a continually evolving set, the waterfall must cover the interval of recent time that any possible scenarios of interest may span.

The attribute vectors for the visual view or views of human forms can be reasonably divided into distinct classes of attributes, each class constituting the elements of one type of attribute vector. The classes and vectors may be denoted as follows:

1. Static attributes (such as apparent height, gender, weight, complexion, clothing)
2. Body element attributes (such as arm extension, knee flexure angle)
3. Posture attributes (such as prone, kneeling, sitting, standing)
4. Coordinate attributes (such as location, orientation, elevation)
5. Kinematic attributes (such as walking, running, throwing, striking, falling)
6. Connection attributes (such as carrying, concealing, lifting, pulling, riding)
7. Attachment attributes (such as picking, connecting, opening)
8. Detachment attributes (such as dropping, cutting, leaving, emplacing, pouring)
9. Etc.

Some of these attribute vectors may have mutual functional dependencies, in that some attributes are determined or updated as sequential views of humans and inanimate objects in a scene are received and processed, as a function of both the new extracted image data but also the prior values of other attributes contained in the information architecture.

An example of a possible Type 1 "static attributes" vector for a detected individual:

Attribute	Type	Units	Value
Height	Integer	Centimeters	1800
Build	Text	List	Stocky
Gender	Binary		1
Complexion	Text	List	Fair
Clothing	Text	List	Long coat
Hat	Test	List	None
Etc.			

Similarly, the Type 3 "posture attributes" vector for a detected individual can be specified as a set of binary attributes, numerical attributes, and a short list of potential posture element classes or, more likely, a combination of these data types. Taking the latter choice of posture attributes vector format design as an illustrative example:

Attribute	Type	Units	Value
Standing	Binary		1
Bending fore or aft	Integer	Degrees	+20
Bending sideways	Integer	Degrees	0
Sitting	Binary		0
Kneeling	Binary		0
Prone	Binary		0
Kicking	Binary		0
Arm extension angle forward up or down	Integer	Degrees	–20
Arm extended forward	Binary		1
Arms outstretched sideways	Binary		0
Arms outstretched angle up or down	Integer		(Not a number)
Special posture trait	Text	List	Leaning support
Etc.			

Obviously many choices are available to suit the range of scenarios anticipated to require situation analysis by a surveillance system.

Requirements for Counter-Terrorism and Counter-Crime Surveillance

A practical intelligent system for persistent surveillance against terrorist or criminal threats must deal with complexities not found in more basic research studies of human motion and action detection. At the same time there are some specific elements of human motion and action that such a surveillance system does not need to detect or classify. A few examples will illustrate these points.

At a realistic surveillance site, inanimate and nonhuman animate objects will, in general, also have a set of attribute vectors that define their state. The set of these objects the vectors of which require definition and processing will depend on the scene being surveilled and specifically its physical significance and vulnerability to potential threats. For example, for a railroad switching site, the state of shortly arriving and present traffic, signals, and switch mechanisms will all be relevant to the surveillance task, and the state of power, communications, and other equipment may also be relevant. Any offtrack vehicles and other items appearing in the scene, whether carried by hand or otherwise arriving, will also be relevant.

Works by numerous researchers have suggested complex information architectures for human actions and interactions. Hundreds of research papers have been published examining various aspects of this mathematical problem in more or less generality. One bibliography is to be found in "A Survey of Advances in Vision-Based Human

Motion Capture and Analysis." However, when viewed as a general research problem of characterizing all human activity, the dimensionality of the required feature spaces and body models is excessively high compared to what is necessary for characterizing threatening criminal or terrorist activities. For example, relating the shaking of an individual's head in any important way to a terrorist threat appears to be problematical. Identification of criminal and terrorist activity will, in general, not be aided by detailed measurement of hand, finger, or head motions but will be identified by the major movements and activities of the humans in the observed scene. Mathematical models that attempt to represent with a large number of n-tuples all of the degrees of freedom of too many joints of the body are both unnecessarily burdensome and subject to excessive production of spurious results.[2] As a practical illustrative example, if a human is observed placing and leaving an object under the rails at a railroad switching intersection, it will not be necessary to also observe exactly how his hands and fingers were holding the object nor the motions of his head while he was performing the emplacement action.

The critical requirements of a real-world counter-threat surveillance system also present serious challenges to the classification models employed in some research studies. It is relevant to question whether the limited performance-predictability of a probabilistic model such as a hidden Markov model can be tolerated when the cost of an incorrect classification of an observed human action may be disastrous. This question is compounded in its seriousness when it is realized that the significant and realistic sample data (image sequences) sets required to enable accurate model development will not ever be available. I suggest that deterministic algorithms for measurement and classification for all levels of a human attributes vector hierarchy like that listed above must be employed so that the specific extent and limitations of system performance can be positively determined in advance using only practically acquirable sample data set sizes.

Processing for Automated Counter-Threat Visual Surveillance

A typical surveillance site will consist of a volume of 3-D space observed by one or more 2-D or 3-D imaging sensors. Various research studies have been conducted of the value of multi-sensor–based human motion analysis. The definitions of the multiple baseline views of a specific site can be considered to be relatively fixed, although infrequent updates may be required in some cases.

The 3-D calibration of the site can usually be quickly performed at the time of system installation through a combination of (remote or local) human operator interactive (point and click) designation of all relevant objects, points, and reference fiducials or planes in the sensors' video scenes as seen by each sensor. This step establishes the *fixed* contents of the database for the specific system or site instance. This information database detailed structure (fields of data) is guided as defined by the system's information architecture. Geometric definition accuracy on the order of one centimetre will usually be sufficient. Calibration will be made even easier if sensors are positioned so that each sensor is positioned within the field of view of at least one other sensor.

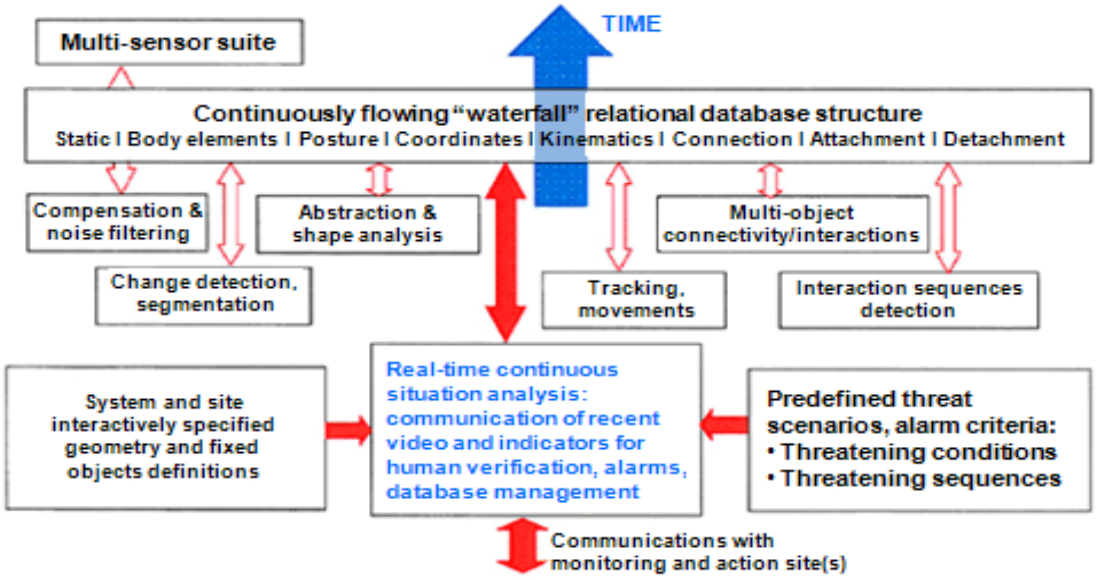
The structure of a database aimed at real-time surveillance in complex scenes can be developed as an extension into the time domain of a traditional relational database

architecture such as a structure compatible with SQL (Structured Query Language). The *variable* elements of the database contents will continually appear, be modified, be updated, and eventually disappear as time goes by. For example, the attribute values in one row of one SQL database table can correspond to the descriptors of a specific individual's human body profile, posture, and action at a particular instant. The sequential rows of any such SQL table can correspond to the sequential frames in which the corresponding human image is present; in much the same manner as the commonly used Auto-index option of an SQL table is invoked. There is an obvious advantage to devising the information storage architecture in a real-time visual surveillance system—specifically, all of the valuable functions necessary for a dynamic situation are already in place in such an existing general database system product—creation of new entities, updating of entities, purging of obsolete entities, relating of entities on any relevant basis, etc.

The system and site interactive setup processes also establish the definition of threats that are relevant to the specific site and the postulated scenarios (threat categories) to be considered. Sensitive areas of the scenes are identified, and the threat categories are designated for each applicable scene area or object. These will include which areas or objects can be approached, which ones can have material removed, which ones can have material deposited, and which ones can have their shape changed.

For clarity, I point out that recognition of human posture or gait for the purpose of identifying specific individuals is a distinctly different research topic that is not addressed here. In fact, the required sensitivities to observables and the required insensitivities to other factors are entirely opposite for activity classification as compared to individual identity recognition.

The continuous processing of sensor scenes to develop the overall dynamic scene information state and analyze a surveillance application situation is diagrammed as shown in Figure 1, where red connections indicate real-time operations.



Surveillance system database and processing architecture

The indicated processing is conceptually similar to any other flexible and robust real-time 3-D machine vision or military reconnaissance and surveillance system. It includes the following processing functionality:

- The sensors' raw scene image frames are continuously compensated for changing illumination and interference conditions.
- All frame-to-frame changes in the scenes are detected and identified as to the objects in the information architecture to which they apply.
- Spurious changes, such as blowing leaves or a waving flag, are edited out from any further consideration.
- New objects appearing in any of the sensors' scenes are initiated into the information architecture.
- Objects leaving the scene are deleted after eventual determination of their non-relevance to surveillance criteria.
- Newly appearing objects are each classified as human, animate non-human, vehicle, or another inanimate class and added to the object set in the information architecture.
- New and previously identified human and non-human objects are segmented out of the background scene based upon image change data and shape criteria.
- Human objects' segmented images that appear are processed to establish attribute vector types 1 and 2 listed above, and this vector will likely be adjusted later as new views develop.
- The essential body structure (pose, posture, and position) of each human is extracted using morphological and body model algorithms to form a continuous history of information architecture vector types 3 and 4 listed above. Tracking of moving objects is an extensively researched topic that is one element of the positional attribute vector components updating process. However, the largely unaddressed tracking challenge of a practical counter-threat surveillance system, especially one aimed at countering terrorist threats that favour inflicting damage on large numbers of people simultaneously, is to track individuals in a crowded venue where uncoordinated motions are occurring throughout the entire scene.
- The time history of the vector types 1 through 4 is determined for each image frame and then inserted into the waterfall vector sets for each human object.
- These histories, together with the data for all other objects in the scenes, are processed to define the kinematic and connection attributes in the information architecture vector types 5 and 6 listed above.
- The changes in the attribute vector waterfalls are processed together to identify the changes in multi-object relationships that will update attribute vectors types 7 and 8 to detect when objects come into contact, are emplaced, are picked up, etc.
- The resulting update of the human and non-human vectors waterfalls is tested against the established set of conditions that define the threat criteria for the system at the particular site where it is installed. Alarms and the recent video sequences are generated and transmitted, respectively, when threat criteria are matched.

Body Posture and Action Detection

Among all of the phases of processing described above for generating and manipulating data in the information architecture, one specific phase stands out as the most critical and challenging step for reliable counter-threat surveillance in realistic scenarios: segmenting active human images, often involving multiple levels of image color, brightness, and contrast within the human profile, from a complex background scene and extracting the major elements of that human's posture and pose. Developing the feature vector of a human in a bland or idealized background is a relatively trivial process. Segmentation of an idealized human silhouette is also relatively straightforward, compared to measuring a human profile outdoors at night under low-contrast dynamic ambient conditions or in any situation where much of the rest of the scene is moving.

I believe that the solution approach for dealing with such scene complexity and dynamics is the acquisition of redundant 3-D data from multiple sensors, combined with the employment of 3-D shape and scene analysis algorithms that are application specific. I have developed that perspective from the experience of implementing solutions for similarly complex 3-D vision applications in tracking of dense vehicular traffic, very high-speed manufacturing of semiconductor parts, and analysis of physical traits and tracking of personnel moving in a public crowd. In each case the optical signature, geometric, motion, and action attributes of the objects that are measured and characterized in a sequence of scenes are chosen to be those relevant to the specific mission of the automatic system. Other attributes are intentionally omitted from the system's decision-making model.

The method employed for instantaneous body posture, motion, and action measurement analysis entails the following major computational approaches:

- Segmentation of the profile of the human body image by joint deterministic analysis of
    - Frame-to-frame change detection, which implies multiple frames processed per second of real time.
    - Comparison of instantaneous frames with reference frames that are compiled, updated, and retained with a relatively long (for example, hours and days) time perspective of the static site appearance for each of the several site views.
    - Multiple levels of edge detection. Edge detection is aimed at ensuring the most accurate possible definition of the human image perimeter. This includes pixel-level analysis of gradients and consistency as well as modelling of the portions of the human silhouette where various clothing or complexion patterns are to be expected.

The essence of the overall logic in this phase of processing is that if something is present that has not "always" been present in the scene, and if that something is moving, and if it is of an interesting size, then it warrants further analysis.

- Gray-level morphological imaging shape analysis to abstract the human body silhouette into basic shape parameters resembling a stick figure. This abstraction process is combined with geometric models to characterize the

basic shape of the different major body parts. These models can develop, over a series of video frames, a 3-D characterization of body shape that distinguishes, for example, frontal torso shape from side-view torso shape.

- The geometric relationship of major body parts is combined using relational database techniques to form an identification of the overall posture and instantaneous activity of each human in the current scenes from all sensors. In many instances the simultaneous information from multiple sensors for one individual human surveilled can be combined to form a more accurate characterization of the current posture and action of that individual.

Integral to the analysis of each human silhouette and associated 3-D surface data is the analysis of those data to detect departures from the norm that indicate that one or more objects is being carried, towed, dragged, held, or otherwise moved in one manner or another. Departures from normal human profile shapes produce body shape abstractions (stick figures and body-part shape parameters) that can indicate the shape, weight, and size of objects that are currently "attached" to the moving or stationary human form. When they are viewed from multiple simultaneous monochrome, color, and/or infrared or thermal sensor images, information can be developed that could not be discriminated in single-view image data. The profile of a weapon, for example, may be impossible to recognize from one view but readily detected in another view. When that has been accomplished, the size and the general type of the weapon can be determined by combining the two, three, or more profiles of the same object held in the hand of the subject individual, as seen from the perspectives of all available sensors.

For brevity, in the images of Figure 2, I provide a simple example illustrating how posture measurements can be made on a previously segmented 2-D human individual image to derive an instantaneous posture attributes vector. The processing steps include abstraction of the human figure into a basic stick figure, detection of the human figure perimeter, and characterization of the best fit of major body parts to a canonical form (in this Illustration case, ellipses). Posture measurement is followed by processing of sequential posture attributes vectors to produce a kinematics attributes vector. Using 3-D information from multiple 2-D sensors, a 3-D model of the instantaneous posture can be developed.

Sample intermediate steps in posture attributes development (for clarity, not all body part shape ellipses are shown)

It should be understood that each step of processing employs not only the representation form in the preceding step, but rather all information previously developed. Stated otherwise, the stick figure geometry, the body part shape approximation ellipses, edge perimeter information, and other surface pattern data that

may be developed are all usable to develop the angles, lengths, and other attributes comprising the elements of the continuous sequence of posture attribute vectors.

Information Architecture Distribution

While the ontology of human form and action description and the structure of the information architecture as a whole are important aspects of a system design, the wide range of surveillance system requirements also calls for an architecture that is amenable to distribution. Some counter-threat surveillance is narrow in the scope of spatial and/or time dimensions and/or threat action types. Others may be highly dispersed in any of these dimensions. The information architecture for a viable system concept that can be economically and flexibly applied must consider the scalability and elasticity needed to satisfy all potential applications requirements. Among other factors, the distribution of processing functions from fully centralized to highly delegated and distributed should be a specific engineering task if an economically viable system approach is to evolve. Fortunately, modern "smart" and "brilliant" camera technologies and products, as well as cloud computing concepts, are rapidly emerging to support such architectural flexibility of real-time processing solutions.

Front-end phases of image scene analysis can be designed to be deployable to the imaging sensors in such a system. Image compensation, change detection, edge detection, object segmentation, and object tracking are among those processing steps. A principal value of such decentralization is a massive reduction in the data traffic required during the vast majority of time when no potentially threatening situations are detected that require human verification. Closer to the central point of monitoring or threat response decisions, it would also be possible to perform the intermediate processing that combines the data derived by individual sensors into a single 3-D scene model update. However, this intermediate step may not be frequently warranted.

Overall Connectivity and Service Infrastructure

Client-server models for handling the various computational and communications functions of a brilliant visual surveillance system are also important, considering the dynamic nature of indicated terrorist threats and criminal activities. Sites may be installed on minutes of notice in locations worldwide and may be uninstalled just as frequently. Intelligence information may warrant sudden changes in the defined potential threats. Much like the operating modalities of current remotely piloted aerial vehicle operations, human verification monitoring may occur in the next building to the sensors, at the local police station, or halfway around the world. Operation of sensors and the communications links to and from them must be secure and readily tested, and surprises must be accommodated when failure or sabotage occurs. All of these factors suggest the use of the existing domestic and military infrastructure Internet or similar more secure infrastructure as specific situations require.

Summary

The development of practical high-performance system solutions requires addressing a substantial set of engineering challenges, including these:

- Tractable and application-focused methods for representing human appearance, posture motion, and actions
- Real-time high-resolution 3-D image processing
- Complex database structures and their real-time utilization
- Large-scale system architectures that enable flexible application
- Human factors applicable during installation, operation, and response to adversary countermeasures

Realistic system designs must consider requirements for versatility, economy, reliability, and security.

Πολύ ενδιαφέρουσα μελέτη καθώς και ο Osama bin Laden έχει ανάλογες σπουδές!

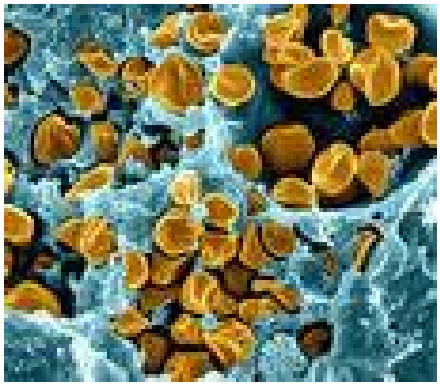
Why So Many Terrorists Get Their Start as Engineers?

Of all the biographical details that have emerged about the Nigerian man who allegedly tried to blow up a Northwest Airlines jet on Christmas, perhaps the least surprising -- at least to those who study these things -- is what he studied in college. The terrorist suspect, Umar Farouk Abdulmutallab, earned a degree in mechanical engineering from University College London in 2008, just over a year before he tried to demonstrate his skills by detonating an explosive device aboard the Detroit-bound plane. Among violent Islamic extremists, that puts him in familiar company. Indeed, the propensity toward engineering studies is an aspect of the terrorist profile that has drawn increased scrutiny of late from scholars, who have been advancing theories about the high correlation between the two. In a study published this year, European sociologists Diego Gambetta and Steffen Hertog researched more than 400 known violent jihadists since the 1970s, including the 25 men involved with the terrorist attacks of Sept. 11, 2001. Nearly half were known to have received some level of higher education, and of those, 44 percent were engineers -- including eight of the 9/11 plotters and hijackers. Engineering was by far the most popular field; the percentage of terrorists who had pursued it was more than twice as high as the second-place field, Islamic studies. "The bottom line is that while the probability of a Muslim engineer becoming a violent Islamist is minuscule, it is still between three and four times that for other graduates," Gambetta wrote in an article in the New Scientist that summarized the pair's findings, which were published in August in the European Journal of Sociology. So what makes engineers more likely to become terrorists? The most obvious theory is their technical expertise; al-Qaida and other terror groups need to recruit people who can make bombs. But Gambetta and Hertog say that doesn't explain the overlap. Their study found that engineers serve the terrorist organizations they join in many more capacities than making or deploying explosives. A significant number held higher-level posts that didn't directly involve their engineering training at all. The authors instead conclude that the phenomenon is explained by a combination of mindset and professional circumstance. Citing studies finding that engineers as a group are more politically conservative than other professions, Gambetta and Hertog write that engineers by nature are more likely to be drawn to the kind of rigid, hierarchical worldviews that radical Islam provides: Their governing mentality "inclines them to take more extreme conservative and religious positions everywhere." What's more, although engineering is considered an elite profession in Middle Eastern countries, the region's job market for engineers dried up during the economic crises of the 1970s and '80s, frustrating that era's recent

graduates and driving them to radicalize. Not surprisingly, the engineering community in the U.S. is decidedly cool to the suggestion that their profession breeds terrorists. "It's baffling," said Larry Jacobson, the executive director of the National Society of Professional Engineers, which counts about 45,000 members across the country. "There's got to be some big difference between what goes on in the U.S. and what goes on in other countries." Jacobson agrees with the notion that engineers are a politically conservative bunch, but not the type of conservative that tips over into radicalism. American engineers, he said, "just don't take risks. ... The hard-wiring of engineers makes them very cautious." Defending the profession's contribution to national security, Jacobson also noted that engineers across a range of specialties "become the government's first defense against terrorism." Still, he did give some credit to al-Qaida and its ilk for the logic of its HR strategy: **"If I was to recruit terrorists, engineers would be the first guys I'd want."**

POSITIVE RESULTS ANNOUNCED FOR RESTANZA IN TREATMENT OF INHALED TULAREMIA

Positive top-line results have been announced by Advanced Life Sciences Holdings, Inc., for its once-a-day, oral antibiotic Restanza to treat inhaled lethal doses of tularemia. A 14 day course of Restanza during a pivotal, non-human primate study achieved a 100 percent survival rate at the doses tested. In the study, all 10 animals receiving 16 mg/kg of Restanza once-a-day, the equivalent of a human dose of 300 mg, within 24 hours of exposure to a lethal dose of inhaled tularemia survived. Only of of the 10 animals that received a placebo survived. "We believe that the impressive survival data in tularemia, combined with previously reported survival data in anthrax and plague, confirm the profile of Restanza as a potent, broad spectrum medical countermeasure for biodefense and underscore Restanza's impressive efficacy and safety against lethal pathogens which could represent significant threats to public health and safety," Michael T. Flavin, Ph.D., chairman and chief executive officer of Advanced Life Sciences said. "We believe that our company's biodefense strategy represents a promising commercial opportunity and we are excited about the scope and pace of our progress to date. One of Restanza's major differentiating advantages, and a key characteristic that has attracted US government interest, is its demonstrated breadth of activity against many lethal pathogens." Tularemia, a bacterial disease, is transmitted to humans through contact with infected rodents or rabbits or through insects carrying Franciseela tularensis, the causative agent of tularemia. F. tularensis is classified by the Centers for Disease Control as a Category A Bioterrorism Agent and has been prioritized by the Department of Defense and Department of Health and Human Services as one of the most serious biological weapons.



Η ΚΙΝΑ ΣΤΗΝ ΕΛΙΤ... ΤΩΝ ΥΠΟΛΟΓΙΣΤΩΝ

Η Κίνα έχει πλέον στην κατοχή της τον πέμπτο ισχυρότερο υπερ-υπολογιστή του κόσμου, ο οποίος διαθέτει 70.000 μικροτσίπ και μπορεί να πραγματοποιήσει 563 τρισεκατομμύρια υπολογισμούς το δευτερόλεπτο. Ο υπολογιστής αυτός χρησιμοποιείται για αναζήτηση πετρελαίου και μηχανολογικές εργασίες. Πρώτος στη λίστα με τους 500 ισχυρότερους υπολογιστές παγκοσμίως, η οποία δημοσιεύεται ανά δύο χρόνια, είναι ο υπολογιστής «Jaguar» (κάτω), αμερικανικής κατασκευής, ο οποίος ξεπερνά τα 1.700 τρισεκατομμύρια υπολογισμούς το δευτερόλεπτο.

Η πεντάδα συμπληρώνεται με δύο ακόμα υπολογιστές στις ΗΠΑ και έναν στη Γερμανία, ο οποίος αποτελεί και το γρηγορότερο υπολογιστή στην Ευρώπη. Στη λίστα κυριαρχούν μηχανήματα που βρίσκονται στις ΗΠΑ, με 227 υπολογιστές στους καλύτερους 500 και οχτώ στους δέκα καλύτερους του κόσμου. Στην Ευρώπη βρίσκονται 153 συστήματα, με τα 44 να βρίσκονται στη Μ. Βρετανία.

X-FLEX BOMB-PROOF WALLPAPER COULD SAVE YOUR LIFE

X-flex bomb-proof wallpaper is one of the most incredible inventions I've seen. Imagine kevlar-type wallpaper that makes rooms and buildings, nearly indestructible.

X-Flex is a new kind of wallpaper: one that's quite possibly stronger than the wall it's on. Invented by Berry Plastics in partnership with the U.S. Army Corps of Engineers, this lifesaving adhesive is designed for use anyplace that's prone to blasts and other lethal forces, like in war or natural-disaster zones, chemical plants or airports. To keep a shelter's walls from collapsing in an explosion and to contain all the flying debris, you simply peel off the wallpaper's sticky backing, apply the rollable sheets to the inside of brick or cinder-block walls, and reinforce it with fasteners at the edges. Covering an entire room can take less than an hour. X-Flex bonds so tightly, it helps walls keep their shape after blast waves. Two layers are strong enough to stop a blunt object, like a flying 2×4, from knocking down drywall. During our tests, just a single

layer kept a wrecking ball from smashing through a brick wall. The wallpaper's strength and ductility is derived from a layer of Kevlar-like material sandwiched by sheets of elastic polymer wrap. The combination works so well that the Army is now considering wallpapering bases in Iraq and Afghanistan. Civilians could soon start remodeling too—Berry Plastics plans to develop a commercial version next year.

Εξαιρετικά σχολεία για Υγειονομικούς Πρώτους Ανταποκριτές! Τι είναι αυτό; Για να το ρωτάτε ή διαβάζετε λάθος περιοδικό και άρα δεν ξέρετε ή ξέρετε και κάνετε πλάκα !

Post-graduate course for emergency planners, hospital administrators, clinicians and emergency responders:

Do you know what to do if you are faced with mass casualties from a catastrophic event? Does everyone around you?

USAMRICD would like to present to you an advanced-level education opportunity from the US Army, the HM-CBRNE course. It offers healthcare professionals state-of-the-art instruction that may save lives in a major WMD incident. Designed for civilian and military healthcare managers and clinicians, it is presented by some of the nation's leading authorities in biological, chemical, explosive and radiation incident management. This course was developed with hospital level objectives – clinical and non-clinical. The HM-CBRNE course is intended to help mitigate the existing gaps in support of hospital operations during a major WMD event. Topics are presented in a seminar format that encourages participation. At least half of the course is devoted to group activities and hospital teams centered on the Hospital Incident Command System (HICS). These team efforts culminate in a high production value multi-facility mass casualty tabletop exercise. HM-CBRNE includes expert overview of all CBRNE fields to include psychology of CBRNE events. Other highlights include principles of hospital emergency management, regulatory frameworks (NIMS, NRF, HICS), equipment and procedure demonstrations as well as a multi-station practical exercise. Additionally, HM-CBRNE benefits all other routine and crisis hospital operations. HM-CBRNE is typically attended by hospital management, emergency planners, emergency responders, public health officials, physicians, nurses and others. The course is offered 1-2 times per year. Typically, half of the attendees are civilian. HM-CBRNE provides a great opportunity to meet other

Upcoming Courses

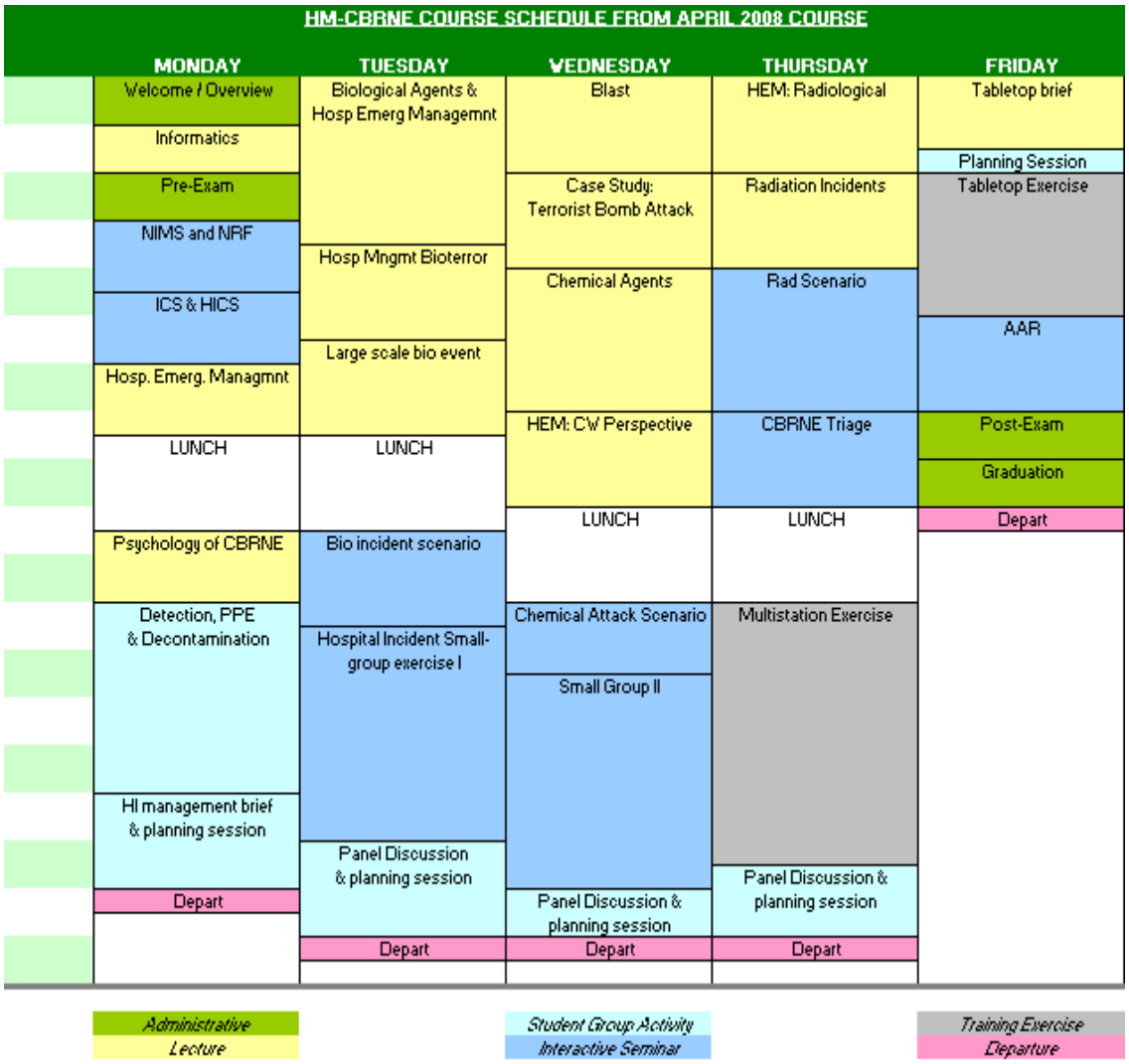
- 01 - 05 February 2010
- 02 - 06 August 2010

Registration Fee

- Active Army, Army Reserves, Army National Guard, DA Civilians - No Fee
- DoD Uniformed Services: (Air Force, Air Force Reserves, Air National Guard, Navy, Navy Reserves, Marine Corps) - $700
- All Others - $950

professionals from across the nation who face the same challenges you do.

HM-CBRNE Course Schedule Sample



HM-CBRNE COURSE SCHEDULE FROM APRIL 2008 COURSE

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Welcome / Overview	Biological Agents & Hosp Emerg Managemnt	Blast	HEM: Radiological	Tabletop brief
Informatics				Planning Session
Pre-Exam		Case Study: Terrorist Bomb Attack	Radiation Incidents	Tabletop Exercise
NIMS and NRF	Hosp Mngmt Bioterror			
ICS & HICS		Chemical Agents	Rad Scenario	AAR
Hosp. Emerg. Managmnt	Large scale bio event			
LUNCH	LUNCH	HEM: CW Perspective	CBRNE Triage	Post-Exam
				Graduation
		LUNCH	LUNCH	Depart
Psychology of CBRNE	Bio incident scenario			
Detection, PPE & Decontamination	Hospital Incident Small-group exercise I	Chemical Attack Scenario	Multistation Exercise	
		Small Group II		
HI management brief & planning session	Panel Discussion & planning session		Panel Discussion & planning session	
Depart	Depart	Panel Discussion & planning session	Depart	

Administrative / Lecture — Student Group Activity / Interactive Seminar — Training Exercise / Departure

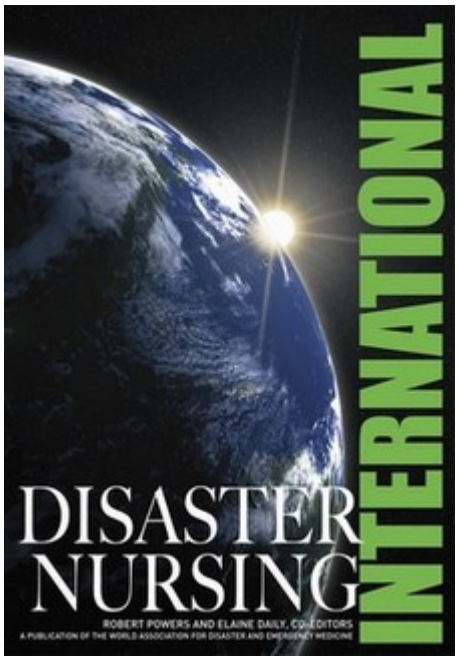
Medical Management of Chemical and Biological Casualties Course (MCBC) - #6H-F26 (School codes 877 / 879)

The Medical Management of Chemical and Biological Casualties Course (MCBC), 6H-F26, is conducted jointly by the US Army Medical Research Institute of Chemical Defense (USAMRICD) and the US Army Medical Research Institute of Infectious Diseases (USAMRIID). The course is designed for Medical Corps and Nurse Corps officers, physician assistants, Medical Service Corps officers in specialties 67B,C, or E, and other selected medical professionals. Classroom instruction, laboratory and field exercises prepare graduates to effectively manage casualties of chemical and biological agent exposure. Classroom discussion includes: the history and current threat of chemical and biological agent use, the characteristics of threat agents, the pathophysiology and treatment of agent exposure, and the principles of field management of threat agent casualties. In the field, attendees practice the principles of personal protection, triage, treatment and decontamination of chemical casualties.

During this exercise, attendees learn the capabilities and limitations of Mission Oriented Protective Posture (MOPP) when treating casualties in a contaminated environment. This educational activity will be accredited for credit in category 1 credit(s) toward the AMA PRA Category 1 credit(s)TM. Each physician should only claim credit commensurate with the extent of their participation in the activity. This 6-day course is offered four times each year at Ft. Detrick and Aberdeen Proving Ground, Maryland. Application for this course is via the Army Training Requirements and Resources System (ATRRS). Requests for attendance should be made through your training branch. The course is also available via several distance-learning products, including satellite broadcast; and videotape series. The course is approved postgraduate education for physicians and nurses, and is approved military education for entry on the Officer Record Brief.

INTERNATIONAL DISASTER NURSING TEXTBOOK

The effects of a disaster on health care can range from conditions that immediately besiege the system with large numbers of patients, to catastrophes that strain its long-term sustainability. Nurses as frontline health professionals, must have an understanding of the situations they may face before, during and after a disaster and they must develop the skills and strategies to provide effective and immediate care. ***International Disaster Nursing*** is the first truly comprehensive and internationally focused resource to address the diversity of issues and myriad scenarios that nurses and other health personnel, could encounter during a disaster event. This text defines the many roles of the nurse within a multidisciplinary team, and aids the implementation of the community's disaster plans in a crisis. International experts provide chapters on biological, chemical, natural, pandemic and explosive disasters. Others address disaster events and implications in the world's poorer countries; populations with special needs; ethical issues; and conducting disaster research. Important features include chapter objectives, real-world vignettes, and extensive references. With an alarming increase in the occurrence of disasters in the last decade, ***International Disaster Nursing*** is the hallmark text in the field. ***International Disaster Nursing*** is co-edited by WADEM members, Elaine Daily and Robert Powers, with contributions from many members of the WADEM International Nursing Section. The book is being published by Cambridge University Press. **It is currently in the production stages and is scheduled to be released in April 2010.**



TOTAL SECURITY SERVICES INTERNATIONAL, INC.

ResponderVIEW™
Virtual Infrastructure Emergency Workspace

ResponderVIEW™ is an intelligent virtual environment that enables effective capture, sharing and renewal of knowledge about critical facilities and infrastructure.

ResponderVIEW™ provides emergency response planners and first-responders with situational awareness as well as training and support. The system guides the emergency responders to critical areas in the facility such as locations of hazardous materials, water and gas shut-off valves, fire suppression equipment, and electrical panels.

Human-like interactive intelligent agents provide debriefing and guidance to the user as well as instructions on how to perform complex tasks.

ResponderVIEW™ can be integrated with live camera or sensor feeds. The system can also be integrated with GIS to allow users to manage all the critical facilities in a geographic area as well as monitor emergency events and assess their impact.

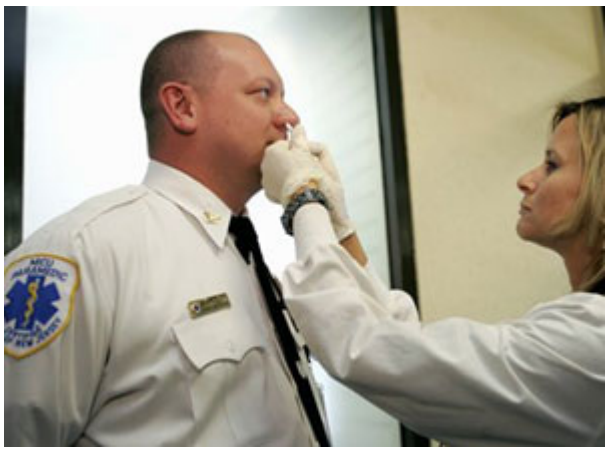
The **ResponderVIEW™** solution provides easily renewable on-demand facility knowledge and can be deployed across PC or portable devices via the Web.

ResponderVIEW™ has the potential to dramatically improve how emergency responders and planners prepare for and respond to emergencies at critical facilities.

Contact
Don L. Rondeau
8403 Colesville Road, Suite 410, Silver Spring, MD 20910
Tel: 301-578-8399
www.tssi-inc.com

SYNDROMIC SURVEILLANCE FOR PANDEMIC ILLNESS

With the second wave of the H1N1 pandemic beginning to be felt around the country, a familiar buzz phrase has once again come to the forefront of emergency planning and response — syndromic surveillance. But what is syndromic surveillance and what does it have to do with public safety?



Syndromic surveillance is defined by the Centers for Disease Control and Prevention as "surveillance using health-related data that precede diagnosis and signal a sufficient probability of a case or an outbreak to warrant further public health response." With that definition in mind, the questions arise, "What implications, if any, does this have on today's first response communities, and what role, if any, do today's public safety communications centers play in syndromic surveillance?" The training and procedures we have developed, trained on and used in our preparations for potential terrorist incidents could easily translate to pandemic outbreaks, including syndromic surveillance. Syndromic surveillance is a specific type of call-trend analysis that allows communications personnel to detect those all-important signs and react accordingly. One of the first signs of an event involving a possible weapon of mass destruction or other terrorist act can be an influx of calls that are similar in nature and/or exceed typical call numbers. These can also be used to determine a potential pandemic outbreak.

Examples of such calls include:

- An increased surge of medical calls (especially if the symptoms are similar in nature)
- Calls reporting large numbers of sick or dying people or animals
- Calls reporting seemingly distinct patterns of illnesses and common symptoms

Noting that these types of calls could possibly be related and an early heads-up notification up the chain of command on the part of communications personnel may play a pivotal role in the response to a pandemic incident or potential bioterrorism.

Modern technology

Most communications centers today are digitizing their data and replacing outdated, paper-dependent systems with the modern technology offered by computer-aided dispatch (CAD) systems, mobile data terminals (MDTs) and other software and computer-based systems. This often includes software used for caller triage and dispatch guidelines. Many providers of such technology now offer an electronic syndromic surveillance system that interfaces with a CAD system and offers automated electronic monitoring. These programs assist the communications center and field agencies in call-trend analysis and create an electronic syndromic surveillance system. Most of these programs allow an agency to establish a baseline threshold of normal operations. The program uses these criteria to establish a

threshold so it can monitor day-to-day transactions for trends that can be recognized as possible pandemic or “outbreak” situations or acts of biological or chemical terrorism.

Real-world terms

To put this into real-world terms, in any given 24-hour period, an agency responds to an average of 15 "sick unknown" calls with patients complaining of difficulty breathing and flu-like symptoms. This criterion, 15 calls of this nature in 24 hours, would be considered a "norm," and it can be set as the threshold for this type of call. So, if during a 24-hour period a sixteenth call matching this description were received by the agency, the threshold criterion would be met and the system would trigger an automatic response and notify the appropriate emergency personnel. The personnel notified and the manner in which they are notified will vary by system and agency, but the activity remains essentially the same. For example, a rash of difficulty breathing or shortness of breath calls may activate notification of the Department of Health, local hospital emergency departments, fire chief and the local EMS supervisor. These individuals could be notified immediately via email, pager or cellular telephone, depending on the system in place. It is essential that communications personnel and field agencies alike be trained in the essentials of syndromic surveillance and the importance of their role in early recognition of situations with the potential to affect a large proportion of the population.

ANTHRAX DETECTOR CAN SPOT H1N1 VIRUS

A device developed during post-9/11 anthrax scares can quickly and simply detect the H1N1 swine flu virus, according to University of New Mexico and Sandia National Laboratories scientists. In recent years, UNM scientists have modified the device to instantaneously test for other viruses such as HIV and hepatitis A and B. "About 6 or 8 months ago with the detection of the H1N1 flu, we decided we'd adapt the device for the detection of this flu," said Dr. Richard Larson of UNM. With instant detection, Larson said hospitals would be able to quickly and efficiently isolate and treat sick patients. Technicians would take a throat or nasal swab sample from a patient and place it onto a metallic chip, then load the chip into the device. The device instantly analyzes the sample and the result pops up on a computer. "By all of our tests so far, we've been able to very specifically and sensitively detect H1N1," Larson said. A medical equipment maker is designing a shell for the device components. The device is already under review by the FDA, which could approve the device within a few months. The new device could then be available for hospitals

next year. "The current testing method for viruses now take many hours to a day or more, so this would dramatically change the way we practice medicine," Larson said.

RUSSIA REPORTS ELIMINATING 42 PERCENT OF CHEMICAL WARFARE MATERIALS

A senior Russian official said yesterday the nation has destroyed nearly 42 percent of its full depository of chemical warfare materials, Interfax reported. A total of 16,705 metric tons of chemical agents have been destroyed to date, Sergei Serbin, head of the international cooperation office for Russia's chemical weapons storage and disposal department, said during a conference near the disposal plant at Shchuchye in the Kurgan region. Russia at one point held 40,000 metric tons of material, the world's largest stockpile of substances banned by the Chemical Weapons Convention. "The disposal is proceeding as planned," Serbin said during the event. "The yearly target for Russia has been accomplished by 77 percent. As for the Shchuchye facility, it has destroyed 86 percent of the yearly target." Nearly 776 of the 5,450 metric tons of sarin nerve agent stored at Shchuchye have been destroyed. Difficulties were anticipated as the plant began operations last May, Serbin said. "Naturally there were some, but nothing extraordinary happened, and the equipment is being adjusted. The facility is stable now, and there is even some power reserve," he said. Six chemical weapons disposal plants have opened so far in Russia. The nation intends to dispose of 45 percent of its chemical arsenal by the end of this year and to have disposed of all chemical weapons by **April 29, 2012**, the deadline set by the convention (Interfax I, Oct. 14) The second part of the Shchuchye disposal plant is likely to come online in the latter half of 2010, Serbin said. With the addition of the new section, the facility would be able to destroy 1,700 metric tons of material each year, he added. "Construction efforts are in progress and equipment is being installed. The facility will have two segments with a similar capacity," he said (Interfax II, Oct. 14).

AIRPORT TESTS FULL-BODY X-RAY SYSTEM

Future passenger security checks at airports may no longer include ‘pat-downs’ with a new full-body imaging technology undergoing trials at Manchester Airport. Manchester Airport’s Terminal 2 is trialling the Secure 1000 Single Pose, which uses backscatter technology and proprietary image processing software to produce a ghost-like outline of an individual’s body. A concealed threat such as a knife or gun would be clearly detectable on the image. The US-based developer of the technology, Rapiscan Systems, believes that the technology could, one day, replace metal detectors in airports. Tim Raynor, the

European Union (EU) government affairs technical director for the company, said that the imaging system is different to normal X-ray machines. The Rapiscan system works by bouncing X-rays off an individual's skin to produce an outline image of the person's body, he added. A normal X-ray imaging system detects X-rays that are generated through a person. Raynor said that, in an airport security check scenario, an individual would be asked to stand between two machines for a few seconds. Each machine would generate a pencil beam of X-rays that would scan an individual in a raster fashion over the body. Each point of backscatter would be picked up by an array of detectors in the machine. With this input, an image would be formed using Rapiscan's image processing software and transmitted to a remote security officer who would then electronically confirm if the passenger can proceed or whether a search is required. Raynor said that the officer would see an image of the person 0.5mm below their skin surface. 'It is very difficult, if not impossible, to recognise the person,' he said, addressing concerns about privacy. 'You do have the curves of the body visible. Anything that is on the body or in clothes being worn by the body show up as different contrasts on an otherwise flat background.' According to Raynor, a belt buckle or gun would show up as dark shadowed images on the otherwise ghost-like outline of a person, making their detection clearly visible. Rapiscan performed a trial of its technology at Heathrow Airport in 2004. Raynor said that the trial was a success, but that the technology has now been advanced in a way that 'improves the passenger experience'. The system now includes an additional sensor so that a person's front and back can be scanned at the same time. 'In the 2004 trial, the passenger needed to pose in a variety of poses for each side of the body to be imaged and therefore scanned,' he said. The scanning time has also been decreased by reducing the X-ray dosage and running the pencil beam faster. Raynor said that this change did decrease image quality a bit, but it is still effective. In addition to privacy concerns, he said that Rapiscan is prepared to address any trepidation about safety. 'Because we are using a raster pencil beam, the amount of X-rays used to generate images is extremely low,' he said. 'The effective dose of the X-ray is similar to the dose you get in an aircraft at 30,000ft [9,144m] for five minutes.' The equipment in the voluntary trial has been approved by the National Radiological Protection Board, which is part of the Health Protection Agency and is responsible for licensing all X-ray equipment in the UK. The imaging technology trial will run in Manchester Airport's Terminal 2 only for at least 12 months or until enough data is gathered to assess all aspects of the equipment. Rapiscan recently received an order worth $25m (£16m) from the US Transportation Security Administration for multiple units of the Secure 1000 Single Pose for airport security screening systems. According to Raynor, Rapiscan fully expects other governments to approve their use and roll out the systems in other parts of the world following the US deployment. 'In the US, you will find that the walk-through metal detectors will be augmented - if not replaced - by whole-body imaging systems,' he said. 'That will lead the EU to make similar requirements that therefore will need to be rolled out in Europe,' added Raynor. 'Manchester Airport will obviously understand how that works operationally from the trial it is now doing.'

TINY MOTES SNIFF OUT CHEMICAL, BIOLOGICAL THREATS

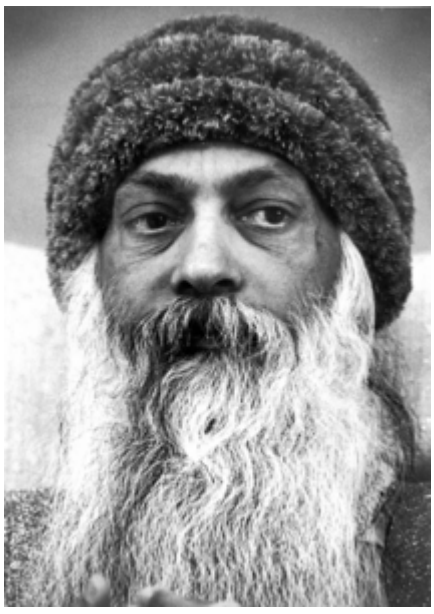
Research to develop a new method to detect biological and chemical threats may also lead to new approaches for removing pollutants from the environment.

Dr. Jagannathan Sarangapani displays one of the tiny motes developed at Missouri S&T to help the military detect chemical and biological threats. The research effort, led by Dr. Hai Xiao of Missouri University of Science and Technology, involves the development of tiny sensors - each about the size of a pinhead - that could be used to detect and identify chemical or biological agents. Xiao, an associate professor of electrical and computer engineering, along with colleagues from Missouri S&T and the University of Cincinnati are using a porous crystal known as zeolite to develop the sensors. Zeolite's molecular structure and unusual properties allow it to detect certain chemicals and trap them, Xiao says. Funded through a $529,160 grant from the U.S. Army's Leonard Wood Institute, the researchers are developing prototypes of the sensors, a process for manufacturing them and a means for deploying them in a battlefield or urban warfare situation.

The zeolite sensors would be deployed in the battlefield via "motes" developed by Xiao's co-investigator, Dr. Jagannathan Sarangapani, the William A. Rutledge-Emerson Distinguished Professor of Electrical Engineering. These are small, battery-powered devices that would hold perhaps a dozen or so sensors and have the ability to communicate with one another via a wireless network. The motes could also be controlled remotely, allowing soldiers to maintain a safe distance from deadly chemicals. While the sensors are designed to aid the military, Xiao thinks they may also have environmental benefits. In more concentrated quantities, the absorbent properties of zeolite may make it ideal for cleaning up environmental messes, such as a chemical spill. "It's more like a sieve and has been used for molecular separations," he says. "But because of its large surface area, zeolite also acts as an absorbent for efficient collection of target samples from the environment." Xiao's expertise is in developing sensors for military, energy, industry and biomedical applications, while Dr. H.L. Tsai, a professor of mechanical engineering at Missouri S&T, is an expert in the area of laser fabrication. Working with Tsai is Dr. Junhang Dong, an associate professor of chemical engineering at the University of Cincinnati who is an expert in zeolite materials design and synthesis. Working with Xiao and Sarangapani is Dr. Sanjeev Agarwal, a research assistant professor of electrical engineering. Agarwal and Sarangapani are developing the distribution system for the sensors.

25 YEARS TO OREGON SALMONELLA BIOTERRORISM

The 1984 Oregon outbreak of Salmonella enterica Typhimurium sickened 751 people and sent 45 to hospitals; the attack was launched by a mystical cult which tried to take over the remote Oregon county. For the first twelve years, the Journal of the American Medical Association (JAMA) could not write about it. After fifteen years, the Centers for Disease Control and Prevention (CDC) was still identifying the six motivational factors that were involved: charismatic leadership, no outside constituency, apocalyptic ideology, loner or splinter group, sense of paranoia and grandiosity, and defensive aggression. This month marks the 25th anniversary of the foodborne bioterrorism attack on The Dalles, Oregon by top followers of cult leader Bhagwan Shree Rajneesh. Far more people know about it now than did at the time. In 1984 and for years afterward, nobody outside Oregon paid much attention to it. Food Safety News's Dan Flynn writes that since envelopes of anthrax were sent to media outlets and the U.S. Senate, bioterrorism has received much more attention throughout the United States. While the 2001 anthrax attack remains a mystery, everything was solved involving the 1984 Oregon outbreak of Salmonella enterica Typhimurium that sickened 751 people and sent 45 to hospitals. It was the largest foodborne illness outbreak in the United States in 1984. Now there is interest because the group involved cultured its own pathogen for terrorist purposes. Jim Weaver was the local Congressman when people in The Dalles got sick. He would rise on the floor of the U.S. House just four months later to charge the Rajneesh with sprinkling Salmonella on the salad bar ingredients in eight restaurants. Rep. Weaver's remarks ran counter to the CDC investigation, which blamed unsanitary food handlers for the outbreak. Writing recently in The Oregonian, Weaver recalled: "I received daily printouts from the CDC investigation that made it only too clear that it was virtually impossible for the food handlers to be the source. For example, in one restaurant, the same food handlers set up salad bars in a private banquet room and in the main public dining room. Dozens of salmonella cases issued from the salad bar in the public dining room; none from the salad bar in the private banquet room. Yet the health authorities remained unanimous in blaming flood handlers." The food handlers would have to wait a few more months to have their names cleared. Flynn writes that American Type Culture Collection in Seattle had sold the bacterium to the Rajneesh. Among the hands that sprinkled droplets of Salmonella from vials hidden under their red robes was that of Ma Anand Sheela, the Bhagwan's top lieutenant. Three years earlier, the self-described Indian mystic



bought the Big Muddy Ranch in Wasco County, OR for a commune that eventually attracted 4,000 followers. It was enough to take over the nearby village of Antelope and soon enough was testing the county's land use and building powers. As they sought to take control of Wasco County, the commune's first plan was to collect enough homeless people off the streets of Portland and Seattle to vote in local elections, but the county was challenging those registrations. With a "Share-a-Home" plan failing, they turned to making cultures of Salmonella bacteria in the commune's own laboratories. The goal was simple. Make enough non-Rajneesh voters sick enough that they fail to vote in the local elections. The Rajneesh minority in the county would then dominate the county commission and sheriff's offices that the commune desperately wanted to take over. About a dozen cult members were involved in the plot. Ma Anand Sheela (Sheela Silverman) was a trained nurse practitioner. Ma Anand Puja (Diane Ivonne Onang) was the on-site nurse at the Ranch's medical clinic. Poisoning the salad bars was supposed to be a trial run before putting the bacteria into The Dalles' public water system closer to Election Day. When it became clear that the homeless people they had recruited would not be allowed to vote, Rajneesh's followers instead decided to boycott the election. So phase II was never executed. By going public with a well reasoned, but only circumstantial case, Weaver says he was given "no credence" by the Oregon news media. He was called paranoid and a "Rajneesh basher." About six months later, Weaver picked up an unlikely ally in his suspicions -- the Bhagwan himself. The cult leader was in self-imposed isolation and had not spoken publicly for four years until shortly before 16 September 1985 when he held a press conference. He charged that Ma Anand Sheela and nineteen others, who had recently fled to Europe, were responsible for a number of crimes. He invited state and federal officials to come to the ranch to investigate. Oregon's Attorney General headed up a state-federal task force that entered the ranch on 2 October 1985. Glass vials containing Salmonella were found in the lab. CDC found it to be an exact match to the bacteria that sickened people who ate at the restaurant salad bars. The task force also found evidence that the cult's lab had experimented with other poisons, chemicals, and bacteria. They also found a copy of "The Anarchist Cookbook," about explosives and bioterrorism. During his isolation, the Bhagwan's only contact with the outside world was through Ma Anand Sheela. He said she used the time to create "a fascist state." He was never charged in the Salmonella outbreak. He did plead guilty to violating immigration laws, was given a 10-year suspended sentence, fined $400,000, and deported. He died in India in 1990 at age 58. Sheela and Puja were arrested in Germany and extradited to the United States to face charges. They eventually entered no contest pleas to numerous crimes including the Salmonella poisonings. They received multiple sentences running from three to ten years, but were allowed to serve them concurrently. With good behavior, both were released after 29 months. Sheela was deported to Switzerland.

NEW ADVANCED SENSORS DEVELOPED

Queen's University Belfast researchers use Raman spectroscopy, which involves shining a laser beam onto the suspected sample and measuring the energy of light that scatters from it to determine what chemical compound is present; they mixed nanoscale silver particles to amplify the signals of compounds. Advanced sensors that

can detect illegal drugs and chemical weapons in seconds are being developed by scientists at Queen's University Belfast. The devices will use special gel pads to swipe an individual or crime scene to gather a sample. The sample will then be analyzed by a scanning instrument that can detect the presence of chemicals within seconds. The research team hopes this will allow better, faster decisions to be made in response to terrorist threats or suspected cases of drug consumption. The scanning instrument will use Raman spectroscopy, which involves shining a laser beam onto the suspected sample and measuring the energy of light that scatters from it to determine what chemical compound is present. The Queen's University team claims it is so sophisticated it can measure particles of a minuscule scale making detection faster and more accurate. This type of spectroscopy is not normally sensitive enough to detect low concentrations of chemicals, so the researchers mixed the sample with nanoscale silver particles to amplify the signals of compounds and allow smaller traces to be detected. Researcher Steven Bell said his group is now preparing to produce an integrated sensor device. "For the future, we hope to be able to capitalize on this research and expand the range of chemicals and drugs that these sensors are able to detect," he added. It is hoped the new sensors will also be the basis for developing breathalyser instruments that could be used for roadside drugs testing in much the same way as the police take breathalyser samples to detect alcohol. At present, police officers are only able to use a Field Impairment Test to determine if a person is driving under the influence of drugs. The accuracy of this method has been questioned because of concerns that it is easy to cheat. Senior staff members from FSNI (Forensic Science Northern Ireland) are helping the Queen's University researchers with the operational aspects of the technology and giving feedback on how it might be used in practice by the wider community. Bell said the technology could have a number of important applications in the future. "There are numerous areas, from medical diagnostics to environmental monitoring, where the ability to use simple field tests to detect traces of important indicator compounds would be invaluable," he added.

THE TOP 10 FOODS MOST LIKELY TO MAKE YOU SICK

Some of the healthiest foods are also the most dangerous, causing most food-borne disease in the United States; the leading illness-carrying foods: leafy greens, eggs, and tuna. If it's not one thing, it's another: Some of the healthiest foods may also be the most likely to cause food-borne illness. This is the conclusion in a report by the Center for Science in the Public Interest (CSPI). The report shows leafy greens, sprouts, and berries are among the most prone to carry infections or toxins. "We don't recommend that consumers change their eating habits," says Caroline Smith DeWaal, the CSPI's head of food safety programs. Instead, the group is trying to point out vulnerabilities in the nation's food safety system as it lobbies Congress to beef up enforcement. WebMD's Todd Zwillich writes that the group analyzed CDC data on food illness outbreaks dating back to 1990. They found that **leafy greens** were involved in 363 outbreaks and about 13,600 illnesses, mostly caused by norovirus, E. coli, and salmonella bacteria. The rest of the top 10 list included:

- Eggs, involved in 352 outbreaks and 11,163 reported cases of illness.
- Tuna, involved in 268 outbreaks and 2,341 reported cases of illness.

- Oysters, involved in 132 outbreaks and 3,409 reported cases of illness.
- Potatoes, involved in 108 outbreaks and 3,659 reported cases of illness.
- Cheese, involved in 83 outbreaks and 2,761 reported cases of illness.
- Ice cream, involved in 74 outbreaks and 2,594 reported cases of illness.
- Tomatoes, involved in 31 outbreaks and 3,292 reported cases of illness.
- Sprouts, involved in 31 outbreaks and 2,022 reported cases of illness.
- Berries, involved in 25 outbreaks and 3,397 reported cases of illness.

It is unclear how many of the outbreaks can be blamed on the foods themselves. The CDC's database can not discriminate between outbreaks caused by tomatoes, for example, vs. those caused by other ingredients in a salad. Foods like potatoes are almost always consumed cooked, so it is unlikely that potatoes themselves caused 108 outbreaks. Still, Smith DeWaal called the list "the tip of the iceberg" when it comes to food-borne illnesses in the United States. Not all outbreaks are reported to public health authorities. In addition, the analysis focused only on foods regulated by the FDA; that leaves out beef, pork, poultry, and some egg products, which are policed by the U.S. Department of Agriculture. "Consumers always want to know what they should do to avoid getting sick," says Sarah Klein, lead author of the report. She recommends "defensive eating," including keeping food cold and cooking it thoroughly, chilling oysters and avoiding them when raw, and avoiding raw eggs or using them in homemade ice cream. Several bills that are circulating in Congress aim to crack down on food safety by requiring all food producers to keep written safety plans and giving the FDA more power to inspect plans and enforce rules. "In a relative scale our food supply remains quite safe," says Craig Hedberg, a professor of environmental and occupational health at the University of Minnesota School of Public Health. The CDC says 76 million Americans get sick from food-borne illnesses each year. "Because most people don't experience a bad outcome from a lapse in good behavior it's difficult to enforce," he says.

CRIMINALS STEAL NUCLEAR MATERIAL, THAN DEMAND RANSOM FOR ITS RETURN

Criminals in Argentina steal cesium-137 from a drilling company, then demand $500,000 and threaten "to make this city glow" if they did not get the money. It took two armed men no more than three minutes to break into an underground bunker in Argentina, swipe a canister of radioactive material, and make a quick getaway after tying up the lone security guard on duty at the facility. Siobhan Gorman writes that the heist of cesium-137 from a Baker Atlas Co. oil-drilling operations base earlier this year, the first theft of radioactive material in Argentina, put to the test a new emergency-response process that Argentina's Nuclear Regulatory Authority launched as part of a U.S. global nuclear security program. The program, officials in both countries say, enabled Argentine authorities to recover the radioactive material in less than two days. The safe resolution of the theft, which police suspect was part of an extortion plot, has touched off a surge of interest in a program at the little-known U.S. National Nuclear Security Administration that helps foreign governments establish nuclear emergency-response centers and provides detection equipment and training. For the United States., initiatives like the emergency-response program mark an expansion of the NNSA's role, from securing U.S. nuclear weapons to working with

other countries to bolster emergency nuclear-response capabilities. "We want to shift ourselves from a nuclear-weapons complex to a nuclear-security enterprise," says NNSA administrator Thomas D'Agostino, who took the helm of the agency in 2007 and continued under President Barack Obama. The Obama administration hopes the program will be viewed as a significant step in controlling the global risk of radioactive material falling into the wrong hands. Gorman writes that some analysts say that tracking similar threats in less-friendly environments will be much more difficult. David Mosher, a senior policy analyst specializing in nuclear issues at Rand Corporation, a think tank, said bolstering emergency response in allied foreign countries like Argentina is considerably easier than ensuring that stolen radioactive and nuclear materials can be recovered in more troublesome corners of the world. The sheer volume of radioactive material used for industrial and medical purposes also makes response and recovery a continuing problem. "It's a real challenge," he says. "There is still more to go." Baker Atlas, a subsidiary of the multinational drilling company Baker Hughes, uses cesium to gage how much oil or natural gas a well is likely to produce. The material also can be used to make a so-called dirty bomb, in which radioactive material would be added to a conventional bomb. The amount of cesium-137 stolen, a wafer about the size of a quarter, was not enough to make a bomb, said Raul Racana, chairman of the board of directors of Argentina's Nuclear Regulatory Authority. Exposure to very high concentrations of cesium-137 can lead to radiation sickness and death. The greater threat from a sample of this size, U.S. officials say, is that it could be sold on the black market and combined with other sources. Gorman reports that at 3:30 a.m. on 19 February, two men crawled under the barbed-wire fence surrounding a Baker Atlas facility that houses drilling equipment in the Patagonian city of Neuquén. Surveillance camera footage shows the two men running to a guard shack, says Ed Apodaca, director of Latin American security for Baker Hughes. Inside the shack, the two men threatened the guard with a handgun and tied him up, the guard later told company security officials. The two men then broke into a nearby bunker where the cesium was stored. The men opened the bunker's hatch and struggled to lift a shoebox-size, lead-lined container for the cesium that weighs about 60 pounds, and carried it to a getaway car awaiting them. Baker Atlas immediately suspected a former employee, in part because the thieves were so familiar with the property. The company began receiving extortion calls, demanding $500,000 and threatening "to make this city glow" if the thieves did not get the money, Apodaca says. Argentine authorities traced the cellphone calls to an area of suburban Neuquén, where a heavily loaded taxi triggered radiation sensors on high-tech detection equipment provided by the United States. The taxi's passenger was identified as a former Baker Hughes technician's assistant, Benjamín Eduardo Soria, who had been fired for cause, says Apodaca, who declined to provide the reason for Soria's dismissal. Company officials later matched Soria's voice with the one from the threatening calls, and he was charged with aggravated theft.

FRENCH MAY TAKE INTRUSIVE MEASURES TO PREVENT INSIDE-THE-BODY BOMBERS

Security experts are split over whether inside-the-body suicide bomb is a serious threat; the French say they may not take any chances, and warn that security measures at airports may become more intrusive. Security authorities around the world continue

to assess the repercussions from the incident with the al Qaeda suicide bomber who tried to assassinate a Saudi minister by detonating an improvised explosive device hidden inside his body with a cellphone. According to the London Times, French antiterrorism officials will likely recommend using inspection techniques reserved for drug mules to catch this new threat to aviation security. As the Times reports, security screening at airports could get much more intrusive, frustrating, and time consuming if security adjusts to this new threat. As well as taking off shoes and handing in liquids, passengers could be subjected to X-ray screening or be required to hand in all electronic devices because they could be used as detonators, police commanders told Le Figaro newspaper. Full X-ray scans, which are used by customs officers for examining suspected drug smugglers, would cause huge disruptions for air travelers, said a senior Interior Ministry official. "It is unthinkable when you think about the frequency with which some people fly. The health risks would be too high," he told Le Figaro. The Ministry declined comment on possible new measures, which would be decided by Brice Hortefeux, the Interior Minister. Sebastien Mahé, an airport security expert with Brink's France, told the Times that security will have to focus on neutralizing the detonators and profiling suspicious passengers until an efficient technological solution can identify internal body bombs. Since the revelation of al Qaeda's "keister bomber," security experts have been split whether this new method of conveyance poses a legitimate threat.

See BELOW Matthew Harwood's report on those who say it is a serious threat -- and his report on those experts who say it is not.

Saudi Suicide Bomber Hid IED in His Anal Cavity

An affiliate of al Qaeda has taken a page from the drug mule's playbook, hiding an improvised explosive device (IED) in the anal cavity of a suicide bomber who detonated himself in late August in Saudi Arabia, reports the Australian Associated Press (AAP). The terrorist, a wanted militant from al-Qaeda on the Arabian Peninsular (AQAP), pretended to renounce terrorism and repent in order to get close to Prince Mohammed bin Nayef, Saudi Arabia's deputy interior minister who leads the kingdom's counter-terrorism campaign. In the attack on August 28, the bomber obliterated himself but the prince survived shaken but unharmed. AQAP claimed credit for the attack in an internet statement but was coy about the method, declaring: "No one will be able to know the type of this device or the way it was detonated." The

AAP credits the U.S. private intelligence services firm, STRATFOR, with the intimate details of the suicide bombing. According to the firm's intelligence report, the bombing signals a paradigm shift in suicide bombing tactics. The third tactical shift is perhaps the most interesting, and that is the use of an IED hidden in the anal cavity of the bomber. Suicide bombers have long been creative when it comes to hiding their devices. In addition to the above-mentioned IED in the camera gear used in the Masood assassination, female suicide

bombers with the Liberation Tigers of Tamil Eelam have hidden IEDs inside brassieres, and female suicide bombers with the Kurdistan Workers' Party have worn IEDs designed to make them look pregnant. However, this is the first instance we are aware of where a suicide bomber has hidden an IED inside a body cavity. It is fairly common practice around the world for people to smuggle contraband such as drugs inside their body cavities. This is done not only to get items across international borders but also to get contraband into prisons. It is not unusual for people to smuggle narcotics and even cell phones into prisons inside their body cavities (the prison slang for this practice is "keistering"). It is also not at all uncommon for inmates to keister weapons such as knives or improvised stabbing devices known as "shanks." Such keistered items can be very difficult to detect using standard search methods, especially if they do not contain much metal. The firm says that the modest amount of explosives able to fit inside a human anal cavity means the tactic is ideal for assassination. "It does pose real issues for airline security if the bomb is inside the person," Dr Carl Ungerer, national security policy director for the Australian Strategic Policy Institute."That's why perhaps there is now going to be a real push for these scanning type machines." It is still a mystery how the suicide bomber detonated the IED inside him, although a remote control is the most likely culprit. The incident does reveal another insecurity. If someone can conceal an IED inside their body, they could carry it on a plane, remove it, and then detonate it in "a strategic location," says STRATFOR.

The Threat of Keister Bombs? Don't Worry About It, IED Expert Says

The news reported earlier this month that an al Qaeda terrorist tried to assassinate the Saudi interior minister, responsible for the kingdom's counterterrorism program, by detonating an improvised explosive device hidden in his anal cavity may be surprising, an IED expert contends, but it isn't a credible threat as the incident shows. **First** off, no one other than the bomber, who was killed, was seriously injured in the late August attack, Lewis Page, a former IED disposal operator for the United Kingdom's mainland police, argues in the Register. The target of the attack, Saudi Prince Mohammed bin Nayef, told Al-Arabiya TV that 23-year-old Abdullah Hassan Tali' al-Asiri—aka Abul-Khair— "surprised me by blowing himself up." The prince sustained a minor injury to his hand in the failed attack. **Second**, Page notes that you don't have to be an explosives expert to understand that packing an explosive around human flesh will soften its

blow. **Third**, there's the problem of detonating the bomb once it's planted. A mechanical timer is one solution but could possibly alert sharp-eared security guards, while the electrical firing circuits used to detonate many terrorist bombs would mean the bomber would have to fit a battery in the cavity as well. Page won't even touch manual detonation. Page even considers whether a terrorist could drink liquid explosives and then find a way to detonate it internally. His prognosis? Negative. We would note though that in order to deploy a charge actually capable of working from within an enemy within you'd need to fill up quite a lot of the body. This is theoretically possible - a gutsy bomber could conceivably quaff huge quantities of liquid main-charge explosives and then perhaps swallow a detonating device. It still seems pretty unfeasible, however. The Tang part of current liquid mixes wouldn't be too much of problem, but the peroxide concentrate would be likely to finish the belly-bomber off before it even exploded - or anyway cause one or another kind of inadvertent payload-jettison unpleasantness. Then there'd be the risk that stomach acids would render the charge ineffective, or make it explode early etc. Security guru and blogger Bruce Schneier hopes no one at the Transportation Security Administration heard about this new conveyance method. After all, air travelers take off their shoes before going through security screening because of failed shoe-bomber Richard Reid. Both Schneier and Page see the threat of suicide buttock bombers as ridiculous. The global intelligence firm STRATFOR, however, took the threat seriously, saying it is ideal for assassination or for smuggling IED parts on board a plane, where they can be removed and used to construct a bomb.

EXPERTS DISCUSS HOW TERRORISTS MIGHT ATTACK US

The Heritage Foundation recently convened a meeting of experts to discuss “Weapons of Mass Destruction and America’s Communities,” the various ways our terrorist enemies might attack us and our allies in the future, and what might be done to stop them. You can imagine what a merry gathering this was. The most obvious concern:

the spread of nuclear weapons. Within the group, there was consensus that if Iran, the world’s leading sponsor of terrorism, is not prevented from acquiring nukes, the result will be a nuclear proliferation “cascade.” Before long, so many countries would have so many nuclear devices that the chances of terrorist groups getting their hands on at least a few would increase exponentially. A scenario perhaps even more frightening: Terrorists using biological weapons, setting off epidemics of smallpox, Ebola virus, or other hemorrhagic fevers; a crop duster spreading ten pounds of anthrax causing more deaths than in World War II; genetically engineered pathogens – for example, a super-contagious form of HIV. A bio attack would be much easier to carry off than a nuclear attack; biological weapons can be manufactured in hidden laboratories and spread by unarmed and innocent-looking individuals. We also discussed radiological dispersal devices (RDD), more commonly known as “dirty bombs.” Such weapons are fairly simple to construct: radioactive materials – e.g. radium, radon, thorium – are wrapped around a core of conventional explosives. Though an RDD would not carry the lethality of a nuclear or biological weapon, its psychological and economic impact

could be substantial. How else might terrorists advance toward their goal, succinctly articulated by Iranian president Mahmoud Ahmadinejad as "a world without America"? Adm. Mike McConnell, until February of this year the director of National Intelligence – America's top spy – recently told Steve Kroft of 60 Minutes that he was increasingly concerned about cyber warfare, the use of computers and the Internet as weapons. "If I was an attacker and I wanted to do strategic damage to the United States . . . I probably would sack electric power" throughout as much of the country as possible, he said. McConnell worries also about the possibility that a cyber attacker could destroy the electronic processes and records that keep track of money and its movements, thereby setting off an economic collapse.

PREDICTING THE NEXT BOMB PLOT

By: James Carafano
Examiner Columnist
January 11, 2010

Muhammad bin Nayef is Saudi Arabia's chief counterterrorism official. A member of the royal family, he's in charge of fighting terrorists. That is why they tried to kill him. Last August, a known terrorist — Abdullah Hassan Taleh al-Asiri — declared he wanted to surrender personally to the prince. Saudi officials regarded the announcement as a small victory in the war on terror. Their policy is to actively encourage extremists to return home, turn themselves in and enter a rehabilitation program. Abdullah, they thought, was coming back to the fold. He waltzed through security and presented himself to the prince. Unfortunately for the prince, Abdullah had a bomb on (or perhaps in) his body. The weapon was supplied by al-Qaida in the Arabian Peninsula, which operates out of Yemen and Saudi Arabia (the same group responsible for the Christmas day attack on the Detroit-bound flight). A cell phone triggered the device, hurling body parts in all directions. Luckily, the prince was only slightly injured.

The near-miss illustrates how al-Qaida often operates:
1. Rely on familiar tactics
2. Introduce a new wrinkle or two to improve the tactics and keep them "fresh"
3. Be patient, wait and attack again

The attack on the prince followed an old tradition in East Asian assassinations: Turn a royal audience into a suicide attack. Recently, the Taliban used the same trick to kill seven CIA agents in Afghanistan. Three days before 9/11 they used the tactic to assassinate an anti-Taliban warlord, Ahmad Shah Masood. These attacks offer lessons for homeland security in the U.S. Combined with the 2006 London-based plot, they reveal a lot about what one kind of threat to expect in the future. **First,** news flash: The terrorists will continue to target passenger aviation. Gravity works. Any successful attack on an airplane will likely have catastrophic results. Moreover, when you attack a plane, you attack a network. Bring down one plane, and the whole worldwide system of passenger aviation goes into shock. Aviation targets are also attractive because there are an almost infinite number of domestic and international entry points to the system. Odds are, though, future attacks will still pass through

major flight hubs: International airports offer more flights, bigger planes and more potential victims. **Second,** don't hold your breath waiting for the next shoe-bomb to drop. Al-Qaida has gone years between aviation plots. In 1995, it planned to take down 11 U.S.-bound international flights with liquid explosives. The "Bojinka Plot" failed al-Qaida. They waited until 2006 before trying to mount the next liquid-explosive attack. In 2001, Richard Reid smuggled a bomb aboard a U.S.-bound flight from London. It was not until this Christmas that al-Qaida tried a similar style strike, with an underwear bomber routed through Amsterdam. **Third,** and most important: Al-Qaida will keep trying to improve the three types of bombs they've used so far. They will continue to refine some type of "binary" explosive — one that uses two or more ingredients, apt to elude airport security checks, may be brought separately onto planes and then combined into a bomb.The fact that they have tried liquid explosives at least twice shows they think it's a tactic still worth pursuing. Likewise, the Saudi strike shows that al-Qaida retains an unhealthy fascination with body bombs. And don't rule out another 9/11. We have to assume that al-Qaida has not given up on hijacking planes. No matter what security measures we throw up, al-Qaida will keep at it till it finds a weakness to exploit. Also, after the incident we will find out we had lots of "dots to connect." After all, we already know what they are trying to do. Most likely we will have known at least something about the attack before it happens. That's not to say security precautions are pointless. But it is a sobering reminder that we can't win this war simply by playing defense. Al-Qaida is the 21st century Terminator. You can't reason with it. You can't negotiate with it. It has to be destroyed and humiliated. The war won't be won or lost at airport scanning stations. The vital front is Afghanistan. And Pakistan. And all the other places around the world where al-Qaida affiliates plot and recruit and train for terrorist attacks. Maybe, the White House should call it a global war on terrorism.

RESEARCHERS CLAIM TO FIND INSURGENCY PATTERNS THAT CAN PREDICT FUTURE ATTACKS

Researchers from the University of Miami and other institutions claim to have found mathematical patterns in the behavior of insurgencies that can help predict future attacks. The most powerful tool in the wars of the future might just be an equation. Researchers from the University of Miami and other institutions claim to have found mathematical patterns in the behavior of insurgencies that can help predict future attacks. The findings were published in the journal Nature last month. For the study, researchers examined 54,000 attacks across nearly a dozen wars in countries ranging from Iraq to Colombia. "The sizes and timing of violent events within different insurgent conflicts exhibit remarkable similarities," they found. Neil Johnson, study co-author and physics professor at the University of Miami, said the researchers found a pattern to the way insurgents form and break up and the way they spread out deadly attacks. Less deadly attacks occur far more frequently than deadly ones, which may seem obvious. But the researchers found that the ratio of deadly attacks to less deadly attacks is fairly constant across all modern wars. "They're not random," Johnson told FoxNews.com. "It's the same for all of these different wars." He compared the calibrated chaos of insurgent warfare to the financial markets. As with traders on the stock market, he said, insurgents are making decisions timed for maximum impact. "They're all trying to look for the opportunity, and there's

a tendency to ration at the same time," he said. Johnson said the model he and other researchers are developing can't predict any attacks with absolute certainty but can pinpoint "pockets of predictability," even down to the day.Researcher Sean Gourley, in an interview with the non-profit TED, where he was a fellow, said the findings could be used to predict the size, distribution and timing of future insurgent attacks. "From this we can predict the likelihood of an attack occurring in a particular region or neighborhood during a specific time window," he said. He said the research could be used to "test" different war strategies in simulation before they are implemented. He also said it could be used to look for "early signs" of a potential war.

FIRST RESPONDERS AND EMOTIONAL DISTRESS

Professional first responders are prepared, equipped and trained to handle various emergency situations, from car accidents to terrorist attacks and other major disasters. This great responsibility, however, can trigger emotional distress. “As first responders, part of our job is to run towards a bad or challenging situation to help out, while everyone else runs away,” said Officer Dan Ennenbach, a Kirkwood, Mo., police officer. “**However, the psychological repercussions of what we may experience in those situations can be overwhelming and, in some cases, even life-changing. In a sense, we also can become victims, simply because we’re affected by what’s happened.** ” According to Miggie Greenberg, M.D., assistant professor of neurology and psychiatry at Saint Louis University School of Medicine, people react

to traumatic situations differently. It’s not uncommon, and is in fact normal and healthy, to experience a broad range of emotions. The challenge with first responders is that they are trained to deal with high-intensity situations without emotionally reacting. Therefore, the aftermath can be that much more devastating. Additionally, those who have experienced some type of trauma in the past are more likely to react adversely to a traumatic event. Like most first responders, Ennenbach has wrestled with the emotional aftermath of the tragic incidents he has witnessed during his 9

years on the force. He now uses his experience and knowledge to help other first responders better cope with the emotional challenges of the job.

Signs of Distress

Ennenbach is a crisis intervention team specialist who has been trained to recognize the symptoms of psychological distress, including lack of sleep, unexplained weight loss, lack of focus and irritability, to name a few. "Following a traumatic incident, you have to step back and evaluate things, both personally and professionally," advised Ennenbach. "Of course, in our line of work, it can be that much more difficult. It's important to recognize the difference between a normal, healthy reaction and an unhealthy one." Some normal reactions include being in shock, feeling sad, acting more emotional, having intrusive thoughts about the incident and behaving in a hyper-vigilant manner. These should fade over time. However, if one's day-to-day routine frequently is sidetracked by such reactions, this may be evidence of major distress. Some signs of psychological distress include constant anxiety, inexplicable crying, erratic behavior, isolation and the increase use of drugs and/or alcohol. This distress can be characterized as Critical Incident Stress Reactions (CISR), which occurs during or within 6 to 12 weeks following the critical incident, or Post Traumatic Stress Disorder (PTSD), which can last for months or years following the incident unless proper treatment is received. These diagnoses may require professional treatment.

Recovery

Generally, it takes some time to recover from the emotional wounds following a traumatic event. In the meantime, several solutions can help offset the effects. "First, having a reliable support network in place is key – from your friends and family to your workplace and faith-based community," Greenberg said. She also recommends regularly practicing the following preventative measures:

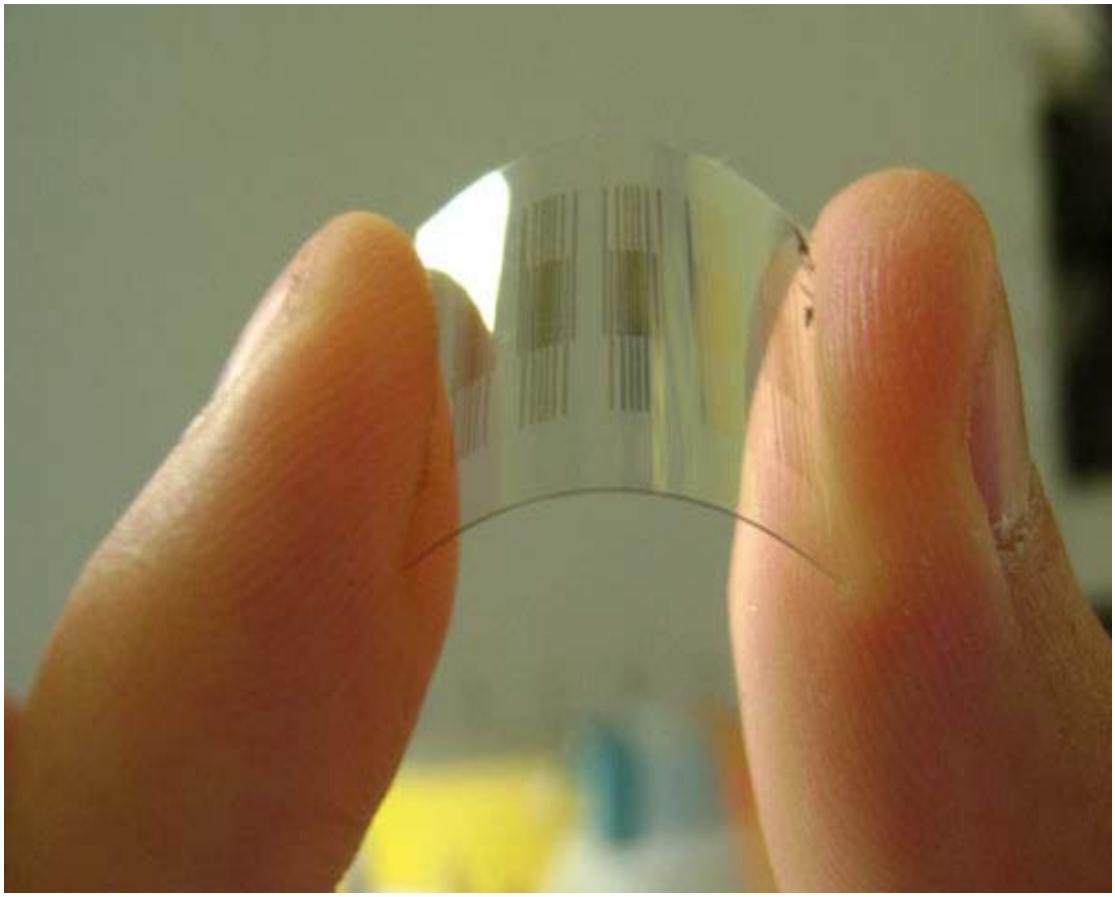
- Take a break from situations where you have no control. In other words, don't go back to work immediately after such an event.
- Connect with other people in your life, including your family, friends and colleagues.
- Exercise regularly to help relieve stress.
- If you or your colleagues are emotionally distressed following a traumatic event, ask for help. There are numerous resources available to help navigate through these difficult times. Research local support groups in your area. Consult with your general physician. Request a referral for a counselor or psychologist.

"I often remind my colleagues that emotional injuries are just like physical injuries," said Ennenbach. "We rely on medical professionals to properly treat our physical injuries; therefore, we should also rely on them for our emotional injuries."

CHEAP, SENSITIVE STANFORD SENSORS COULD DETECT EXPLOSIVES, TOXINS IN WATER

A sensitive new Stanford-developed disposable chip detects low concentrations of the explosive trinitrotoluene (TNT) and a close chemical cousin of the dreaded toxic

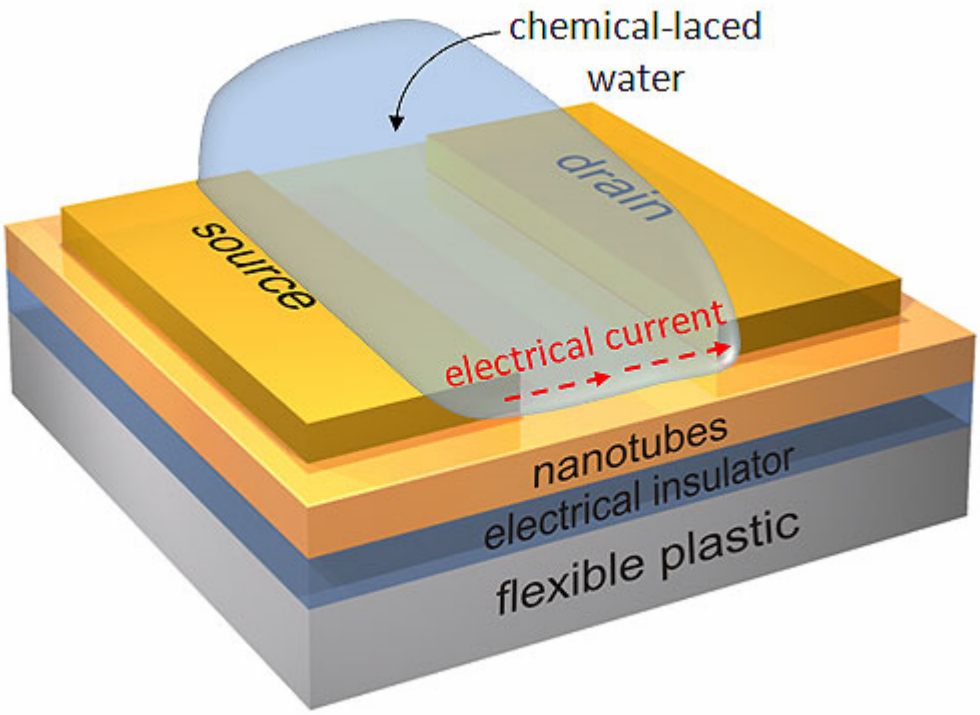
nerve agent sarin in water samples. The research appears online this week in the journal ACS Nano.Traces of TNT can leach into streams near munitions-making and testing sites, and then be detected downstream. Terrorists could try to mix sarin into a reservoir or water mains. An electronic sensor that can instantly detect very low concentrations in water would be a desirable technology for staying ahead of potential attacks, said chemical engineering Associate Professor Zhenan Bao, who leads the



group that developed the chip. Although many researchers around the world have devised a wide variety of chemical sensors, Bao said, the Stanford chip offers a rare combination of low-cost materials, low power usage, robust and repeatable performance in water, instant response and physical flexibility. To date, lower detection limits have only been achieved with complex, expensive, non-portable optical systems.

Extreme sensitivity

"We have used semiconducting carbon nanotube network transistors to make extremely sensitive sensors that are capable of operating stably under water," Bao said. "We showed sensitivity in the range of a few parts per billion for detection of explosive compounds such as TNT."



A diagram of a nanotube transistor on a flexible chip for detecting toxins or explosives in a water sample. A nanotube is a rolled-up sheet of carbon atoms that is only one atom thick. Every atom is therefore on the tube's surface. This makes single-walled nanotubes very sensitive to nearby molecules that would drift by in a water sample, says postdoctoral researcher and article co-author Melburne LeMieux. The Stanford sensors are more sensitive than other waterborne, nanotube-based sensors because they are built using processes developed in Bao's lab that ensure a high-density of well-aligned nanotubes that are almost purely semiconducting. Errantly placed or jumbled nanotubes would reduce the sensor's sensitivity. Semiconducting nanotubes – those that switch electrical current on and off rather than always conducting it like a wire – can detect a wider range of molecular interactions with greater sensitivity than purely conducting nanotubes. The chip itself is made of an inexpensive, flexible plastic substrate, rather than the more expensive, rigid silicon that underlies most computer chips. The researchers also use a thin polymer gate electrical insulator layer, which allows the device to operate on less than 1 volt of electricity. "By combining our nanotube self-sorting deposition process with our ultrathin cross-linked polymer dielectric [insulator] formulation, we've enabled underwater, nanotube-based chemical sensors," said paper first author Mark Roberts, a former graduate student who is now a postdoctoral researcher at Sandia National Laboratories.

Unmistakable results

In lab tests, LeMieux and Roberts found that when the chip was exposed to water with just 2 parts per billion of either TNT or dimethyl methylphosphonate (a sarin cousin), the chips instantly reported unmistakable changes in electrical current. "It's very rewarding when you add in the chemical and you see this very rapid response," LeMieux says. "I don't know if it's must-see TV, but it's definitely worth watching." To make real contributions to security, the authors acknowledge, the chips will have to be packaged into a field-worthy device with a power supply and a wireless transmitter. They also will require more sophisticated nanotube circuitry, or

microfluidics that can precisely sort through all the chemicals that would likely be present in a real-world water supply. Those are both next steps for the group. Support for the research came from fellowships from NASA, the Sloan Research Foundation and the Intelligence Community Postdoctoral Fellowship Program, as well as from the National Science Foundation.

COLORADO RELEASES VIDEO DESCRIBING THE 8 SIGNS OF TERRORISM

In an effort to educate and increase ordinary citizens' awareness of terrorism planning, the state of Colorado, its fusion center, and the Denver-based non-profit Center for Empowered Living and Learning (CELL) have co-produced a video exploring suspicious activities that may indicate terrorist planning. The video was released yesterday by Colorado Gov. Bill Ritter after giving a tour of the CELL, an antiterrorism education center, to Homeland Security chief Janet Napolitano. The film was financed by a $30,400 grant from the Department of Homeland Security (DHS), reported 9News.com. "Eight years after 9/11, it's important to remember that the United States is not immune from terror attacks," Ritter said. "The video will help empower citizens with the knowledge they need to protect our communities, our state, our nation." “The vigilance of individual citizens is critical to protecting our country from the threat of terrorism,” said Napolitano. “This video provides essential information on how to identify the warning signs and emphasizes the vital role of such assistance in state and local law enforcement’s counterterrorism efforts.” The eight minute video, "Recognizing 8 Signs of Terrorism," is narrated by Hall of Fame Denver Broncos quarterback John Elway and local news anchor Kim Christiansen. In the opening of the video, Elway explains to viewers that terrorism "can happen anytime, anywhere" as news footage of terrorist attacks of 9-11 and Oklahoma City roll across the screen.

This segues to Christiansen, who lists the **eight signs indicate terrorism planning.**

- Surveillance
- Elicitation (or trying to get information out of people close to a target)
- Tests of Security
- Funding
- Acquiring Supplies
- Impersonation (e.g. government personnel like mail carriers or company employees)
- Rehearsal
- Deployment

"When you witness any suspicious activities, you should report them to the Colorado Information Analysis Center," Elway says, referring to Colorado's fusion center. That is unless you believe the suspicious activities mean an attack is imminent. If so, contact 911, Christiansen says. The film comes just weeks after federal authorities with the help of state and local Colorado law enforcement arrested Najibullah Zazi, a Denver shuttle bus driver believed to have been planning a terrorist attack against New York City. One of the suspicious activities Zazi engaged in before his arrest was buying hydrogen peroxide and acetone from beauty supply stores around the Denver area.

SCANNING CROWDS FOR BOMBS

The airport checkpoint is a linchpin of aviation security, but one of its unintended consequences imparts vulnerability: the long, weaving line of travelers who await screening. The lines present suicide bombers with a potential target that is common not only to airports but also to public events where masses must pass through security screening. Passive millimeter wave scanners can spot suspicious objects under clothes, and someday, laser spectrometers may spot explosive residue on clothing yards away. Both technologies still, however, would require that people pass through choke points, as these technologies can only scan one person at a time. With these threats in mind, the Air Force Research Laboratory (AFRL) at Wright-Patterson Air Force Base, Ohio, pitted students from rival colleges against one another in a competition to see which school could better detect simple improvised explosive devices (IEDs) across large areas and groups. The winning entry, fielded by students from the University of Michigan, relied on sensors linked by a wireless network, with software that processed data from the sensors to spot potential threats. The concept holds the promise of scanning large areas and crowds for explosive threats. The AFRL based the competition's scenario in part on an historical event—the 1996 Olympic Park bombing in Atlanta, where Eric Rudolph detonated a fairly rudimentary IED—a pipe bomb composed primarily of metal. Teams from Michigan and arch rival The Ohio State University were challenged to detect similar threats as they passed through a 100-square-foot area packed with vehicles and volunteers that re-created a pregame tailgate party. Knowing the threat objects would likely contain large amounts of conductive metals, the Michigan team mounted their own homemade magnetometers atop skinny traffic cones and arranged them around the perimeter of the competition area. These devices transmitted data back to a notebook computer, which used the team's software to analyze the data and project potential threat objects onto a top-view rendering of the area. Ohio State developed a "system of systems" that included a magnetometer, an infrared camera, and a radar system that, when coupled with an electromagnet, could detect large metal objects. But, software woes plagued the radar, and Ohio State only detected one of six bombs, compared to four of six detected by Michigan. Michigan team member Ashwin Lalendran notes that magnetometers alone may not catch explosives that contain little or no conductive metal. The persistent limitations of spectroscopy and millimeter wave, however, have led even the government's top researchers to reexamine magnetometers for wide-area explosives detection, says Nick Lombardo, project manager with Pacific Northwest National Laboratory's Department of Homeland Security Standoff Technology Integration and Demonstration Program. Lalendran

sees the greatest value in Michigan's software system. As commercial devices used to detect traces of hazardous materials, explosives, biological agents, and radioactivity grow smaller, cheaper, and more sensitive, they might be incorporated into networked sensors that could scan wide areas for threats. The Air Force agrees, and hired Lalendran to continue his work at AFRL. The challenge was one of four the Air Force is holding this year. The laboratory pits interscholastic rivals against one another and gives competitors a tight deadline and a limited budget to create a pressure cooker, says David Shahady, the lead of AFRL's Innovation Program. "If you take a fairly serious problem and give it to these students, they're young, energetic, and creative. And you create an environment where there's not much time and there's competition, you find that they come up with these great solutions," Shahady says.