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Institute

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# NEWSLETTER **TERRORISM**

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## CBRNE-Terrorism Newsletter – 2016©

October 2016

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## Editorial

BrigGEN (ret'd) Ioannis Galatas, MD,  
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*Editor-in-Chief*  
CBRNE-Terrorism Newsletter



*Dear Colleagues,*

Again we went through a turbulent month!

### Key-points for October 2016:

- The **clowns scare wave** crossed the ocean and now is growing in Europe. Isolated cases in various countries bear the potential for future terrorist attacks;
- **Islamic State is under attack in Mosul** (Iraq) while loosing territories in Syria. Do not hurry to say good news because this may lead to a domino effect with multiple terrorist attacks in European territories from returning European jihadists that have no place to hide in conflict zones. Hiding between ongoing refugees tsunami flooding the gates of Europe could be their best option to return back home and continue doing what motivated them to join IS in the first place;
- Another related issue is what is **Turkey** pursuing by seeking active involvement in combat zones. Is it only the desire to control local oil fields or part of a bigger plan named "re-establishing the Othoman Empire" of the past. Doubting international conventions and overt/covert threats against Greece is not a good sign and not consistent with their ambition to enter EU or being a NATO member state. But when it is about money and profits who really cares about international law and global agreements and conventions?
- **Islamic State used chemical weapons** in both Syria and Iraq (even against US troops) and all expect to use more during the Mosul siege. The new debate concerns UAVs usage as vessels of CWAs and they buy them online from various sources – no questions asked.
- There is a lot of **anthrax** moving around the globe affecting both animals and human. Strange concentration of incidents that someone might get advantage of.
- **In Greece** the two problems we are facing continue to be critical – governance and refugees/illegal immigrants. For the first brain transplantation or genetic engineering might be the best solutions but both are not yet available in the medical world. For refugees/illegal immigrants it is Turkey that holds the key and our good neighbors threaten EU that they will open the gates in January 2017 if their free visa demand is not being accepted. The problem is that EU member states do have the defensive means already in place and can intercept the human influx. But the door keepers (Greece and Italy) do not. At least not without applying brutal force that will upset our sleeping allies in Central and Northern Europe – yes, those with big mouths and no viable solutions.
- **In the USA coming elections** is the new hit that amuses not only locals but the whole planet. It is really scary who will take over leadership of the free (?) world! How comes such a big power (the biggest) came up to depend on these two characters among 300 mil of US citizens? Perhaps the hidden message is that "we really do not care about your future and ethical values; we (the people in the backstage) care only about universal power and dominance". My prediction for November 8, 2016 is that Hilary Clinton will be elected only because she is a woman – that is all! It is interesting to remember the professions of the last 10 US Presidents – all male:





10	John F. Kennedy	Writer, Sailor (Navy Lieutenant)
9	Lyndon Johnson	Teacher, Public Official
8	Richard Nixon	Lawyer, Sailor (Navy Lieutenant Commander)
7	Gerald Ford	Football Player, Sailor (Navy Lieutenant Commander), Lawyer
6	Jimmy Carter	Sailor (Navy Lieutenant), peanut farmer, writer
5	Ronald Reagan	Actor & broadcaster, President of the Screen Actors Guild
4	George W. Bush	Pilot (Navy Lieutenant, Junior Grade), Businessman (Oil), C.I.A. Director, Ambassador to China.
3	Bill Clinton	Lawyer, Law lecturer
2	George W. Bush	Pilot (Texas Air National Guard), Businessman (Oil, baseball)
1	Barack Obama	Community Organizer, Lawyer. Lecturer (informally considered by some to be a professor) – <b>First Afro-American President ever.</b>

On Monday 17th of October the International CBRNE Institute hosted an “Information Day” on “Technology for countering CBRNE threats” for members and non-members. The Day opened with a welcome note from the Mayor of Les Bons Villers, Mr. Emmanuel Wart, followed by a presentation from Mr. Philippe Quevauvillier from DG Home Affairs, European Commission. The participants’ list included lecturers, professors, a Belgian Colonel, CBRN & EOD experts, medical practitioners and police personnel from Belgium, Netherlands, Italy, Spain, Sweden, France, Germany and Poland. During this Information Day the official inauguration of the CBRN Knowledge Center (CBRN-KC) and its new Manager (BrigGen [ret] Ioannis [John] Galatas, MD, MA, MC (Army) was made by ICI’s Managing Director Mr. Yves Dubucq. In his introductory lecture, Galatas presented an overview of the goals of CBRN-KC and the activities/actions planned for the period 2016-2017.



The Editor participated in the EU EDEN Project Live Demo/Drill conducted in Rome, Italy at Gemelli Policlinico. Two main conclusion were driven from this medical CWA drill: (1) Twelve years after the deployment of the Olympic Hospital CBRN Response Unit created from scratch for the needs of the Athens 2004 Olympic Games (the first summer Olympics after 9/11) the problems remain the same and the overall attitude of the medical community is equally identical... “It will not happen to us” but “let us do something not to be accused that we have done nothing!” Let us only hope that this specific hospital – one of the biggest in Italy (also called “Pope’s hospital) will continue its efforts and pursue excellence in the months/years to follow! (2) Many good specialized CBRN products are now available and a few more are underway. The main problem is that the medical/hospital community got to know better the CBRN industry community and by working together to find solutions and fill existing gaps.



#### And some promising news of interest to CBRNE First Responders:



- New candidate vaccines against the plague show promise



- First LVL Band Wearable Hydration Sensor
- Experimental Zika Virus DNA Vaccines Protective in Monkeys

Take care First Responders! Be more actively involved in planing and decisions' making since only you face the enemy in the eyes on daily basis!

*The Editor-in-Chief*



## The robot bodyguard is coming — and you'll want one

By Zoltan Istvan

Source: <http://venturebeat.com/2016/09/24/the-robot-bodyguard-is-coming-and-youll-want-one/>

Sep 24 – I recently consulted with the US Navy on all things “[transhuman](#).” In those conversations about how science and

evolves. The good news is, there's already years of information to draw on. Human-robot interaction and protection have been here in the form of robotic dogs for nearly a decade. There are dozens of different brands and models available — some of which offer motion detector warnings to protect against burglars and can be programmed to bark at intruders. While some will say robot pets are no more efficient than well-placed cameras, microphones, or speakers, they do offer genuine and personal protection for consumers – not to mention a sense of novelty and enjoyment.



technology can help the human race evolve beyond its natural limits, it was clear that military is keen on replacing human soldiers with both fighting and peacekeeping machines so American military lives never have to come under fire or be in harm's way.

However, it's the peacekeeping technology that is particularly interesting for many civilians. While you wouldn't want an armed Terminator in your home, you might like a robot that travels with you and offers personal protection, like a bodyguard. In a survey by [Travelzoo](#) of 6,000 participants, nearly 80 percent of people said they expect robots to be a significant part of their lives by 2020 — and that those robots might even join them on holidays.

The robotics industry is already considering this, and recently debuted some security models. A few months ago China came out with its [Anbot](#), which can taser people and be used for riot control. And South Korea already uses mobile robot guards in its prisons. Even in San Francisco, you can rent out robot guards to protect your businesses and property. However, the rent-a-robot company, [Knightscope](#), recently came under fire for accidentally running over a [toddler](#) at the Stanford Shopping Center. Needless to say, problems are expected as the burgeoning field of robot-human interaction

Of course, it's not just robots that offer personal security. Security drones, which can follow you while mountain biking in the forest or your child walking to school, are already here. And driverless cars that take college students from a bar to their homes are just months away from hitting the market. Even personal residences are now being wired with basic AI intelligent systems — including fire alarms — that can communicate with residents and alert police if something is wrong. Some apps on smartphones, like [SafeTrek](#), alert authorities if a held phone is dropped. This can be especially useful if you're walking in a dangerous area late at night.

The age of near-total robot security protection will likely be here in less than a decade. America got a small inkling of that when it was reported that the shooter in Dallas — who took the lives of five police officers — was killed by a police robot that detonated a bomb. Media reported that it was the first known killing of a human by a police robot. And given the increasing number of police forces around America that want to own a robot, it surely is the start of a much broader system of security across the land. For example, in my presidential campaign, I advocate for tens of thousands of drones monitoring America's borders



instead of a giant wall, as Donald Trump proposes. Drones would cost far less and be far more environmentally friendly.

While the robot that killed the Dallas shooter is not yet capable of offering much security to the average person, the writing is on the wall. Executives, public figures, and even presidential candidates like myself worry about personal safety. I'd love to regularly have a robot watching me to make sure no one is going to harm me or my family. And so might millions of other people. They may want robot protection in the same way tens of millions of Americans have guard dogs — to protect family, property, and persons. Who doesn't want a protective butler programmed to care most about your safety? They could even greet guests at the front door or accept packages from UPS.

The four US Navy officers I spoke with recently agreed the future would be heavily dominated by robots — and that those robots could likely be made to protect people. What wasn't so easily determined is who would decide the rules of protection and engagement. Do we follow Asimov's [outdated laws](#)? Do we give robots power to kill in the pursuit of safety? Will a government body be responsible for regulating robots? These are the types of questions that will dominate conversations around robot bodyguards as they become more of a reality, questions I'll look to address in my keynote next week at [RoboBusiness 2016](#) in San Jose.

Multiple government agencies will have to be involved with the regulation of personal robot bodyguards — including the creation of one central agency that greenlights robot endeavors and applications in the first place, an initiative I have advocated for. Even more so than the Internet, the age of robots presents a plethora of ethical questions humans have not faced before. And given that we humans haven't yet mastered the art of providing security for ourselves — which is why there's been such controversy this year around police brutality across America — it's clear we don't have all the answers needed to fail-proof the process in robots. Philosophers, ethicists, roboticists and politicians will have to come together to

determine the best path forward — and to decide who the liabilities will fall on when failure occurs.

One thing is for sure, despite the accidents that will occur, there's nothing quite like the physical presence of an 8-foot-tall piece of intelligent machinery ready to confront a rogue individual or element when you need it. And bear in mind, those rogue elements aren't always just people — they could include wild animals, poisonous snakes, mean dogs, or a smoke-filled burning house.

Interestingly, another issue will be protecting humans against other robots. While developed nations might program robots to be our bodyguards — there's always the possibility that, in nations where civil strife is prominent, people could do exactly the opposite. Will there be a market for robots that carry out dirty or criminal work — robots programmed outside of all civility? Will a black market for those types of robots emerge? The answers to those questions are almost certainly yes.

Then, there's the questions of machine intelligence. If a machine is smart enough to know the difference between a bad guy and a good guy, would that machine have any thoughts of what it is: good or bad? Humans — and governments — don't want machines to make too many decisions on their own, at least not until we have nearly perfected security robots. And that is a long way away. The good news is, self-driving car technology will be about five years ahead of robot security guard technology, and I'm sure it will provide a wealth of real life experience to draw upon — especially the complex moral choices that machine intelligence faces. The classic question with self-driving cars is, when faced with a [choice](#) of whether to harm a family of five or harm a single person, what does the car choose? This type of programming must also be built into robot security guards.

Regardless of all the thorny questions and conundrums coming in the age of robotics, a personal robot bodyguard is something that is just years away from purchase. I suspect many people will want one.

*Zoltan Istvan is the 2016 US Presidential candidate of the Transhumanist Party, a political organization dedicated to putting science and technology at the forefront of American politics.*





## Virtual Guard (.gr)

Source: [http://www.virtualinternational.gr/Virtualguard\\_en.html](http://www.virtualinternational.gr/Virtualguard_en.html)

Why Virtual Guard®? Scientific studies have shown, that no man is able to focus his attention on one specific point for too long. Even when we are talking about CCTV systems with just 4 cameras, no guard is able to stay concentrated after the first 12 minutes of continuous monitoring. "After 12 minutes of continuous video monitoring, an operator will often miss up to 45% of onsite activity. After 22 minutes of viewing, up to 95% is overlooked ." Buyer Beware, Oct/Nov 2002 "A guard can control a single monitor just 20 minutes before missing relevant objects ." Sandia National Lab, USA.

Therefore, we had to resolve the problem that concerns a man's ability to supervise continuously an area through a CCTV system. Our service, Virtual Guard® with its state of the art motion detection system, can be thoroughly programmed, to trace every slight movement before it becomes visible to the human



eye. The system can distinguish human movement from that of a pet or of tree leaves moving to the blowing of air. With the motion detection, and in zero time, the state of the art central monitoring station of Virtual International receives an alarm signal for the further tackling of the event. The increasing need to reduce operational costs, led is to the establishment of the Virtual Guard® service, which offers evidently a scale economy of approximately 80% to 90%. What is the Virtual Guard® service? The service includes the complete control of the protected area by our company's 24/7 CENTRAL SIGNAL & IMAGE MONITORING STATION with a higher purpose to provide with Security beyond any boundaries. The "VIRTUAL GUARD®" service includes the monitoring of the intruder alarm system, the monitoring of the CCTV system through motion detection alarms utilizing the VIDEO ANALYTICS technology.

Virtual international is a Central Monitoring Station with fully staffed monitoring facilities capable of providing customized solutions that can accommodate and benefit virtually any type and size of facilities and installations, all while reducing significantly security costs. Its mission is to monitor, control and timely intervene on your behalf.

### Its basic services include:

- The 24/7 Central Alarm Monitoring Station.
- The 24/7 Central Video Monitoring Station with the VIRTUAL GUARD service.
- Provision of remote facility control (such as management of personnel entry and exit, control of vital building functions e.g. air conditioning, resulting in the reduction of the operational expenses e.t.c.)

Virtual Guard is constantly growing. Up to this day we have been assigned with the protection and responsibility for the safety of approximately 5.000 customers throughout Greece and Balkans territory. Our personnel utilizes state-of-the-art equipment using cutting-edge technology, (Hardware & Software) pioneering in both the Greek market and the whole of Europe concerning the specialized services we provide. The technological equipment it uses ensures high availability of services (300%), data safety and the prompt response and





solution to any issue regarding the safety of its customers. Its personnel is strictly selected, trained and specialized in the management – assessment of alarm and image signals with effectiveness in crisis solutions.

► Watch: <https://www.youtube.com/watch?v=XTOn4iQNTes>

► Watch real incident video at: <https://www.youtube.com/watch?v=86lZ6EqZEal>

## 'Asylum spray' handed out in Denmark by far-right party 'to ward off migrant attacks'

Source: <https://www.rt.com/news/360682-danish-nationalists-refugee-spray/>

Sep 30 – The anti-immigrant Party of the Danes has been spotted handing out cans of 'asylum spray' on the streets. The "legal and effective" way of opposing the "problem" of migrants was launched in Haderslev – the location of recent harassment reports.



Haderslev, a port city, was one of the places in Denmark where women complained about migrants harassing them at nightclubs, so it seemed like the perfect testing ground to Daniel Carlsen, the founder of the Danskernes Parti.

*"I don't think it is provocative. We are tackling an actual problem in our society, where many Danes*

*feel unsafe," Carlsen told TV Syd. "Partially because there are so many migrants in the country and partly because one isn't allowed to defend one's self."*

To keep things within the rule of law, hair spray was used for the campaign, as pepper spray use is forbidden in Denmark.

Last week's antics in Haderslev quickly stirred controversy. Some found it hard not to be visibly upset by the display, as was the case with Charlotte Bech, from Silkeborg.

*"[Migrants and refugees] have been through so much and then they're told that they are so undesirable that we had to make a spray to use on them. One thing is the opinion that we don't have the capacity [for refugees]*



*or an opinion that some of them might not fit in to our culture. But to make a joke out of it is not okay," she told TV Syd, as quoted by Local.*

But there were those who cheered the "legal and effective" spray. *"It's great. It matches bloody well with my attitudes and opinions. It is after all them [refugees] who we are protecting ourselves against at the moment,"* another woman, Diana Nielsen, said.

Danskernes Parti founder Carlsen said that 137 people accepted the spray can from his group.



His group has previously engaged in anti-immigrant attacks through popular media – be it a poster with white children playing, with the words “*Your children deserve a Danish Denmark,*” or its criticism of the French national team for the presence of players of African descent. In April, Carlsen defended the vandalism of a Danish municipality with road signs showing the distance to Syria and Iraq. Like other European countries, Denmark has seen a mixed response to the refugee influx.

In mid-August, police arrested a Dane for trying to blow himself up at an asylum center. Denmark registered 21,000 asylum applications in 2015, which made it one of the main EU destinations for refugees per capita, behind only Finland, Austria, Germany and Sweden.

## ‘The Brown Nightmare’: Report Reveals Xenophobia on the Rise in Germany

Source: <https://sputniknews.com/europe/20160923/1045612604/reports-shows-rising-german-xenophobia.html>

Sep 23 – **The German cabinet released a report on Wednesday that details the rise of xenophobia and anti-immigrant attacks.**

Deutsche Welle reported that Social Democrat Iris Gleicke was “very upset” and expressed that governments at the state, district and federal level should “act decisively” to address the

behind other parts of the country in life expectancy, income and health, elements that could be at the root of resentment against the one million migrants that have flooded the formerly communist region since 2015.

Stefanie Loos Merkel Admits Germany Waited Too Long Before Raising Refugee Issue



Conservative populist political party Alternative for Germany (Afd) has also seen an increase in support. DW columnist Christoph Hasselbach writes that much of the issue stems from German citizens feeling left out of the political process by politicians like Chancellor Angela Merkel. “On a moralistic whim, Merkel

increase in right-wing extremism.

A separate report by the Federal Office for the Protection of the Constitution, Germany’s domestic intelligence agency, states that eastern states Mecklenburg-West Pomerania had 58.7 extremist attacks for a million people, with 49.6 in Saxony and 51.9 in Brandenburg. Western states showed 10.5 attacks per million people. Referencing the brown uniforms worn by Nazis, Gleicke warned, “We East Germans have to take the matter into our own hands and decide whether we want to protect our cities and villages or leave them to the brown nightmare. Society should not look away when people are attacked or refugee shelters are set on fire. A lot is on the line for east Germany.” The report indicated that eastern Germany is straggling

has turned Germany into an experiment that will affect generations to come — for the worse,” he wrote. “Germans were never asked if they wanted this or were prepared to make the necessary sacrifices, both financial and cultural. There is a difficult-to-pinpoint sense of no longer feeling at home in your own country. In response, many politicians have rejected this feeling of discomfort, or at least advocated to keep it to one’s self, but certainly not make a political issue out of it.” Acts of terrorism also serve as justification for attacks on immigrants. Fifteen people were killed in Germany in five attacks between July 18 and July 2, with dozens wounded. Daesh took responsibility for two of





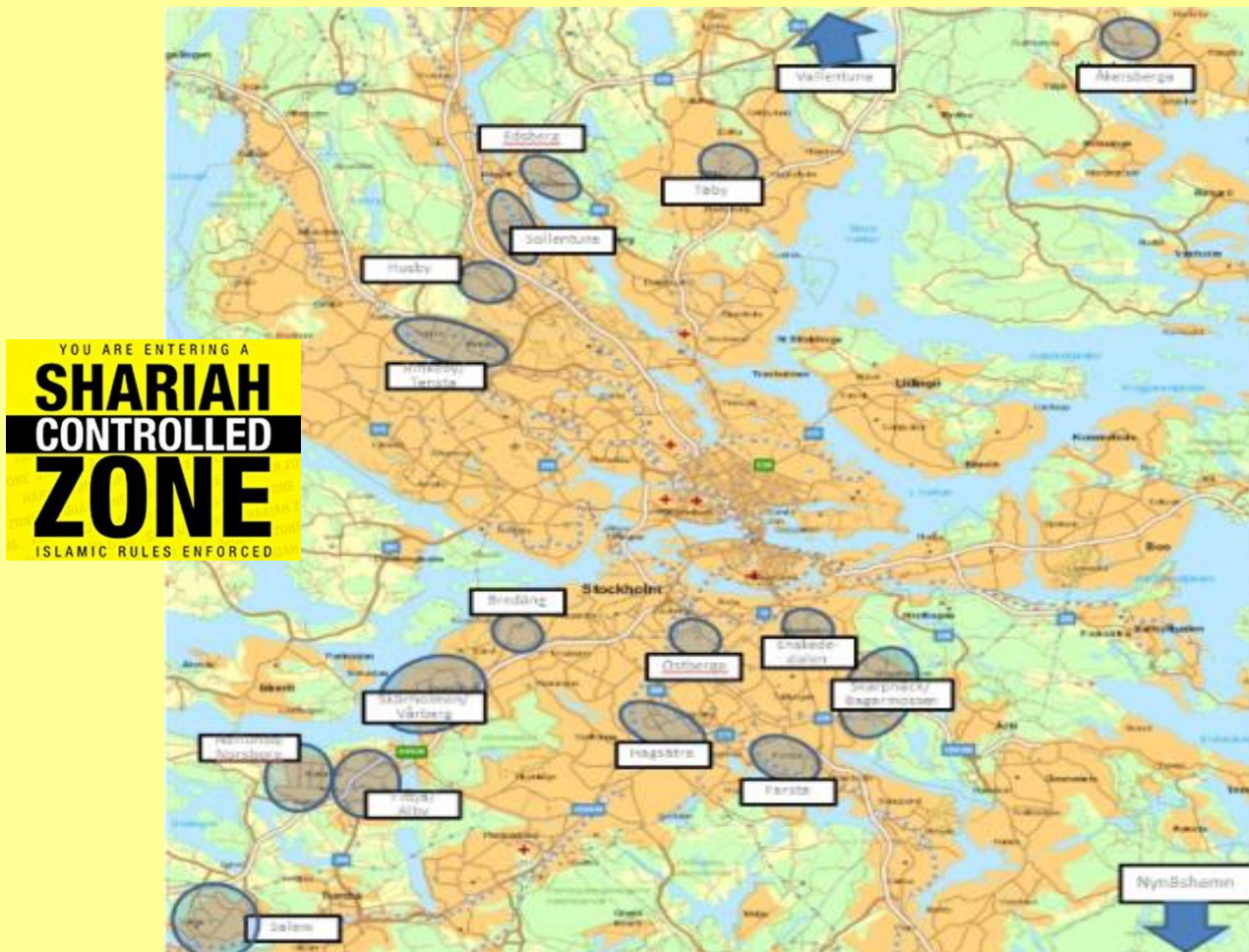
the attacks, and two of the attackers were asylum seekers.

Merkel has remained steadfast on her immigration policy, despite the attacks, telling reporters during a news conference shortly after, "For me it is clear: we will stick to our fundamental principles." She noted an excerpt

from the German constitution that reads, "Human dignity shall be inviolable," and stated, "These principles mean we will give asylum to those who are politically persecuted and we will give protection to those who flee war and expulsion according to the Geneva Refugee Convention."

## Swedish police lose control amid refugee crisis as number of 'no-go zones' rises to 55

Source: <https://www.rt.com/news/360561-sweden-no-go-zones/>



Sep 25 – The inflow of asylum seekers in Sweden, a country with one of the most liberal laws towards refugees, is putting an increasing strain on the country's police. There are now reportedly 55 areas in the country, where the law is not fully upheld.

Dubbed “no-go zones” in some media reports, there are now 55 areas in Swedish cities, where the police have significant problems in tackling crime. They are divided into three categories depending on how significant the risk to officers working there is.

The number has risen from 50 in February, when the police last gave a comprehensive report on the issue, and last week, when the law enforcement agency gave an update. According to [media reports](#), the service is facing a major crisis of self-confidence, with as many as three



officers on average asking to resign on a daily basis. Internal polls say four officers out of five have been considering a change of profession lately.

*"We have a major crisis. Many colleagues are choosing to quit,"* police officer Peter Larsson told the Norwegian broadcaster NRK. *"A drastically worsened working environment means many colleagues are now looking for other work."*

If officers go into a no-go zone, they risk being verbally attacked or pelted with stones. Patrol cars may be set ablaze or stolen.

Crime rates in the blacklisted areas are on the rise, the police report said. The offenses range from vandalism to drug crimes to sex assaults and gun violence.

One particular example is Malmö, Sweden's third-largest city, where more than 70 cars were set on fire by arsonists over several days. The police managed to arrest only one suspect while investigating those attacks.

**Ironically, after the Hungarian government used the existence of no-go zones in Europe to promote its cause for an upcoming referendum on EU quotas, the Swedish embassy rebuked it saying that no such areas existed in their country.**

*"It is important to us that accurate information about Sweden is given to the citizens of Hungary. The embassy has therefore had reason to object sharply to a map of Europe with red markings in a handful of member states, including Sweden, in which the Hungarian government claims that so-called 'no-go zones' exist, where police and the state have no control over citizens' safety,"* Anna Boda, the Deputy Head of the Swedish diplomatic mission in Budapest [told](#) The Local.

**"No-go zone" is a loaded term with no clear definition and caused division earlier amid the ongoing refugee crisis in Europe. Last year Paris wanted to sue Fox News for a report, which said no-go zones existed in the French capital.**

## "There's No Turning Back!" Swedish TV Ad Says Swedes Must Accept Multiculturalism

Source: <http://www.informationliberation.com/?id=55512>



Sep 18 - Swedes need to give up their identity and *they* must integrate with migrants because "being Swedish needs to be about more than skin color and place of birth."

In [this new TV advert](#) from Swedish charity organization "IM," Swedes are called on to create "Det Nya Landet," or "The New Country," which appears to just be Africa with some Muslims and one Asian dude.





The ad says the onus is not just on "new Swedes who need to integrate," but "everyone needs to be integrated, established Swedes too," meaning old people.

The big finale is to present a Somali Muslim woman in full hijab as the embodiment of "The New Country," or the new Sweden.

So much for Swedish blondes.



Here's the English text from [their website](#):

*There is no turning back. Sweden will never be what it was before. It is an understanding of what the world actually looks like - that Sweden is needed as a safe place for people who need refuge. Some yearn back to how it used to be. It's okay to miss the past and it's okay to talk about it - but we have to seek ways forward, and find a way for everyone to live together. Because now we have a Europe and a Sweden that is what it is: in a state of change.*

*It's time to realise that new Swedes will take up room with cultures, languages and customs, and it's time we see this as a positive force. The new country is about shaping a new future. Being Swedish needs to be about more than skin color and place of birth. It needs to be you, me and everyone together.*

*It's not just new Swedes who need to integrate. Everyone needs to be integrated, established Swedes too. Integration does not mean that one party should adapt to the other, or that everyone should think, do and feel the same. Integration is about meetings, and real meetings are built on reciprocity.*

*Let us create a future based on both realism and vision, in equal measure. Let's formulate a greater sense of "we" and let's build a country where we put hatred and fears aside. We all have the new country within us; in our views, thoughts and actions. The time has come to build a country that is proud, inclusive and sustainable - something new.*

***The new country.***

While comments and thumbs up/thumbs down ratings were disabled on the original video, the translated repost has been overwhelmingly down voted.

## **Rich nations' self-interest means refugee crisis will get worse, not better: Amnesty**

Source: <http://www.homelandsecuritynewswire.com/dr20161004-rich-nations-selfinterest-means-refugee-crisis-will-get-worse-not-better-amnesty>

Oct 04 – **Wealthy countries have shown a complete absence of leadership and responsibility, leaving just ten countries, which account for less than 2.5 percent of world GDP, to take in 56 percent of the world's refugees**, said Amnesty International in a comprehensive assessment of the global refugee crisis published today.



The report, [Tackling the global refugee crisis: From shirking to sharing responsibility](#), documents the precarious situation faced by many of the world's twenty-one million refugees. While many in Greece, Iraq, on the island of Nauru, or at the border of Syria and Jordan are in dire need of a home, others in Kenya and Pakistan are facing growing harassment from governments.

Amnesty says that the report sets out a fair and practical solution to the crisis based on a system that uses relevant, objective criteria to show the fair share every state in the world should take in in order to find a home for 10 percent of the world's refugees every year.

"Just ten of the world's 193 countries host more than half its refugees. A small number of countries have been left to do far too much just because they are neighbors to a crisis. That situation is inherently unsustainable, exposing the millions fleeing war and persecution in countries like Syria, South Sudan, Afghanistan, and Iraq to intolerable misery and suffering," said Amnesty International Secretary General Salil Shetty.

"It is time for leaders to enter into a serious, constructive debate about how our societies are going to help people forced to leave their homes by war and persecution. They need to explain why the world can bail out banks, develop new technologies and fight wars, but cannot find safe homes for 21 million refugees, just 0.3 percent of the world's population.

"If states work together, and share the responsibility, we can ensure that people who have had to flee their homes and countries, through no fault of their own, can rebuild their lives in safety elsewhere. If we don't act people will die, from drowning, from preventable diseases in wretched camps or detention centers, or from being forced back into the conflict zones they are fleeing."

#### **Refugees across the world in dire need**

**The report underlines the urgent need for governments to increase significantly the number of refugees they take in, documenting the plight of refugees on all continents:**

#### ***Sent back to conflict zones and human rights violations***

- Growing numbers of refugees in Pakistan and Iran are fleeing Afghanistan in the [face of an intensifying conflict](#). Afghan refugees in Pakistan face increasing harassment from the authorities, who have already forced more than 10,000 to return to their war-torn country.
- In Kenya, refugees living in the Dadaab camp are facing pressure to return to Somalia. The government wants to reduce the [size of the refugee camp's population](#) by 150,000 people by the end of 2016. More than 20,000 Somali refugees have returned to Somalia from Dadaab
- More than 75,000 refugees fleeing Syria are currently trapped at the border with Jordan in [a narrow stretch of desert known as the berm](#).

#### ***Kept in dire conditions***

- In Southeast Asia, Rohingya refugees and asylum seekers from Myanmar live in constant fear of arrest, detention, persecution and in some cases refoulement. In detention centres in Malaysia the Rohingya and other refugees and asylum-seekers endure [a range of harsh conditions](#), including overcrowding, and are at risk of disease, physical and sexual abuse, and even death due to lack of proper medical care.
- The report accuses some EU countries and Australia of using "systemic human rights violations and abuse as a policy tool" to keep people out. In July 2016, Amnesty International found that the 1,200 women, men and children living on Australia's offshore detention centre on [Nauru suffer severe abuse, inhumane treatment, and neglect](#).
- The EU is pursuing dodgy deals to limit flows of refugees and migrants with [Libya](#) and Sudan, amongst others. Refugees [suffer widespread abuses in immigration detention centres](#) where they are held unlawfully, without access to lawyers, following their interception by the Libyan coastguard or detention by armed groups and security officers. The security forces Sudan uses to control migration have been associated with human rights abuses in Darfur.





***Forced to take dangerous journeys***

- From January 2014 to June 2015, UNHCR recorded 1,100 deaths at sea in Southeast Asia, mostly of [Rohingya refugees](#), although the number of deaths is likely to be much higher.
- In 2015 more than one million refugees and migrants reached Europe by sea, with almost 4,000 feared drowned. More than 3,500 fatalities have already died in the first nine months of 2016.
- In 2016 women refugees from sub-Saharan Africa who had passed through Libya told Amnesty International that [rape was so commonplace](#) along the smuggling routes that they took contraceptive pills before travelling to avoid becoming pregnant as a result of it. Refugees and migrants have reported that people smugglers hold them captive to extort a ransom from their families. They are kept in deplorable and often squalid conditions, deprived of food and water and beaten.
- Refugees and asylum-seekers fleeing growing violence in Central America's Northern Triangle have faced kidnappings, extortion, sexual assault and killings during the journey through Mexico towards the US border.

"The refugee crisis is not limited to the Mediterranean. All over the world refugees lives are at risk, crammed into packed boats, living in abject conditions and at risk of exploitation, or taking dangerous journeys where they are at the mercy of smugglers and armed groups. World leaders must work out a fair system to share the responsibility for helping them," said Salil Shetty.

**Countries neighboring conflicts left to shoulder vast majority of world's refugees**

The report says that unequal sharing of responsibility is exacerbating the global refugee crisis and the many problems faced by refugees. It calls on all countries to accept a fair proportion of the world's refugees, based on objective criteria that reflect their capacity to host refugees.

The report says a basic common-sense system for assessing countries' capacity to host refugees, based on criteria like wealth, population and unemployment, would make it clear which countries are failing to do their fair share.

The report highlights the stark contrast in the number of refugees from Syria taken in by its neighbors and by other countries with similar populations.

- For example, the United Kingdom has taken in fewer than 8,000 Syrians since 2011, while Jordan – with a population almost ten times smaller than the United Kingdom and just 1.2 percent of its GDP – hosts more than 655,000 refugees from Syria.
- Lebanon, with a population of 4.5 million, a land mass of 10,000km<sup>2</sup> and a GDP per capita of \$10,000, hosts over 1.1 million refugees from Syria, while New Zealand with the same population but a land mass of 268,000km<sup>2</sup> and a GDP per capita of \$42,000 has only taken in 250 refugees from Syria to date.
- Ireland, with a population of 4.6 million, a land mass seven times bigger than Lebanon and an economy five times larger, has so far only welcomed 758 refugees from Syria.

The report shows how the richest countries in the world could take a fairer share of the current world population of vulnerable refugees. For example, using the criteria of population size, national wealth and unemployment rate, then New Zealand would take in 3,466. These are eminently manageable numbers, when contrasted against the 1.1 million UNHCR-mandate refugees in Lebanon, with its similar population.

"The problem is not the global number of refugees, it is that many of the world's wealthiest nations host the fewest and do the least," said Salil Shetty.

"If every one of the wealthiest countries in the world were to take in refugees in proportion to their size, wealth and unemployment rate, finding a home for more of the world's refugees would be an eminently solvable challenge. All that is missing is cooperation and political will."

**More governments must show leadership**

The report cites Canada as an example of how, with leadership and vision, states can resettle large numbers of refugees in a timely manner.

Canada has resettled nearly 30,000 Syrian refugees since November 2015. Slightly more than half were sponsored by the Canadian government, with close to 11,000 others arriving



through private sponsorship arrangements. As of late August 2016, an additional 18,000 Syrians' applications were being processed – mainly in Lebanon, Jordan and Turkey.

Today only around thirty countries run some kind of refugee resettlement program, and the number of places offered annually falls far short of the needs identified by the UN. If this increased to 60 or 90, it would make a significant impact on the crisis, the report said.

To encourage more countries to take effective action, Amnesty International is calling for a [new mechanism for resettling vulnerable refugees](#) and a new global transfer mechanism for acute situations like the Syrian conflict, so that neighboring countries would no longer be overwhelmed when large numbers of people flee for their lives.

"The world cannot go on leaving host countries overwhelmed because they are next to a crisis country with no support from the rest of the world. While a small number of countries host millions of refugees, many countries provide nothing at all," said Salil Shetty.

"World leaders have completely failed to agree a plan to protect the world's 21 million refugees. But where leaders fail, people of good conscience must increase the pressure on governments to show some humanity towards people whose only difference is that they have been forced to flee their home."

**EDITOR'S COMMENT:** The article is not fair – at least for Europe! Greece one of the richest countries in the continent already hosted 60,000 refugees and is ready to host a few thousand more!

## Hospitals under 'unprecedented' attack in war zones

Source: <http://english.alarabiya.net/en/News/middle-east/2016/10/03/Hospitals-under-unprecedented-attack-in-war-zones.html>

Oct 04 – Medical charity Doctors Without Borders (MSF) has hit out at the "unprecedented" number of attacks on medical facilities in Syria and Yemen, a year after the deadly bombing of its hospital in Afghanistan killed 42 people.



Monday marks the first anniversary of the US strike on the trauma center in Kunduz, which triggered global outrage and forced President Barack Obama to make a rare apology on behalf of the US military still deployed in war-torn Afghanistan.

"Over the past year, we recorded 77 attacks against medical facilities operated or supported by MSF in Syria and Yemen: this is unprecedented," Meinie Nicolai, MSF president, told reporters in Kabul.

"Hospitals are now part of the battlefield," she added.

MSF has said the raid on the hospital in Kunduz last October by a AC-130 gunship lasted nearly an hour and left patients burning in their beds with some victims decapitated and suffering traumatic amputations.

The organization has branded it a war crime. However, an investigation by the US military earlier this year concluded that the troops targeted the facility by mistake and decided they would not face war crimes charges.

MSF had called repeatedly called for an independent international inquiry.

The charity spoke out as condemnation grew over the bombing of hospitals in the rebel-held east of the Syrian city of Aleppo, which has been under attack by the regime and its ally Russia.

"Health facilities and staff are targeted in Yemen and Syria ... most often in the name of war against terrorism," Nicolai said.

"In Syria, attacks against medical centers for civilians and against ambulances are systematic."



## Iran develops two new UAV types from captured RQ-170 Sentinel

Source: <http://www.janes.com/article/64262/iran-develops-two-new-uav-types-from-captured-rq-170-sentinel>

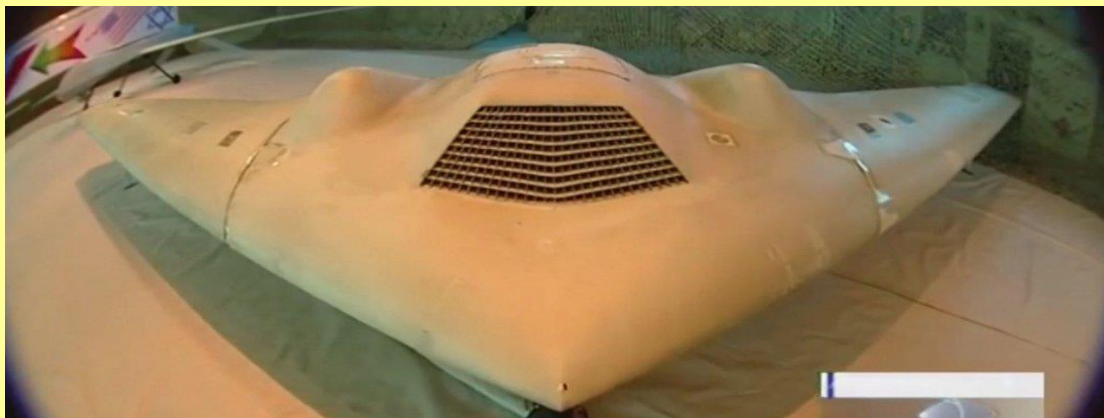


A screenshot from Iranian news showing the UAV production line, which appears to show two different types based on the US Lockheed Martin RQ-170 Sentinel. Source: SimaNews/YouTube

Oct 03 – Iran appears to have developed two 'new' types of unmanned aerial vehicle (UAV) derived from the US-built Lockheed Martin RQ-170 Sentinel that was captured in 2011, state media disclosed on 1 October.

Footage of a production line was aired by SimaNews as part of a wider report to showcase the latest achievements by the Islamic Revolution Guards Corps' (IRGC) Aerospace Division. The report, which purports to show near-complete UAVs on the line, shows there to be two distinct variants in build.

Of the 13 UAVs on the line, two appear to be near-clones of the RQ-170, featuring the distinctive frontal grilled air intake mounted on the upper body for the single jet engine. The remaining 11 UAVs appear to be more derivative, with only a much smaller air intake visible, suggesting a piston engine/turboprop



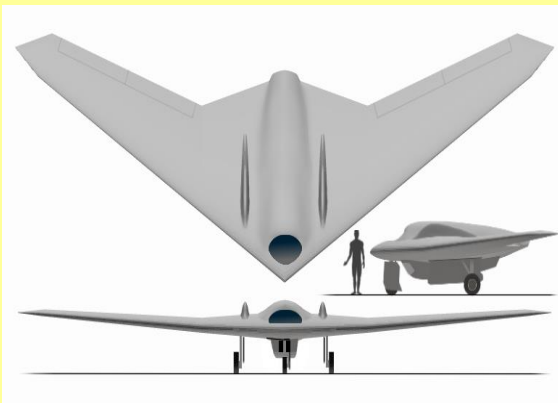
powerplant rather than a jet.

One of the two types appears to be a near-clone of the captured RQ-170 Sentinel, featuring a distinctive frontal grilled air intake mounted on the upper body for the single jet engine. (SimaNews/YouTube)





The US-built RQ-170 features a windowed under-fuselage imaging payload, and a similar aperture fitted to an Iranian copy is briefly shown in the footage (the captured RQ-170 was believed to have 'pancaked' into the ground, largely destroying the payload. As such, it is doubtful that the IRGC has been able to fully reproduce the payload in the same way that it has the aircraft itself). As seen in the footage, the secondary type UAV appears to be equipped instead to carry four under fuselage air-to-surface missiles in place of the imaging payload.



The original RQ-170

According to SimaNews, the UAV type shown on the production line has been named **Saeqeh (Thunderbolt)** by the IRGC. As the news report only referenced one UAV type having been derived from the RQ-170, it is unclear if this moniker refers to the near-clone surveillance platform, to the derived missile carrier, or to both. Neither is it clear whether both types will enter operational service, or if the near-clone has served as a testbed for the missile carrier.

## Japan: Hospital supply contamination – IV bags

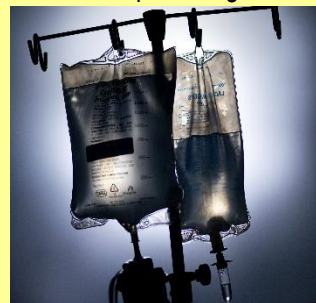
Source: [https://www.japantoday.com/category/crime/view/2nd-patient-at-yokohama-hospital-possibly-killed-by-poisoning?utm\\_campaign=jt\\_newsletter&utm\\_medium=email&utm\\_source=jt\\_newsletter](https://www.japantoday.com/category/crime/view/2nd-patient-at-yokohama-hospital-possibly-killed-by-poisoning?utm_campaign=jt_newsletter&utm_medium=email&utm_source=jt_newsletter) 2016-09-27 PM

Sep 27 – A surfactant compound that police believe was used to kill 2 elderly male patients at a hospital in Yokohama may have been injected into intravenous drip bags through holes made in their rubber plugs, investigative sources said Tuesday [27 Sep 2016].



Police found small holes in seals on the rubber plugs of multiple unused drip bags stored at a nurses' station at Oguchi Hospital in Yokohama's Kanagawa Ward, the sources said.

The police suspect the latest finding could indicate serial murders targeting unspecified patients. SN and NY, both 88, died of poisoning in the hospital on 18 and 20 Sep 2016, respectively, after medical drips were administered.



There were no apparent holes or ruptures in medical drip bags attached to NY, in whose body a surfactant compound was found in an autopsy, the sources said.

Hospital officials brought all of the drip bags that were to be used during a 3-day weekend ending 19 Sep 2016 to the nurses' station on the 4th floor on the morning of 17 Sep 2016, according to the investigative sources.



In the wake of NY's death, the police checked around 50 drip bags that had not been used and discovered holes in seals on the rubber plugs of some of the bags, the sources said.

NY died on 18 Sep 2016 after a nurse found his heart rate was falling around 4:50 p.m. that day, according to the police. He was hospitalized on 13 Sep 2016.

The hospital initially concluded he died of illness. But the police decided to conduct an autopsy on his body after NY was found to have died of poisoning last week. The 2 patients had been confined to their beds and medical drips including a nutrition supplement had been administered.

The police are examining the inside of some of the drip bags attached to SN, although no holes were found, according to the sources.

The police have detected a surfactant compound in one of the drip bags attached to NY that is of the same composition as that contained in disinfectant stored at the nurses' station on the 4th floor.

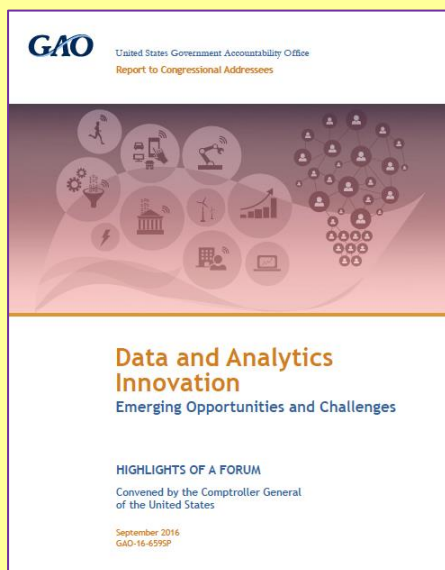
**Communicated by: Karyn Bishoff** [klb72@cornell.edu]

*[To find this many holes in the rubber stopper of the bags looks very deliberate. The next question is who had access to the closet of cleaning supplies as well as access to the patient IV fluids?*

*The article does not tell us what kind of surfactant was found. Surfactant has a very broad definition. Surfactants are compounds capable of lowering the surface tension between liquids or between a liquid and a solid. Surfactants may act as detergents, wetting agents, emulsifiers, foaming agents, and dispersants. Soap can function as a surfactant. There are so many compounds or combinations of compounds in a cleaning closet that it would be impossible to speculate on which one or ones could have been added to a bag of fluids. We hope a full investigation will provide illumination into what the surfactant was as well as catching the perpetrator.]*

## GAO Gives Congress Emerging Tech Handbook

Source: <http://opensources.info/gao-gives-congress-emerging-tech-handbook/>



The federal government's watchdog is keeping its eyes on emerging technologies.

In late September 2016, the [Government Accountability Office released a lengthy report](#) on opportunities and challenges the government is likely to face in the data and analytics innovation explosion.

The report is based off a January forum of industry, government, academic and nonprofit experts exploring current and future implications of emerging technologies for government. They dove into big data, analytics, artificial intelligence and the internet of things.

At approximately 100 pages, it's an exhaustive look at everything from how algorithms and automated traffic light signals affect traffic flow to the potential global economic impact of open data and connected sensors might have. (Head's up: GAO's conservative estimate suggests open data could add \$3.2 trillion to annual economic growth;

connected sensors could add \$2.7 trillion).

Unlike most investigatory GAO reports requested by Congress, this one doesn't conclude with recommendations.

Rather, it's likely to serve as a baseline for future work GAO conducts on emerging tech as well as an initial rubric for how Congress and its various committees oversee a rapidly changing federal technology landscape.





As GAO Chief Scientist Timothy Persons said Tuesday at an event hosted by *Government Executive* and *Nextgov*, “Policymakers care about jobs, and they care about innovation.” Now, they have a document that links them with regards to emerging tech.

## Turkey: Musul’a “Irak” değiliz

Source: <http://www.star.com.tr/politika/musula-irak-degiliz-haber-1147115/>



2016 Turkish “dreams”

**EDITOR’S COMMENT:** If you have such peaceful neighbors who needs enemies? But there are also other maps that might argue these demands:



or this one:







or this one (Byzantine Empire):



It is very easy to draw maps for internal consumption but VERY difficult to turn dreams into reality!

## Half of U.S. business R&D concentrated in five states

Source: <http://www.homelandsecuritynewswire.com/dr20161005-half-of-u-s-business-r-d-concentrated-in-five-states>

Oct 05 – Five states accounted for just over half of the \$255 billion of research and development (R&D) companies paid for and performed in the United States in 2013, according to a new [report](#) from the [National Center for Science and Engineering Statistics](#).

Business R&D is geographically concentrated in the United States to a greater degree than either gross domestic product (GDP) or population. The five states with the highest levels of

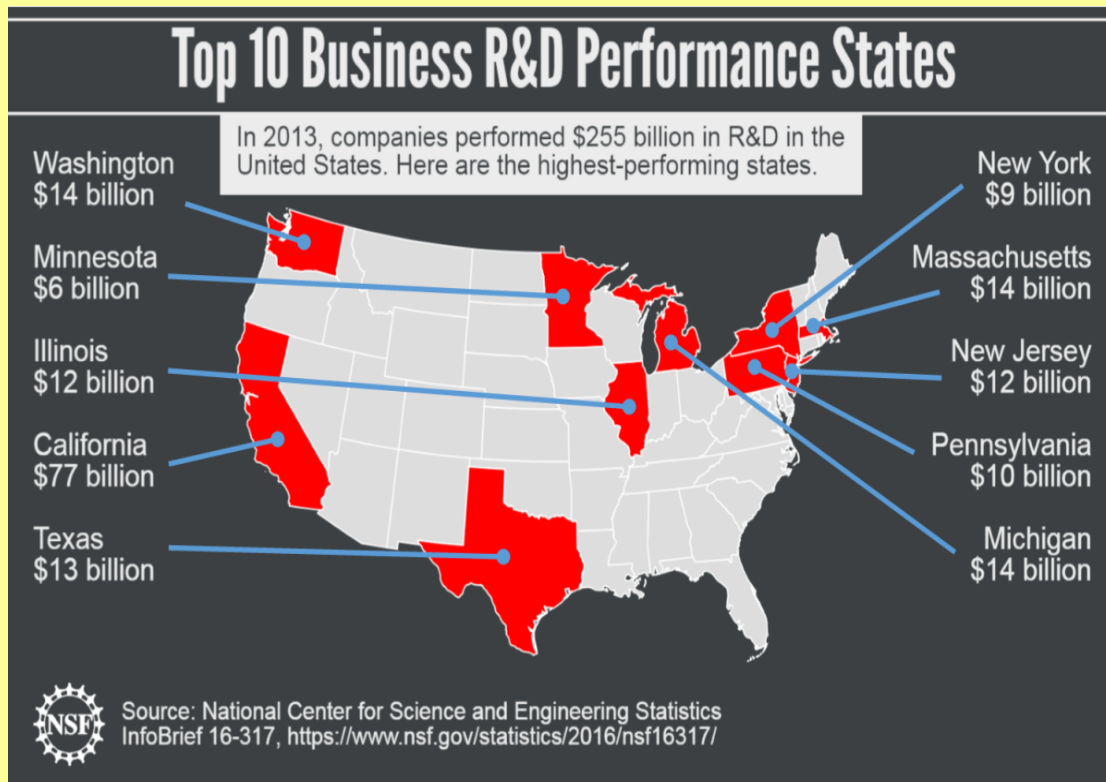


business R&D performance — California, Massachusetts, Michigan, Texas, and Washington — accounted for \$133 billion, or 52 percent, of the total.

California alone accounted for \$77 billion, or 30 percent, of self-funded business R&D — up from 25 percent five years ago. Between 2008 and 2013, California's R&D performance grew at a faster pace than its economy as a whole, resulting in its R&D intensity — its ratio of business R&D to GDP — increasing from 2.8 percent to 3.5 percent.

Texas and New York had R&D intensities substantially below that of the nation as a whole, reflecting their higher concentration of less-R&D-intensive industries: oil and gas extraction in Texas and financial services in New York.

The NSF notes that the top 10 states for R&D paid for and performed by U.S. companies are:



**In four of the top ten states, a single industry dominated business R&D.** For Michigan, that industry was automobile manufacturing, which accounts for 74 percent of its total. Software publishers accounted for 62 percent of Washington's total, and the pharmaceutical industry for 53 percent and 48 percent of New Jersey's and Pennsylvania's totals, respectively.

In addition to state data, the report also contained data on geographic areas with the largest amount of self-funded business R&D performance. The top three areas are:

- San Jose-San Francisco-Oakland
- Los Angeles-Long Beach
- Seattle-Tacoma-Olympia

The largest R&D industries represented in these areas vary. Computer and electronics manufacturing dominated the San Jose-San Francisco-Oakland area, while information technology and aerospace companies dominated the Seattle-Tacoma-Olympia area. For Los Angeles-Long Beach, no single industry accounted for a disproportionately large share of its R&D performance.

— Read more in Brandon Shackelford and Raymond Wolfe, *Five States Account for Half of U.S. Business R&D in 2013; New Data for Metropolitan Areas Available*, NSF 16-317 (NSF, 30 September 2016).



## Security facts about the border wall

By Robert Lee Maril

Source: <http://www.homelandsecuritynewswire.com/dr20161010-security-facts-about-the-border-wall>

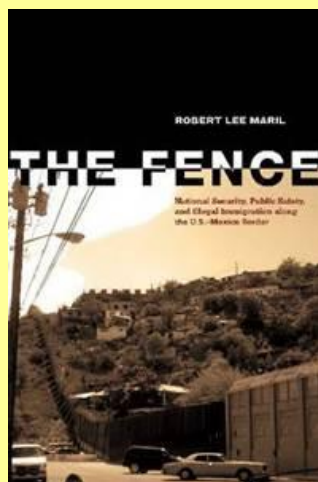
Oct 10 – During this 2016 election year there are at least five basic security facts about the wall between Mexico and the United States that every American should clearly understand before he or she considers the merits of the policy solutions offered by our political parties. Both those who live some distance from the border wall, as well as border travelers and residents, often are unaware of the security measures in place.

Moreover, security facts about the border wall are not always intuitive, based upon what passes for



common sense, or even easily available to the general public. In contrast, abundant myths and falsehoods, regardless of how often they are repeated, are rarely based upon documented evidence produced by serious researchers. Instead these assertions may be of part of election motives and agendas throughout the ballot from top to bottom.

**I began my first research on the U.S.-Mexico region shortly after moving to the border in 1976.** In 1999, with the permission of the Border Patrol, I began studying the work of agents as they patrol the line



by focusing upon the necessity of agents to make instant and high risk decisions that may have long-term consequences. I closely observed agents' interdiction procedures, the chances they took and, equally important, the impact of their actions upon those questioned, chased, arrested, or detained. I spent two years inside the Border Patrol, meticulously collecting these data.

**In 2004 I heard that a border wall — for some time named the border “fence” by CBP — was going soon to be constructed.** From 2004 until 2011 I documented, in a second book published by a university press ([\*The Fence: National Security, Public Safety, and Illegal Immigration along the U.S.-Mexico Border\*](#)) the legislation and the on the ground construction of the border wall between Brownsville, Texas, and San Diego. In this study, as with the first, I relied on extensive interviews with agents, an analysis of government documents including Congressional testimony, interviews with local, state, and national politicians, in addition to interviews with the private sector, border residents, and a variety of other individuals rarely heard. Among other topics, I examined the many challenges to building a “virtual” wall, the so-called Secure Border Initiative network (SBInet).





**The first thing to know is that there is already a border wall in place, that it is approximately 650 miles long, and that it was built at strategic sites from Brownsville, Texas, to San Diego, California.** Decisions on where to place the wall were, according to the Border Patrol, determined by a number of factors including the statistical frequency of illegal crossings, the accessibility to towns, cities, and public transportation systems, and topography. In many places along our Mexican border rugged mountains and deserts form a geographical barrier that is very difficult to penetrate. In these areas a concrete-and-steel wall is not necessary and, at the same time, may be next to impossible to build.

**Second, the completed concrete-and-steel border wall between our ports of entry is only one part of a much larger security system designed to make it very difficult to cross from Mexico into the United States.**

This border security system currently in place includes the 650 mile concrete and steel wall, a wall in some places as high as twenty-five feet. But there is much more to this security system than the border wall.

**Much of this security system is, in fact, invisible to those who visit our southern border or even to border residents.** It includes an elaborate array of secondary fences, vehicle barriers, night-time lighting, ground sensors, sophisticated surveillance cameras, tethered balloons, horse patrols, CBP patrols in a variety of specialized all-terrain vehicles, drones, helicopters, planes, fixed surveillance and communication towers, intelligence facilities, and a number of other classified security surveillance systems. Moreover, new and improved surveillance technologies are planned, including relevant CBP data intelligence collection. CBP is just one of the agencies under the umbrella of the Department of Homeland gathering and analyzing data on transnational organized crime (TOC).

**Third, the number of agents in the field has dramatically increased since prior to 9/11.** It is no longer the case, as it once was, that an individual agent is left alone to monitor his or her section of the border. Now there are two agents instead of one; additionally large numbers of agents may be temporarily shifted to

problematic border sectors as circumstances require.

This entire security system of concrete and electronic barriers supported by the CBP, the largest federal law enforcement agency in our country, legally extends 100 miles into the interior of the United States. As such, it includes both fixed and portable Border Patrol checkpoints.

It is very important to remember that the border wall itself was always intended to be just one component of this much larger and complex security system designed to protect our southern border. While any one component may possibly be evaded, a redundant security system is far superior to a reliance on a single component. Even if that component, for instance a huge wall, at first may sound imposing and almost impossible to circumscribe. It isn't.

**Fourth, building a wall 40 to 50 feet in height or taller, even if engineers thought it was feasible and could be shown to be cost effective will not, as suggested, keep those motivated to enter this country from accomplishing their objective.** For example, those with unlimited resources like the TOC can usually evade one or more of the components of our border security system. In the case of a static wall, regardless of its height and heft, tunnels can be dug under it, drones carrying drugs can fly over it, and other locations along our extensive northern border and expansive coastlines can be quickly turned into points of illegal entry. With virtually unlimited capital, the drug cartels are constantly trying to develop innovative to avoid interdiction.

**Exceptionally fit individuals such as those seen on Youtube can climb over our existing border wall in a matter of seconds.** But climbing over the existing border wall is more a stunt than a demonstration of how easy it is to gain permanent entry into our country. Just think about the extensive security system these same individuals must overcome in order to reach a major American city. Think about the 100 mile security zone in place. That's why the next decision most of these border wall climbers make is very reasonable...they immediately climb back into Mexico before they are apprehended.



Fifth, CBP leadership repeatedly has stated that, with the exception of perhaps adding a limited number of additional agents, the present border wall and security system is working better and better each year. Remember, the majority of the estimated eleven million undocumented workers presently living in the United States who actually crossed the Mexican border to get here, did so *before* the present border wall and complex security system were in place. It is, in fact, much more difficult to cross our southern border than at anytime in our previous history.

There are certainly many other facts about the border wall and the border security system vital for all American voters to know about. Are our

border wall and security systems perfect? No. But they are constantly being tweaked and improved by the CBP and it is becoming much harder than it ever has been to enter this country illegally along our southern border.

These are five basic facts about our border wall and the security system of which it is a part. I urge all Americans to continue to learn more about our border wall and our entire border security system in this region. Regardless of who becomes our next president and what political party holds a majority vote in the House and the Senate as well as state legislatures, these facts about our border wall and border security matter, and will continue to matter, long after this election day.

*Robert Lee Maril, a professor of Sociology at East Carolina University, is the author of The Fence: National Security, Public Safety, and Illegal Immigration along the U.S.-Mexico Border.*

## Homophobic attacks rose 147 per cent after the Brexit vote

Source: <http://www.independent.co.uk/news/uk/home-news/brexit-hate-crime-hatred-homophobia-lgbt-147-per-cent-rise-double-attacks-on-gays-lesbians-a7352411.html>

Oct 10 – New figures suggest that the rise in hate crime seen after the EU referendum wasn't just confined to racism or Islamophobia.

**Homophobic attacks rose by 147 per cent in the three months following the Brexit vote**, according to figures compiled by an LGBT anti-violence charity.

Galop, which supports victims of homophobic attacks, said the number of hate crime incidents in the July, August and September following the June EU referendum vote was up 147 per cent on the corresponding three months of 2015.

**The figures add to concerns that the hatred seen after the Brexit vote – which led to an immediate 57 per cent rise in hate crime incidents reported to the police – was not restricted to racial or religious hostility.**

When *The Independent* examined the scale of “post-referendum racism” in July, it also found signs that some racists seemed intent on extending their attacks to the LGBT community. Incidents collected by the social media sites PostRefRacism, Worrying Signs and iStreetWatch included a crowd walking down Drury Lane, London, two days after the referendum result was announced, chanting: “First we’ll get the Poles out, then the gays!”

The actress Juliet Stevenson reported a Romanian lesbian being attacked in Oxford and suggested the incident showed “Strains of 1930s Germany”.

The broad range of groups being targeted after the Brexit vote was also revealed by the fact that while 51 per cent of abusers specifically mentioned the referendum, the most commonly targeted ethnic group was in fact people of South Asian, rather than European origin.

The statistics compiled by Galop appear to suggest that LGBT people also became the targets of a minority who felt emboldened by the referendum result to express their long simmering hatred because – in one researcher’s words – it “made them think everyone agrees with them now”.

Galop’s detection of a post-referendum spike in anti-LGBT hate incidents was revealed as the charity published its 2016 *Hate Crime Report*, which highlighted how experiencing hatred “remained a significant part of LGBT people’s lives”.



The report found that four out of five (80 per cent) of the 467 of the LGBT people surveyed by the charity had experienced hate crime in their lifetime, and one in four (25 per cent) had been physically assaulted. The report also noted that when it came to the last hate crime the respondents had experienced, half of those who reported it to the police felt dissatisfied with the outcome.

"This compares poorly with other types of crime," said the report's authors.

A quarter of the respondents said that in future they would probably not report any hate crime they experienced, with 44 per cent of them explaining they felt they would not be taken seriously. One bisexual man told the researchers: "Imagine if in a year's time I get beaten up again – do you think they would believe me if I report it?"

"I don't think so. I don't think they would go after [the perpetrators], I don't think anything would happen." Nik Noone, Galop's chief executive, told *The Guardian*: "UK responses to hate crime are among the best in the world but our hate crime laws are far from perfect. The highest prison sentence a court can give for homophobic, transphobic or disability common assault is six months. That is just a quarter of the two-year maximum for race and faith common assault. This disparity needs redress."

A Government spokesman said: "In a Britain that works for everyone, hatred against a person because of their sexual orientation will not be tolerated. We welcome Galop's recognition that UK hate crime laws are among the best in the world, but there is more to be done – and the Government's hate crime action plan, published in July, included measures to encourage prosecutors to pursue tougher sentences for all hate crimes, including those targeting the LGBT community."

**EDITOR'S COMMENT:** If this article made clear the connection between Brexit and hate/LGBT crimes pls let me know – because I really cannot figure it out how being a member of a union suppresses homophobic feelings and actions. Unless this was not the main topic in the poll but to spread the message that they are here and are getting stronger via induced sympathy.

## Tourism chiefs want special police units in Paris hot spots

Source: <https://www.thelocal.fr/20161005/calls-for-special-police-unit-for-tourists-in-paris>

Oct 05 – Some of the top dogs in the Paris tourism industry have called on police to step up their game in an effort to attract tourists back to France.

The Alliance 46.2 firm, which represents groups that rely on income from tourists, wrote an open letter on Tuesday calling for more police support at tourist zones in Paris. Specifically, the group wants a special police force in the capital that would fight criminals who target tourists.



**This comes after the robbery of US megastar Kim Kardashian, who lost €9 million in jewels to thieves in Paris over the weekend.**



The tourist group called for a "specific organization in Paris and its suburbs that would allow police to keep an eye on the petty criminals who poison the lives of tourists," it said.

And it's not just the wealthy tourists who are picked on, with the group noting that Chinese tourists who typically carry around a lot of cash have been targeted by thieves in recent times too.

It's presumed that the group expects an increased police presence would also help to allay tourists' fears given the terror attacks that have rocked Paris and Nice in the last year, leaving hundreds dead.

The group added that such a move shouldn't be considered "out of the ordinary" given that there

are 66 million people living in France but 84 million tourists each year.

And the group warned that now was the time to act, predicting a 5-percent drop in tourist figures in 2017 and the potential loss of 30,000 jobs with it.





## Europe's "Good Terrorists": Because They Might Destroy Israel?

Source: <https://www.gatestoneinstitute.org/9065/europe-good-terrorists>

Oct 12 – Once again, the Europeans seem to be in Alice's Wonderland when they consider Palestinian affairs in particular and the Middle East in general. The renewed attempt by the European Union to remove the Palestinian Islamist movement Hamas from its terrorism list is a case in point.

Recently, an advisor to the European Court of Justice (ECJ) [recommended that Hamas be removed](#) from the EU's terrorism blacklist. In 2014, the EU's second-highest court ruled that Hamas should be taken off the list on "technical" grounds. It argued that Hamas's listing was not based on evidence, but on "factual imputations derived from the press and the internet."

However, the European Council then appealed this judgement, arguing that Hamas should remain on the terrorism blacklist, citing a 2001 decision by the UK and the US that designated both Hamas and the Tamil Tigers as terrorist groups. But the recent opinion by the ECJ advisor dismisses this argument. "The council cannot rely on facts and evidence found in press articles and information from the internet," Advocate General Eleanor Sharpton said. She explained that the council could not rely on terrorist listings by countries (the UK and US) outside the EU.

This latest highly dangerous European attempt to strike Hamas from the terrorism blacklist will, as the EU knows perfectly well, only serve further to embolden the Islamist movement to replace Israel with an Islamic empire.

Removing Hamas from the terrorism list would obviously be seen as a severe blow to Hamas's rivals in the Western-backed and funded Palestinian Authority (PA), and to the efforts to revive any peace process between the Palestinians and Israel.

As this is not the EU's first attempt to do this, it is hard not to conclude what many Palestinians have suspected all along: that the EU and its affiliates do not care if the Palestinians and others in the area are overrun by Hamas terrorists and are forced to live under the rule of despotic Islamist militants. The recent opinion by the European court advisor lightheartedly ignores Hamas's own statements concerning its true intentions and continued preparations for war against Israel. It is hard not to conclude that this is what the EU secretly wants -- perhaps for Muslim voters, who [brought to power](#) France's President François Hollande, perhaps in the hope of buying off terrorists so that they avoid further attacks in Europe, perhaps to continue good business deals with Arab and Muslim countries, and, of course, perhaps all of the above.

It came as no surprise, therefore, that Hamas was quick to "welcome" the opinion of the European Court advisor to whitewash and legitimize the Islamist terror movement. "Hamas considers the recommendation a first step towards removing the sin committed by the European Union towards the Palestinian people when it demonstrated bias in favor of Israel by placing Hamas on the terrorism list," [said](#) Hamas spokesman Sami Abu Zuhri, who welcomed the opinion and called on the Europeans to abide by it. Hamas, he added, has always been keen on openness towards the West and on building strong humanitarian and political relations with it. Israel is the only enemy of Hamas, Abu Zuhri stressed.

In other words, Abu Zuhri would like the Europeans to understand that they need not worry about terrorism by the Islamist movement because the attacks will be directed only against Israel. Hamas wants "openness" and "strong" ties with the Europeans because it believes that this will advance its goal of implementing its charter, which calls for the elimination of Israel. This is how Hamas understands the renewed bid to have it removed from the EU's terrorism blacklist. And it is improbable that the EU, which for decades has sought "good relations" between the two sides of the Mediterranean, does not understand it that way, too.

Even more improbable is that some Europeans believe that Hamas should not be on the terrorism only on the basis of press articles and information on the internet -- as if what is being said about Hamas and its goals are rumors or unsubstantiated charges that need to be verified, and for which there is no basis.

What of [Hamas's own charter](#), which calls for Jihad (holy war) against Israel. "There is no solution to the Palestinian problem except by Jihad," the charter states. It goes on to say that the "liberation of that land (Palestine) is an individual duty binding on all Muslims everywhere.



In order to face the usurpation of Palestine by the Jews, we have no escape from raising the banner of Jihad...We must spread the spirit of Jihad among the (Islamic) Umma, clash with the enemies and join the ranks of the Jihad fighters. The Islamic Resistance Movement believes that the land of Palestine has been an Islamic Wakf throughout the generations and until the Day of Resurrection, no one can renounce it or part of it, or abandon it or part of it."

Okay, one might argue, so the Europeans will not take seriously the Hamas covenant. Yet what does the ECJ make of the incessant rhetoric of Hamas?

Here is what Fathi Hammad, a senior Hamas official in the Gaza Strip, [had to say](#) after the recommendation: "Resistance is the only way to liberate Palestine from the [Mediterranean] sea to the [Jordan] river." Praising the recent wave of Palestinian knife and car-ramming attacks on Israelis, Hammad called on Palestinians to rise against any peace process with Israel. "The path of negotiations has dissipated the Palestinian cause," he added.

In a [statement](#) marking the first anniversary of the anti-Israel attacks, which is being referred to by many Palestinians as the "Jerusalem Intifada," Hamas said this week that the wave of terrorism will not stop "until the occupation is driven out of Jerusalem, the West Bank and all Palestine." Reiterating its refusal to recognize the "Zionist Entity's" right to exist, Hamas said that the Palestinians maintain the right to "resistance in all its forms."

Let us translate that for a moment: When Hamas talks about "resistance in all its forms," it is referring to killing Jews with suicide bombings, rockets, knives and vehicles. As far as Hamas is concerned, Palestinians are entitled to use all these methods to kill as many Jews as possible and drive them out, to "liberate all of Palestine." Notably, this statement was issued *after*, not before, the recent recommendation by the European court advisor to remove Hamas from the terrorism list. This is far from simply another "press article" or "rumor" published on the internet; this is an official statement released by the Hamas leadership.

To its credit, and despite the clearly genocidal ECJ recommendation, Hamas has been utterly transparent concerning its intentions. In fact, Hamas has never hidden its desire to destroy Israel and prevent any peace process between Palestinians and Israelis. This position and strategy has not changed since the establishment of the Islamist movement nearly thirty years ago. And if the officials of the EU and the ECJ do not know that, they should be replaced.

Further evidence of Hamas's intentions and policies was provided by another leader of the movement, Mahmoud Zahar, who assured supporters in the Gaza Strip last week that Hamas will never recognize Israel's right to exist. "We will not give up one inch of the land of Palestine to the Israeli entity," [Zahar declared](#). He then praised Palestinians for using "stones and knives" to attack Jews.

These are only some of the recent statements by Hamas leaders and spokesmen that leave no room for doubt as to the movement's intentions to continue using terrorism as a means to destroy Israel. Perhaps EU officials might go to the numerous Hamas websites and read what is being said there by the movement's leaders. The words speak for themselves.

Hamas's threats do not stop at rhetoric. Hamas's current actions also attest to its goals. Hamas and other terror groups openly continue to dig tunnels that will be used to attack Israel.

Only days after the ECJ recommendation was published, another Palestinian was [killed](#) while working in a tunnel. He was identified as 30-year-old Ahmed As'ad. Other men were wounded in the incident, in a tunnel that was supposed to serve Hamas and other terrorist groups to attack Israel.

Meanwhile, last week, in the context of these preparations, the terror group Al-Naser Salah Eddin Brigades [unveiled](#) a new rocket called Koka 70 (named after one of its leaders, Abu Yusef Koka).

The European recommendation to remove Hamas from the terrorism blacklist comes at a time when Hamas and other groups are not only talking about attacks, but also actively preparing to launch new rockets and infiltrate Israel via attack tunnels. These are not unverified press reports, but facts -- facts that fly in the face of the European whitewashing and legitimizing of this terrorist group.

The ECJ is sending the message to Hamas that the Europeans see no problem with Hamas's desire to destroy Israel and continue to launch terrorist attacks against Jews. This message also undermines those Palestinians who still believe in a peace with Israel. Moreover, the recommendation comes at a time when countries such as Egypt, Jordan, the United Arab



Emirates and even Saudi Arabia, as well as the Palestinian Authority, are doing their utmost to weaken Hamas.



Those who embolden Hamas also strengthen ISIS, Islamic Jihad and the Muslim Brotherhood, not only in the Middle East, but also in Europe. Appeasing terrorists is a dangerous game: it has already backfired on its foolhardy players and will continue to do so, not less, but more. This is exactly how Muslims conquered Iran, Turkey, North Africa, the Crimea and much of Europe including Hungary, Greece, Poland, Romania, and the Balkans -- countries that still recall a real "occupation," an Islamist one, all too well, and

abundantly want none of it.

**The EU and the ECJ need to be stopped before they do any more harm to Palestinians, Christians and Jews -- or to Europe.**

## The Tower – UAE (the biggest building in the world)

Source: <http://www.thenational.ae/uae/dubai/sheikh-mohammed-bin-rashid-lays-foundation-stone-for-the-tower---video>



The Tower at Dubai Creek Harbour will be a structure that will define Expo 2020 as the Eiffel Tower defined Paris for its 1889 World Fair. Once completed, Emaar Properties' Dubai Creek Harbour tower project, known simply as 'The Tower' (1100M), will be **100 metres** taller than the Burj Khalifa.

## Famed Chinese Terracotta Warriors could have been made with the help of the Greeks, archaeologists reveal

Source: <http://www.telegraph.co.uk/news/2016/10/12/famed-chinese-terracotta-warriors-could-have-been-made-with-the/>

Oct 12 – Western explorers settled in China more than 1,500 years earlier than experts had believed, new research has revealed, after archaeologists found the famous Terracotta Warriors could have been made with the help of the Greeks.







The [8,000 statues, which guard the mausoleum of the First Emperor](#), are likely to have been made under the guidance of a European sculptor who worked with locals at the site and took influence from Ancient Greece.

An extensive study of sites in Xinjiang Province, China, have



revealed European-specific mitochondrial DNA, suggesting Westerners travelled, settled and died there before and during the time of the First Emperor: 1,500 years earlier than currently accepted.

The discoveries have been hailed as "more important than anything in the last 40 years" surpassing even [the discovery of the Terracotta Army itself in significance](#). They are thought to be the first documented contact between Western and Chinese civilizations ever recorded.

They came about during excavations across the site by Mausoleum archaeologists, which have now been documented for television by the National Geographic Channel and BBC.

Key findings include evidence that treasures in the tomb of the First Emperor were created with the help of the West, with inspiration from the statues of Ancient Greece.

The tomb complex itself was found to be "much bigger than first thought" - at 38 square miles, 200 times bigger than Egypt's Valley of the Kings - with two roads out of it identified with drone technology.

Experts are particularly excited by the discovery of DNA



suggesting Westerners lived in the area during the time of Qin Shi Huang, from 259 to 210 BC.

Dr Li Xiuzhen, Senior Archaeologist at the Emperor Qin Shihuang's Mausoleum Site Museum, said: "We now have evidence that close contact existed between the First Emperor's China and the West before the formal opening of the Silk Road. This is far earlier than we formerly thought."



Evidence of that contact, experts believe, can be found in the style of the Terracotta Warriors, with "no tradition of building life-sized human statues" identified in China before then.

Prof Lukas Nickel, chair of Asian Art History at the University of Vienna, believes the tomb of the First Emperor was influenced by the arrival of Greek statues in Central Asia in the century following Alexander the Great.

"I imagine that a Greek sculptor may have been at the site to train the locals," he said.

Dr Xiuzhen added: "We now think the Terracotta Army, the Acrobats and the bronze sculptures found on site have been inspired by ancient Greek sculptures and art".

Prof Zhang Weixing, lead archaeologist at the tomb site, said: "The archaeological work undertaken here recently is more important than anything in the last 40 years.

"By systematically examining the First Emperor's main tomb and subsidiary burials we have discovered something more important even than the Terracotta Army."

Other findings from the site include the mutilated bones of young women, believed to be high ranking concubines, buried with precious jewellery made from pearls and gold.

The skull of a young man, believed to be Prince Fu Su, the First Emperor's eldest son, was also found with a crossbow bolt embedded in it.

The full findings will be broadcast on the National Geographic Channel in the US, and one BBC Two this Sunday.

Rachel Morgan, commissioning editor for the BBC, said: "It is thrilling to think that these discoveries, using cutting technologies and the forensic techniques of the 21st century, have the potential to alter what we know about the origin and formation of one of the world's most powerful countries today and the relationships forged between ancient civilizations."

Dan Snow, who presents the show, said: "It is extraordinary to think that history as we know it is changeable."



## **President Hollande has admitted 'France has a problem with Islam' and warned that the country's national symbol will one day be a woman in a burka**

Source: <http://www.dailymail.co.uk/news/article-3834003/President-Hollande-admitted-France-problem-Islam-warned-country-s-national-symbol-one-day-woman-burka.html>



Oct 12 – French president Francois Hollande has admitted the country 'has a problem with Islam' and warned France's national symbol will one day be a woman in a burka.





Hollande also branded ethnic minority football stars as 'guys from the estates, without references, without values, who leave France too early', it emerged today.

The words were all part of a more general attack on people from Muslim backgrounds whom the Socialist Mr Hollande views as a major difficulty for his country.

### Libya during the Muamar Gaddafi era ...





## Very few at the beginning; when getting stronger, demands follows



## Drones will be crashed into passenger jets in mid-air to **test safety** after string of near misses near airports

Source: <http://www.dailymail.co.uk/news/article-3842316/Drones-crashed-passenger-jets-mid-air-test-safety-string-near-misses-near-airports.html>

Oct 17 – **Drones will be deliberately smashed into passenger jets as part of a radical testing programme triggered by fears of a catastrophe in British skies.**

Ministers ordered the tests after a series of near misses, some near major airports.

**They have committed more than £250,000 to pay for a private study of what would happen if a drone struck a window or the fuselage of a plane.**



Pilots warn it is only a matter of time before there is a collision and at one stage a close call was being reported every week. Just this week (October 10), police launched an inquiry after two sightings of a drone being flown recklessly close to Heathrow Airport.

Senior officers branded the move 'dangerous and illegal' but despite an intensive search were unable to identify the culprit.

The secretive tests were ordered by the Department for Transport, in conjunction with the Civil Aviation Authority (CAA) and the Ministry of Defence.

**They are being carried out by Qinetiq, whose experts have the run of 5,000 square miles of restricted airspace in Snowdonia, Wales.**

The move is in response to growing concerns from pilots that drones, which contain heavy lithium batteries, could pierce a plane windscreen.



It comes as the Department for Transport prepares to finally publish a long-awaited consultation on the future of drones.

The number in the skies has spiralled in recent years amid a growing clamour for their use in industry as well as leisure and photography.

## What is racism?

Source: Greek blog



- 1) Racism is to wait in line at the office of the Working Force Employment Organization (OAED) expecting to be given 360 euros while the Pakistani in front of you will get 580€.
- 2) Racism is to pay the hospital for admission and examinations, and support a shattered public health system, while illegal immigrants are hospitalized for free.
- 3) Racism is admitting the illegal immigrants' children into public kindergartens for free the moment that your kids have not been accepted.
- 4) Racism is when Greeks cannot walk safely outside after 11:00 at night (at least into major cities).
- 5) Racism is to have Greeks fortifying their houses with railings and iron bars, as if they are living in high-security prisons.
- 6) Racism is to withstand illegal immigrants committing rape or murder for 10 euros.
- 7) Racism is when a small country has 2,500,000 unemployed, 600,000 young scientists in exile and 4,000,000 illegal immigrants.
- 8) Racism is when the freelancer worker is paying in advance 12 months fees at his/her Greek Fund for Craftsmen and Small Enterprises (TEBE) in order to issue a "health card" when an illegal immigrant with just two months' stamps have a health card for all members of his family and spend the other 10 months working in black market without paying any taxes.
- 9) Racism is when a Greek shopkeeper pays the rent, electricity, water, telephone charges, VAT, taxes, TEBE and the illegal immigrant with his rug full of goodies outside his shop, pays nothing!
- 10) Racism is protesting in favor of Muslim cemeteries when Greeks commit suicide due to financial despair.
- 11) Racism is not to complain about the uncontrolled invasion of thousands of illegal immigrants each day in your country, who are not qualified, they are given shelter and food while you are hungry, unemployed on the street without any help from anywhere.
- 12) Racism is when among the 153,000 OAED's unemployment allowance beneficiaries, only 20,000 are Greeks!
- 13) Racism is when you have postgraduate diplomas and qualifications but the ruling party prefers its own people often without any university degree.
- 14) Racism is when you pay for the ticket in means of public transportation, while for the Pakistani is free.
- 15) Racism is calling the other racist and fascist, because you could never find a word that describes the love for your country you never felt as your own.

## Muslim woman becomes first ever student to be allowed to wear a hijab beneath her uniform at America's oldest private military college

Source: <http://www.dailymail.co.uk/news/article-3841064/Muslim-woman-settles-Vermont-military-college.html>

Oct 16 – Sana Hamze doesn't see herself as a pioneer, though she has just broken a barrier at the nation's oldest private military college, Norwich University.





Hamze, 18, is the first woman allowed to wear a Muslim headscarf beneath her military uniform at the Vermont institution.



What Albert Einstein commented on stupidity and universe?

Her lifelong dream is to continue her family's legacy of military and public service while staying true to her devout religious beliefs. Hamze asked for a uniform accommodation to wear the hijab when she was applying to colleges earlier this year, which The Citadel denied. **Norwich, one of the nation's six senior military colleges**, agreed to make the accommodation.

Hamze's great-grandmother was in the Air Force and two of her grandparents met while serving in the Navy in Puerto Rico.

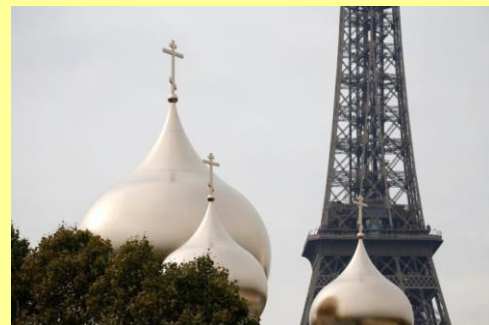
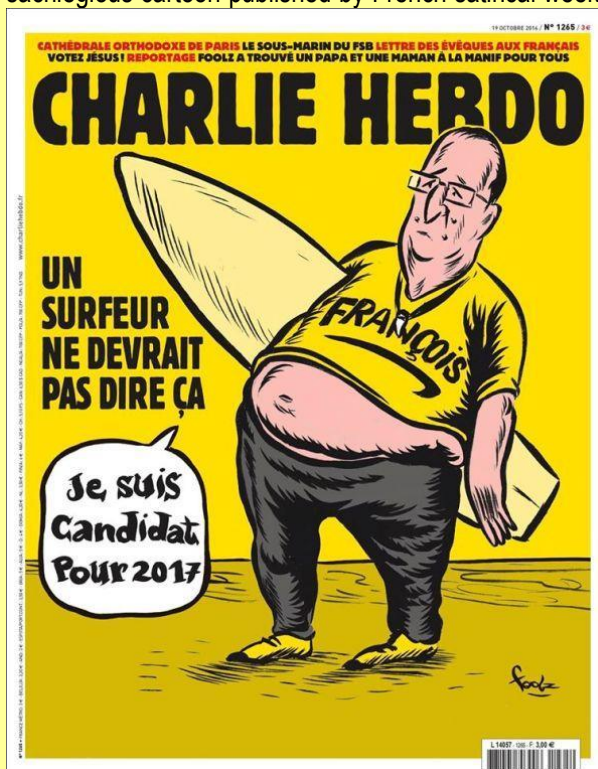


## Charlie Hebdo made fun of Russian history: the state Duma outraged

Source; <http://en.israel-today.ru/charlie-hebdo-made-fun-of-russian-history-the-state-duma-outraged.html>

Oct 20 – The head of the state Duma Committee on science and education Vyacheslav Nikonov called sacrilegious cartoon published by French satirical weekly Charlie Hebdo in connection with the opening in Paris of the Russian Orthodox spiritual-cultural center.

About it writes on Thursday, October 20, the news Agency TASS.



«The Orthodox Cathedral in Paris» is written on the cover of the latest issue of the magazine, which published an article containing a brief history of Orthodoxy in Russia in the twentieth and early twenty-first century, and a description of events preceding the opening of the temple, contained in the traditional editions mocking manner. The cartoon to the article, depicting the Cathedral,

the domes of which is painted pouty face, did the artist RISS.

**CATHÉDRALE ORTHODOXE DE PARIS LE SOUS-MARIN DU FSB LETTRE DES EVÊQUES AUX FRANÇAIS VOTEZ JÉSUS! REPORTAGE FOOLZ A TROUVÉ UN PAPA ET UNE MAMAN À LA MANIF POUR TOUS**

«What makes the magazine Charlie Hebdo, is called blasphemy. Using the absence of prohibitive norms in French law, the newspaper systematically offends the views of people





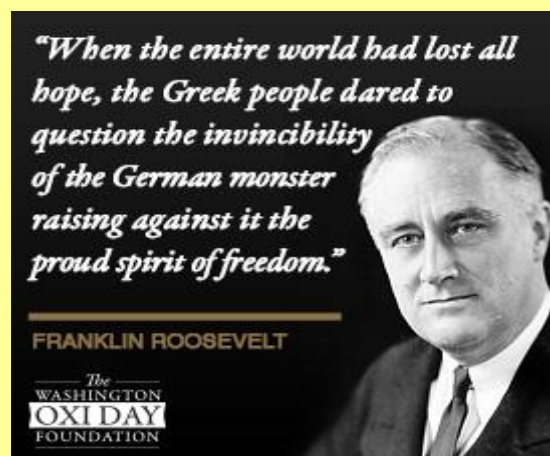
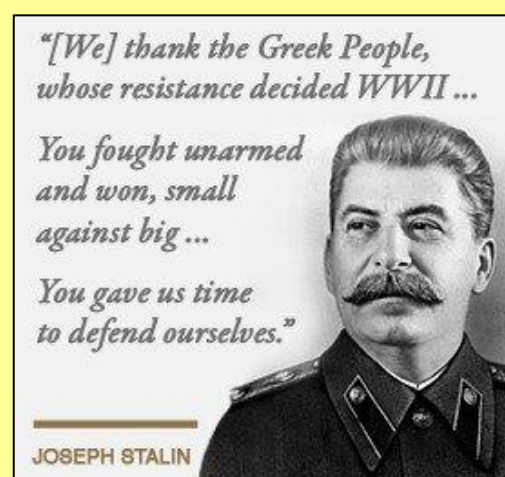
around the world, scoffing at important events or tragedies», leads edition of the words Nikonov said in an interview with reporters.

«In our law it would be regarded as insulting the feelings of believers, the publication would contravene the law. French law is not contrary to, the law permitted,» he added.

## Really Mr. Ambassador?

Despite this bitter centennial truth with historic, political and diplomatic background (1912-2016) dealing with relationships and conflicts of the Balkan countries (Albania, Serbia, Croatia, Bosnia, FYROM, Greece), the observation of the **US Ambassador Christopher Hill** on the Balkans' future (Albanians still gives hope that will solve their contested territorial disputes with their Slavic neighbors), given that according to the realistic political assessment of Christopher Hill: ***'The Balkans is an unfinished process. This is a difficult process, but above all in the Balkans left aside violence and wars. The region has challenges, but I think that the Balkans is an unfinished project and as such there is a need for more attention not only from the people of the region, but also from the US and EU. This is part of Europe, it cannot be left out of it, but should be included in it. More progress was made, but it is incomplete.'***

(Source: <http://newsblaze.com/thoughts/opinions/us-ambassador-christopher-hill-albania-doesnt-want-to-become-one-with-kosovo> 67250/ )





## ISIS may strike Europe with car bomb & chemical attacks, warns EU counter-terrorism chief

Source: <https://www.rt.com/news/360699-isis-eu-car-bombs-chemicals/>

Sep 26 – Acknowledging that the terrorist threat in the EU has reached its peak in the last two decades, the EU Counter-Terrorism Coordinator warned the bloc's lawmakers that Europe could face new ISIS-coordinated attacks, possibly even involving chemical weapons.

After a wave of bloody Islamic State (IS, formerly ISIS/ISIL) terrorist attacks shook Europe in the summer, especially in France and Germany, Gilles de Kerchove warned members of the EU Parliament's Civil Liberties Committee that because of *"multiplicity of the possible origins"* of attacks, terrorism threat across the EU remains *"very high."*

De Kerchove said that *"at least six reasons"* exist for keeping the alert level at its highest level in the last 20 years.

To begin with, a large number of well-trained suicide bombers and lone wolf actors *"that are directed or inspired"* by IS are present in Europe. The number of potential perpetrators is expanded further by *"persons with mental health problems or who try to emulate"* the perpetrators of the terrorist organization, the counter-terrorism chief warned.

He stressed the *"link between terrorism and crime,"* noting that many EU attackers had a *"criminal past."* Kerchove also confirmed that IS is *"using the flow of migrants to infiltrate fighters, by using forged documents."*

The intelligence boss warned that if ISIS faces further setbacks, more fighters from Syria and Iraq will flee to the EU, with some moving to Libya to continue their jihad.

*"How will we handle not hundreds but thousands of fighters who will either want to go to another hotspot – Libya is probably the most obvious one but there are many others where they can hide – or they may want to get back home?"* Kerchove said.

*"We will have to handle a high number and a diversity of profiles: the frontliners, people who have worked on the frontlines as fighters; people who have worked in the back office of the fight, but also wives of fighters and children. We know more than 500 children were born there,"* the chief said.

Another reason why terrorist threat grows in Europe is ISIS' mastery of online and social media propaganda channels which expands their recruitment drive. In his address to EU lawmakers, Kerchove said that the latest trend shows that fewer Europeans are going to Syria, but more Europeans get *"inspired"* to join the jihad on home soil.

Refugees also remain at risk of being radicalized, as *"Salafist organizations already trying to recruit in the refugee camps"* across Europe and particularly in Germany.

*"It is not a coincidence because they will want to compromise the refugees, as it may trigger the vicious circle of Islamophobia and radicalisation,"* Kerchove said.

Kerchove highlighted that jihadists are also adopting their attack tactics, seeking targets outside their typical scope of famous landmarks or state institutions. The terrorists are also adapting their strike capabilities using ready-made and easily available devices.

*"We fear that Daesh might step-by-step move to other modus operandi,"* Kerchove said. *"Car bombs might be one. We know how much they learn how to build vehicle-borne improvised explosive device. And there is a concern as well on the use of chemical weapons."*

## Insights on Deepwater Horizon disaster

Source: <http://www.homelandsecuritynewswire.com/dr20160926-insights-on-deepwater-horizon-disaster>

Sep 26 – The soon-to-be-released thriller *"Deepwater Horizon,"* which opens in theaters 30 September, promises moviegoers a chilling reenactment of one of history's worst oil rig disasters. One scholar of societal collapse will enter the theater with a big-picture view of the perfect storm of factors that led to the explosion and oil spill that killed eleven people and



sent more than 200 million gallons of crude oil spewing toward the nation's southern coastline for eighty-seven days.



The soon-to-be-released thriller “Deepwater Horizon,” which opens in theaters 30 September, promises moviegoers a chilling reenactment of one of history’s worst oil rig disasters. Utah State University professor Joseph Tainter will be among those waiting in line to see the new flick, which offers a heart-rending restaging of oil rig workers making split-second decisions and fighting for their lives during the 2010 Gulf of Mexico catastrophe.

Utah State University notes that like other fans, Tainter will be on the edge of his seat, but the renowned scholar of societal collapse will also enter the theater with a big-picture view of the perfect storm of factors that led to the explosion and oil spill that killed eleven people and sent more than 200 million gallons of crude oil spewing toward the nation’s southern coastline for eighty-seven days.

Tainter delved into the Deepwater Horizon disaster and, with colleague Tadeusz “Tad” Patzek of the University of Texas-Austin, published [Drilling Down: The Gulf Oil Debacle and Our Energy Dilemma](#) in 2011. The book details specific causes of the Deepwater calamity, explores society’s current energy

crisis, and calls for discussion on future energy solutions.



“It takes energy to find and produce energy and the world’s remaining, untapped petroleum reserves are in deep, dark, cold, remote and dangerous locations,” he says. “We need highly sophisticated technology and equipment to meet our energy demands.”

Oil has fueled an unprecedented standard of living in the United States and many parts of the world, but it will not last forever, says the historian and anthropologist whose 1988 book, [The Collapse of Complex Societies](#), remains a definitive work on societal collapse. As societies grow more complex through the bounty of cheap energy, Tainter says, they also confront problems that seem to increase in number and severity.

In the 1940s, when the U.S. petroleum industry hit its stride, the net cost to produce oil and gas was about 100 to one.





"It cost about one barrel of oil to produce 100 barrels of oil," Tainter says. "Today, that ratio is about 15 to one in the United States. Though it varies throughout the world and oil prices are currently depressed, the trend is clear. Energy is becoming very costly in terms of resources, safety and environmental health."

Alternative energy provides a possible solution, but is a challenge to implement, he says.

"We have some hurdles to clear with the infrastructure needed to make renewable energy a viable replacement for fossil fuels," Tainter says. "Alternatives such as biomass, solar and wind power require large land acquisitions and a distribution network that doesn't yet exist."

Looking into the past, we can see that cheap energy and increasing complexity have contributed to a mutually reinforcing spiral, he says. "We've become dependent on an energy source that can't sustain us indefinitely and we have to figure out what to do about it."

## Six people are poisoned in Tokyo subway

Source: <http://news.am/eng/news/348883.html>



Sep 28 – **Six people in Tokyo were hospitalized, after they had complained about malaise due to a strong smell in the subway train.** According to witnesses there

was a smell of solvent or, perhaps, any other chemical substance, in the metro, reports the BBC. The incident took place at Takadanobaba station at about 18: 00. Local television broadcasts footages from the scene. It was not yet clear, whether people in the metro became victims of chemical poisoning or not. The incident raised concerns of the local residents in Tokyo. They remember the chemical attack in the subway in Tokyo in 1995, organized by the followers of the AUM Shinrikyo radical

sect. About 6 thousand people were poisoned, 13 killed due to sarin spread in the metro.



## Carfentanil and Fentanyl Analogs as a Growing Threat

By Leah Roberts, MS

First synthesized in 1974 by chemists at Janssen Pharmaceutica, carfentanyl has about 10,000 times the potency of morphine and 100 times the potency of fentanyl. While fentanyl is used as anesthesia during surgeries, for preventing post-surgical pain, and for pain associated with terminal cancers, carfentanil is only used to tranquilize large animals in veterinary use (PubMed, 2016; Web MD, 2016; Journey Pure, 2016). For humans, as little as 1 microgram could cause drowsy effects and the drug can be absorbed through intact skin or eyes, inhaled, or ingested (CDC, 2016).

In August, 2016, Calgary police arrested a local man and intercepted his order of one kilogram of carfentanil that he acquired from a contact in China that was labeled as 'printer parts' on the customs form. Although the DEA regulates the manufacture in the US, only allowing 19 grams to be made per year for veterinary use, some quick internet searching reveals a number of companies based in China that advertise carfentanil for sale (Kilian, 2016). Reports of carfentanil adulterated drugs are accumulating as fast as the reports of overdoses by this drug across the US. The drug dealers obtaining carfentanil for adulterating cocaine and heroin are finding suppliers for it and it is likely a terrorist with malign intent could easily use the same suppliers.

Like fentanyl and some of its analogs, carfentanil can be released into the air as fine particles or in a liquid aerosol, used to contaminate foodstuffs and water (ice, bottled water, etc.) (CDC, 2016).

People exposed to carfentanyl may have symptoms of analgesia, sedation, respiratory depression, depressed cough reflex, miosis (constricted pupils) later on - dilated pupils, hypotension, bradycardia, and shock.



Decontamination should include removing contaminated clothing and washing with soap and water before getting medical attention. Responders should use PPE based on the threat level perceived and handle contaminated articles using PPE to protect their skin, eyes and respiratory system. Contaminated articles and clothing should be placed in a 6-mil polyethylene bag for disposal.

The antidote for carfentanil is Naloxone (Narcan) as is used for heroin overdoses, but the 0.4mg to 2.0mg dose may have to be repeated more than once to revive someone who did overdose with carfentanil (CDC, 2016; Kilian, 2016; Journey Pure, 2016).

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## Fentanyl = terrorism

Source: <http://www.castanet.net/news/World/177821/Fentanyl-terrorism>

Oct 07 – **For a few thousand dollars, Chinese companies offer to export a powerful chemical that has been killing unsuspecting drug users and is so lethal that it presents a potential terrorism threat,** an Associated Press investigation has found.

**The AP identified 12 Chinese businesses that said they would export the chemical — a synthetic opioid known as carfentanil — to the United States, Canada, the United Kingdom, France, Germany, Belgium and Australia for as little as \$2,750 a kilogram (2.2 pounds), no questions asked.**

Carfentanil burst into view this summer, the latest scourge in an epidemic of opioid abuse that has killed tens of thousands of people in the United States alone. Dealers have been cutting carfentanil and its weaker cousin, fentanyl, into heroin and other illicit drugs to boost profit margins.

**Despite the dangers, carfentanil is not a controlled substance in China,** where it is manufactured legally and sold openly online. The U.S. government is pressing China to blacklist carfentanil, but Beijing has yet to act,

leaving a substance whose lethal qualities have been compared with nerve gas to flow into foreign markets unabated.

"We can supply carfentanil ... for sure," a saleswoman from Jilin Tely Import and Export Co. wrote in broken English in a September email. "And it's one of our hot sales product."

Before being discovered by drug dealers, carfentanil and substances like it were viewed as chemical weapons. One of the most powerful opioids in circulation, carfentanil is so deadly that an amount smaller than a poppy seed can kill a person. Fentanyl is up to 50 times stronger than heroin; carfentanil is chemically similar, but 100 times stronger than fentanyl.

"It's a weapon," said Andrew Weber, assistant secretary of defence for nuclear, chemical and biological defence programs from 2009 to 2014. "Companies shouldn't be just sending it to anybody."

Carfentanil was first developed in the 1970s, and its only routine use is as an anesthetic for elephants and other large animals. Governments quickly targeted it as a potential



chemical weapon. Forms of fentanyl are suspected in at least one known assassination attempt, and were used by Russian forces against Chechen separatists who took hundreds of hostages at a Moscow theatre in 2002.

**The chemicals are banned from the battlefield under the Chemical Weapons Convention.**

In fiscal year 2014, U.S. authorities seized just 3.7 kilograms (8.1 pounds) of fentanyl. This fiscal year, through just mid-July, they have seized 134.1 kilograms (295 pounds), according to U.S. Customs and Border Protection data obtained by the AP. Fentanyl is the most frequently seized synthetic opioid, U.S. Customs reports.

Users are dying of accidental respiratory arrest, and overdose rates have soared.

The U.S., Russia, China, Israel, the Czech Republic, the United Kingdom and India are among the countries that have assessed carfentanil and related compounds for offensive or defensive applications, according to publicly available documents and academic studies.

"Countries that we are concerned about were interested in using it for offensive purposes," Weber said. "We are also concerned that groups like ISIS could order it commercially."

The U.S. began researching fentanyl as an incapacitating agent in the 1960s and, by the 1980s, government scientists were experimenting with aerosolized carfentanil on primates, according to Neil Davison, the author of "Non-Lethal Weapons" who now works at the International Committee of the Red Cross.

**The U.S. says it is no longer developing such chemical agents. But two state-owned companies in China have marketed "narcosis" dart guns,** according to Michael Crowley, author of "Chemical Control" and project co-ordinator at the University of Bradford's Non-Lethal Weapons Research Project. He said the ammunition "might very well be fentanyl or an analog of fentanyl," adding that in the 1990s, the U.S. explored similar guns loaded with a form of fentanyl.

## Where are the Terrorist WMD Attacks?

By Dr. Stephen Schwalbe

Source: <http://inhomelandsecurity.com/where-are-the-terrorist-wmd-attacks/>

President Obama has declared that [terrorist groups and weapons of mass destruction \(WMD\) remain the greatest threat to the United States](#). According to a Harvard Kennedy School Belfer Center white paper, President Obama stated, "If an organization like al-Qaeda got a weapon of mass destruction in its hands...just a few individuals could potentially kill tens of thousands of people, maybe hundreds of thousands."

The Department of State reported, "The nexus of weapons of [mass destruction and terrorism poses one of the gravest potential risks to the national security](#) of the United States and its global partners." Furthermore, it claims "The U.S. Government places the highest priority...to meet the global challenge of WMD terrorism."

President George W. Bush stated in a 2004 National Defense University speech: "The greatest threat before humanity today is the possibility of a secret and sudden attack with chemical, biological, radiological or nuclear weapons."

### Terrorism Experts Say that Terrorist Interest in Weapons of Mass Destruction Is Growing

**What do the experts on terrorism believe?** The **Central Intelligence Agency** has said for years that terrorist interest in WMD weapons is *growing*. When former Secretary of Defense Robert Gates was asked by the media what kept him up at night, Gates replied, "It's the thought of a terrorist ending up with a weapon of mass destruction, especially nuclear."

**Dr. Jessica Stern**, a terrorism expert and Boston University research professor, wrote that WMD "seem to be ideal for terrorists, who seek to inspire fear in a targeted audience."





### Why Has There Been No WMD Attack by Terrorists?

It has been over 15 years since such assessments about the use of WMD by terrorists began to be publicized. There still has been no major WMD attack by any terrorist group in the United States.

Interestingly, there is [no internationally agreed definition of either terrorism or WMD](#).

The U.S. Code and the FBI [define terrorism](#) as the “unlawful use of force or violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof in furtherance of political or social objectives.”

WMD is a term adopted from the former Soviet Union. The Federal Emergency Management Agency (FEMA) defines WMD as “any weapon that is designed or intended to cause death or serious bodily injury through the release, dissemination or impact of toxic or poisonous chemicals; disease organisms; radiation or radioactivity; or explosion or fire.”

With chemical, biological and radioactive agents, their [presence in any attack is not easily detected](#), making it difficult to determine when and where they were originally deployed.

**The main issue with defining WMD is what determines “mass destruction?” Is it the number of people affected? The amount of damage to property caused? This aspect of WMD is highly subjective. In any case, perhaps WMD is not even relevant regarding terrorist goals.**

### Terrorist Groups More Focused on Publicity and Recruitment, Not Weapons

There are numerous terrorist groups recognized by the U.S. Department of State. These groups include al-Qaeda, ISIS, HAMAS, Hezbollah, Abu Nidal, Abu Sayyaf, Aum Shinrikyo, al-Shabaab, Boko Haram and the al-Nusrah Front.

These terrorist groups conduct attacks for two purposes: to gain publicity that demonstrates the ineffectiveness and illegitimacy of the ruling government and to recruit new members. The [most effective terrorist attacks ever were conducted by al-Qaeda](#) on September 11, 2001, against the U.S. Terrorists destroyed the World Trade Center in New York City and damaged the Pentagon in Washington, DC.

These attacks provided weeks of primetime coverage on all the world's major networks, showing the damage and destruction caused by the hijacked airliners. They killed over 3,000 people (including Muslims) and caused over \$244 billion of damage. Each target was selectively chosen for its symbolic value.

Terrorists put on a big show for television audiences to instill as much fear, horror and panic as possible. Certainly, bombs, explosives and even airliners are effective in creating days, weeks or months of effective news coverage that helps terrorists accomplish their goal of widespread publicity.

After the terrorist attacks on 9/11, no major terrorist attacks with a widespread amount of property damage and human casualties have occurred in the U.S.. There have been [13 domestic terrorist attacks in America](#) since 2001, but they involved the killing of less than 10 people and relatively little damage.

The biggest terrorist attack over the past 15 years was on December 2, 2015. The perpetrators, husband and wife duo Syed Rizwan Farook and Tashfeen Malik, reportedly pledged allegiance to the Islamic State (ISIS). They killed 14 people and seriously injured 22 more at the Inland Regional Center in San Bernardino, California.

According to FBI Director Comey, the perpetrators were “homegrown violent extremists” inspired by ISIS. They were not directed by [any terrorist groups and were not part of any terrorist cell or network](#).

This attack and the other dozen or so made a relatively minor impact on the American and world TV audience. The Boston Marathon attack probably had the longest coverage, but that coverage was much shorter than the 9/11 attacks. Fewer people were killed and injured and there was less property damage. None of these terrorist attacks achieved the goal of terrorist organizations. They were “lone wolf” attacks that were not coordinated and financed by an overseas terrorist group.

### Terrorists Unlikely to Use WMD Due to Risks

Out of these 13 domestic terrorist attacks over the past 15 years, none involved a weapon of mass destruction. Using WMD weapons is risky for terrorists because the weapons cannot be tested in advance. Also, the resulting effects are unknown.



So how effective would a chemical, biological or nuclear weapon be in comparison to shootings and bombings?

Chemical weapons, for example, require either toxic industrial chemicals or nerve agents. Both are vulnerable to temperature, wind, sunlight and moisture. They would need to be used indoors to optimize effectiveness, limiting their ability to affect a large population and attract publicity.

Weaponizing chemicals is also a problem. While acquiring chemicals is relatively easy for terrorists, weaponizing them requires an advanced laboratory with people who have expertise in chemistry. And once a chemical weapon has been detonated, depending on whether the weapon is persistent or non-persistent, it could be 10 minutes to weeks before the effects are evident.

The Japanese cult Aum Shinrikyo launched a classic terrorist chemical attack in the Tokyo subway system on March 20, 1995. Members of this terrorist group released sarin gas and anthrax spores on several trains, killing only 13 people – not thousands — as they planned. This terrorist group [had the scientists and the laboratory to develop effective chemical weapons, yet still failed](#) to achieve the terror it hoped to cause.

### Biological Weapon Use

With biological weapons, the agents required to manufacture a weapon can be obtained or grown with relative ease. However, the biggest challenge regarding this type of weapon is its ability to be spread and infect as many people as possible.

Even if a terrorist group produced a biological weapon in a high-tech laboratory (to which terrorist groups are unlikely to have access), the challenges to accomplish a mass infection are significant.

Each biological weapon would have obstacles facing its transmission to a large group. Diseases have different characteristics. For example, anthrax is not contagious from person to person, unlike smallpox, which is highly contagious through the air.

Diseases usually have an incubation period of 12-14 days before their symptoms manifest themselves. There would be a long time span until medical experts determined that a biological terrorist attack took place. There would be an additional delay before the perpetrators of the attack were identified and caught. The difficulty of developing biological weapons, the lack of immediate publicity from the news media and the issue of no credit for their attacks makes the option of a biological weapon tenuous at best.

### Nuclear Weapon Use

Nuclear weapons have both traditional and non-traditional versions. Manufacturing a traditional nuclear weapon requires a lot of expertise, high-tech facilities, scientists and resources.

No one believes any terrorist group today could actually develop its own nuclear weapon. The far bigger concern is that a terrorist group could acquire nuclear weapons by either stealing or buying them.

However, significant problems still exist with using a traditional nuclear bomb for an attack. Nuclear bombs weigh several tons, making them difficult to store and transport. Nuclear bombs also have significant safeguards and self-destruction mechanisms built into them, so actually detonating a nuclear bomb would be a problem.

Non-traditional nuclear bombs, such the radiological weapon commonly known as the “dirty bomb,” are much easier to acquire and deploy. Radiological material is available in most societies today, if one knows where to look.

For instance, hospitals usually have some amount of radioactive cesium. If a terrorist group clandestinely acquired the right amount of cesium, it could detonate a conventional bomb to spread radioactive cesium throughout a given area, contaminating it with radiation for decades.

The level of radiation, however, would not be sufficient enough to kill most people, but it would cause exposed people to have radiation sickness. However, once any bomb goes off somewhere, few people think about radiation until people are diagnosed with radiation poisoning.

Because the intent of a terrorist attack is to create fear and panic via news sources, none of these types of WMD weapons are really suitable for terrorist use. The damage and loss of life they cause is minimal compared to conventional explosives.



### Conventional Bombs Have More Advantages for Terrorists

Bombs, however, have more value to terrorists than other weapons of mass destruction. They are relatively cheap and easy to construct. They are low technology compared to other types of WMD. And they offer a variety of detonating options to suit the target.

The CIA reports that it is likely that terrorist organizations will continue to use conventional explosives over WMD. Dr. Gavin Cameron, a Senior Research Associate at the Center for Nonproliferation Studies, stated that while “the threat posed by chemical and biological agents cannot be wholly dismissed, the [more immediate terrorist danger to the United States continues to come from the use of conventional weapons.](#)”

### Terrorist Use of WMD Remains Unlikely in Future

The United States has done a lot to deal with the threat of terrorists using non-conventional WMD over the past 15 years. Some of this effort may have thwarted or even deterred potential terrorist attacks using these weapons.

However, given the technical challenges, the required expertise, the immense manufacturing and deployment costs and the low opportunity for media exposure, the primary reason we have not seen the use of these weapons over the past decade is that terrorist groups have decided to forego using them in favor of more newsworthy conventional explosive weapons.

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**EDITOR'S COMMENT:** A thorough article aiming to reassure global populace that they can continue sleeping in peace now that they got used to conventional bombings. And one day the academia and other decision makers will express their huge surprise when the unexpected finally happened – preferably not in their own homeland but somewhere far away or in another planet!

## U.S. Navy Transfers New Decontamination Technology to Small Business for Distribution to Warfighters and First Responders

Source: <https://www.dvidshub.net/image/2840283/us-navy-transfers-new-decontamination-technology-small-business-distribution-warfighters-and-first-responders>



Sep 07 – Capt. Brian Durant and Amit Kapoor sign an exclusive license agreement authorizing First Line Technology LLC to manufacture Navy patented lifesaving decontamination technology for warfighters and first responders.

Chris Hodge, NSWCCD scientist and Dahlgren Decon inventor, standing. Hodge and his team worked for more than a decade to develop and test this revolutionary response to chemical and biological warfare agents. (U.S. Navy photo by John Joyce/Released)

The 'Dahlgren Decon' decontamination solution - developed to defend U.S. troops against chemical, biological, and radiological agents - is protected under several patents by Naval Surface Warfare Center Dahlgren Division (NSWCDD). Durant, NSWCDD commanding officer, and Kapoor, First Line Technology president, emphasized the importance of the





technology transfer that will equip first responders across the nation with technology to defend the public from hazardous threats. "This is the home run of technology transfer and doesn't happen without a lot of contributors," said

## Dahlgren Decon

Source: <http://www.firstlinetech.com/product/dahlgren-decon/>

**Dahlgren Decon is a three-component solution that can immediately decontaminate chemical and biological warfare agents.** Dahlgren Decon can be used on personal protective equipment (PPE), equipment, and critical infrastructure. Dahlgren Decon has at least a five-year shelf life in storage and will be efficacious for at least six hours after being mixed with any available water source – fresh water, salt water, and brackish water are all proven effective. Live-agent testing indicates that the surfactant based **decontamination formula with Dahlgren Decon is capable of 100% neutralization of HD in less than 2 minutes, 100% neutralization of GD in 5 minutes, and approximately 95% neutralization of VX in 15 minutes with no toxic byproducts observed.**



**Dahlgren Decon is available in the following volumes:** 200 ml, 22 oz, 1 gal, and 5 gal. Other volumes may be requested.

### HIGHLIGHTS

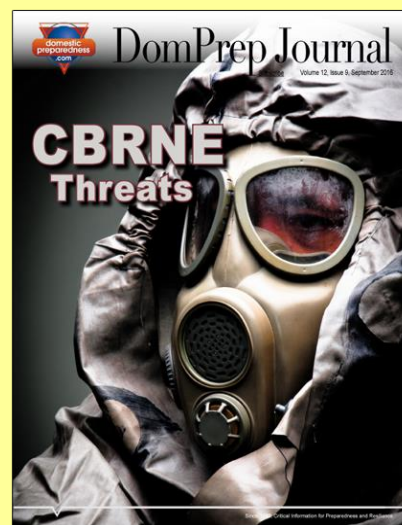
- Decontamination of Personal Protective Equipment (PPE), Equipment, and Critical Infrastructure
- Fast Acting Decon of Chemical and Biological\* Agents
- Excellent Material Compatibility
- Works with Detectors – No False Positives
- Non-Corrosive & Non-Flammable
- Non-Toxic By-Products
- Mixes with Any Available Water Source

\*Note: Dahlgren Decon is not EPA approved at this time.

## CBRNE Threats

**Domestic Preparedness Journal**

*Vol 12; issue 9; Sept 2016*



Source:

<http://www.domesticpreparedness.com/pub/docs/DPJSeptember16.pdf>



## Special Issue: Countermeasures Against Chemical Threats | June 2016

Annals of the New York Academy of Sciences

*The New York Academy of Sciences Volume 1374, Issue 1; pp. 1-209*

Issue edited by: Jeffrey D. Laskin

Source: <http://onlinelibrary.wiley.com/doi/10.1111/nyas.2016.1374.issue-1/issuetoc>



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- 6) Novel brain-penetrating oximes for reactivation of cholinesterase inhibited by sarin and VX surrogates  
Current oxime reactivators for organophosphate-inhibited cholinesterase (ChE) do not effectively cross the blood–brain barrier and therefore cannot restore brain ChE activity *in vivo*. Our laboratories have studied highly relevant sarin and VX surrogates, which differ from their respective nerve agents only in the leaving group and thereby leave ChE phosphorylated with the same chemical moiety as sarin and VX. Our laboratories have developed novel substituted phenoxyalkyl pyridinium oximes that lead to reduced ChE inhibition in the brains of rats challenged with a high sublethal dosage of the sarin surrogate, whereas 2-PAM did not, using a paradigm designed to demonstrate brain penetration. In addition, treatment of rats with these novel oximes is associated with attenuation of seizure-like behavior compared to rats treated with 2-PAM, providing additional evidence that the oximes penetrate the blood–brain barrier. Further, some of the oximes provided 24-h survival superior to 2-PAM, and shortened the duration of seizure-like behavior when rats were challenged with lethal dosages of the sarin and VX surrogates, providing additional support for the conclusion that these oximes penetrate the brain.
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- 13) The emerging threat of superwarfarins: history, detection, mechanisms, and countermeasures
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Sulfur mustard (SM; bis-(2-chloroethyl) sulfide) is a highly reactive, potent warfare agent that has recently reemerged as a major threat to military and civilians. Exposure to SM is often fatal, primarily due to pulmonary injuries and complications caused by its inhalation. Profound inflammation, hypercoagulation, and oxidative stress are the hallmarks that define SM-induced pulmonary toxicities. Despite advances, effective therapies are still limited. This current review focuses on inflammatory and coagulation pathways that influence the airway pathophysiology of SM poisoning and highlights the complexity of developing an effective therapeutic target.
- 15) Contributions of tissue-specific pathologies to corneal injuries following exposure to SM vapor



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## For bioterrorism preparedness, HHS sponsors inhaled chlorine antidote

Source: <https://www.hhs.gov/about/news/2016/09/29/bioterrorism-preparedness-hhs-sponsors-inhaled-chlorine-antidote.html>

Sep 29 – **The first potential antidote to treat the life-threatening effects of chlorine inhalation**, a potential terrorism threat, will advance in development under a contract between the U.S. Department of Health and Human Services' Office of the Assistant Secretary for Preparedness and Response (ASPR) and Radikal Therapeutics, Inc. of Beverly, Massachusetts.

**Currently, there is no specific antidote for lung injuries caused by chlorine exposure, and treatment has been limited supportive care.**

Chlorine gas is a widely available industrial chemical with catastrophic consequences in industrial accidents. Derailment of a train carrying chlorine in Graniteville, South Carolina, in 2005 led to nine deaths and hundreds of injuries. In addition, chlorine gas has been used as a weapon, for the first time in World War I and repeatedly in the recent Syrian civil war.

Today's two-year \$15.9 million contract is part of efforts by ASPR's Biomedical Advanced Research and Development Authority (BARDA) to develop medical products and procedures to protect health and save lives in a terrorist attack, including those using toxic industrial chemicals like chlorine. The contract could be extended up to a total of \$84.9 million over seven years.

"The United States faces a wide variety of threats to health security – from new infectious diseases like Zika to bioterrorism and accidents involving deadly gases like chlorine," said BARDA Acting Director Dr. Richard Hatchett. "Not being prepared for any of them could cost lives; we must be ready to protect health against the multitude of threats our country faces."

**Radikal's development of the antidote known as R-107** began with more than \$2.6

million in funding over four years from the National Institutes of Health CounterACT program. Under today's agreement with ASPR, the company will develop a more efficient way to produce large quantities of R-107 and conduct non-clinical studies to establish the drug's safety and effectiveness as a lifesaving treatment for acute lung injury resulting from inhaled chlorine.

**If non-clinical studies are successful, R-107 could begin clinical studies to establish safety and efficacy in humans.** This development work would not expose people to dangerous levels of chlorine gas and would support Radikal's submission of an application to the U.S. Food and Drug Administration (FDA) for approval of R-107 as an antidote for chlorine exposure.

ASPR's BARDA continues to seek proposals for the development of effective medical countermeasures and interventions for chemical threats, including new products and new indications for products already in clinical use. The products must be easy to use in a mass casualty situation and safe and effective for all segments of the population. Proposals are accepted through the Broad Agency Announcement BARDA-CBRN- BAA-16-100-SOL-00001 at the Federal Business Opportunities website, [www.fbo.gov](http://www.fbo.gov).

This new project is part of an integrated portfolio approach to the advanced research and development, innovation, acquisition, and manufacturing of medical countermeasures – vaccines, drugs, therapeutics, diagnostic tools, and non-pharmaceutical products for public health emergency threats. These threats include chemical, biological, radiological, and nuclear (CBRN) agents,





pandemic influenza, and emerging infectious diseases.

ASPR partners with other federal agencies, in particular the National Institutes of Health, as well as private industry to develop medical products needed to mitigate the health effects of disasters and other public health emergencies. Potential products may transition from basic research and early clinical trials at NIH divisions to BARDA for support of the advanced development necessary to earn FDA approval or licensure.

HHS enhances and protects the health and well-being of all Americans by providing for effective health and human services and fostering advances in medicine, public health, and social services. ASPR leads HHS in preparing the nation to respond to and recover from adverse health effects of emergencies, supporting communities' ability to withstand adversity, strengthening health and response systems, and enhancing national health security.

## Forgotten Lessons: The Return of Mustard Gas

By Joseph V. Micallef (Best Selling Military History and World Affairs Author and Keynote Speaker)

Source: [http://www.huffingtonpost.com/joseph-v-micallef/forgotten-lessons-the-ret\\_b\\_12272666.html](http://www.huffingtonpost.com/joseph-v-micallef/forgotten-lessons-the-ret_b_12272666.html)



Syrian soldier in protective gear

Oct 01 – A little more than a hundred years ago, on April 22, 1915, in what came to be called the Second Battle of Ypres, the German Army unleashed the first large scale use of poison gas as a weapon of war on the Western Front. This was not the first time that gas had been used in World War I, the Germans had already put it to use against the Russian Army in Poland a few months earlier.

Following a two-day bombardment, the German Army simultaneously released 168 tons of chlorine gas over a four-mile front. The Germans had hauled 6,000 gas cylinders, each weighing 90 pounds, to the front line. On a prearranged signal, the canisters were opened, releasing their deadly contents.

The panic that resulted opened a four-mile gap in the Allied lines. The First Canadian Division was stationed at St. Julien, on the flank of the gap. In what was considered a suicide mission, they were ordered to counterattack and prevent the Germans from advancing through the opening.

Lacking gas masks, they improvised by urinating on cloths and holding them to their faces.

The ammonia in the urine neutralized the chlorine gas. The Canadians' victory that day marked a second milestone, it was the first time that soldiers from the new world had defeated soldiers from the old on a European battlefield.



For all of its deadly affects, chlorine had shortcomings as a weapon of mass destruction. It was easily dispersed by the wind, limiting its effects. To compensate, the Germans developed sulfur mustard, otherwise known as mustard gas, which they used at the Third Battle of Ypres in July 1917.

The gas had a yellow color and smelled of mustard plants and garlic, hence its name. Mustard gas was heavier than chlorine gas, less likely to be dispersed by wind and its effects in the battlefield persisted longer. It has no known uses beyond being a weapon of mass destruction. In total, more than a million people were killed or injured as a result of contact with poison gas during WW I.

When WWII broke out both sides stockpiled poison gas fearing a return to the practice of WWI. The Italians used mustard gas during the Abyssinian campaign in 1935, the Polish Army used mustard gas grenades during the Nazi invasion in 1939, and there were reports that the Japanese used poison gas in Manchuria.

Winston Churchill authorized the use of gas against German troops if they invaded Great Britain. He also considered using mustard gas bombs against German cities but abandoned the idea. Adolf Hitler weighed using gas during the siege of Leningrad, but also opted not to employ it.

Since WWII there have been sporadic uses of mustard gas and other chemical agents on the battlefield. Egypt was accused of using poison gas, possibly mustard gas, during the civil war in North Yemen between 1963 and 1967.

There were also unsubstantiated reports that Vietnam used phosgene, another WWI era poison gas, against Cambodian resistance forces, hiding along the Thai border, during Vietnam's 1984-85, Cambodian intervention that toppled Pol Pot. Both South African troops and Cuban troops were accused of using chemical weapons during the Angolan Civil War.

It is Iraq and Syria, however, that are responsible for the lion's share of poison gas use since the end of WWII.

Saddam Hussein used a variety of chemical weapons, including mustard gas, against Iranian forces during the Iraq-Iran war. Hussein also used poison gas against the Kurdish village of Halabja, and during the al-Anfal campaign against Kurdish civilians and other minorities in Northern Iraq. There were also unconfirmed reports that Hussein used poison gas against Shiite rebels in the Shat al-Arab marshes in the Persian Gulf.

Chemical weapons have also been used by Syrian military forces, loyal to the Assad government, against various Syrian rebel groups and civilians. In August 2012, US President Barack Obama warned Syrian President Bashar al-Assad, that the use of chemical weapons by his forces would represent a red line for the US. Unfortunately, the Obama Administration's threat proved to be hollow and was quickly forgotten when evidence of Syria's use of chemical weapons emerged.

In September 2013, Russia, in collaboration with the United States, brokered an agreement under which Syria agreed to turn over its chemical weapons for destruction under UN supervision. These weapons amounted to around 1,000 tons of sarin, mustard gas and VX.

Chlorine, the original WWI era poison gas, was exempted since chlorine gas has widespread use in industry. Many municipal waterworks, for example, uses liquid chlorine gas to chlorinate water supplies. Despite the agreement, however, there have been widespread reports that the Assad government has used canisters of chlorine gas in the barrel bombs that it uses to target civilians. There have also been unverified reports that the Assad government retained some stocks of sarin and VX gas.

Poison gasses, not surprisingly, are popular among terrorist organizations. They are the cheapest and easiest weapons of mass destruction to produce. The Japanese group Aum Shinrikyo used sarin gas in an attack in Matsumoto, Japan on June 27, 1994. The following year, they released sarin gas into the Tokyo subway system.

Russian Chechen and various Sunni jihadist groups in Iraq, including Islamic State (IS), have exploded tanks of chlorine gas, including blowing up tanker trucks full of liquid chlorine, as improvised weapons of mass destruction (IWMD).

In addition, according to Pentagon sources, Islamic State has been producing and stockpiling mustard gas since 2015.

There have been reports from Kurdish and other sources that Islamic State has fired artillery shells and mortar rounds that contained mustard gas. Follow up tests, however, have proven



to be inconclusive. Nonetheless, Sleiman Daoud al-Atari, the recently captured head of Islamic State's chemical weapons program, has admitted to US interrogators that IS has amassed a stockpile of mustard gas, which it intends to deploy in the upcoming battle of Mosul.

On Sept 12, 2016, US warplanes destroyed a pharmaceutical factory in Mosul that US Central Command believes had been converted into a chemical weapons manufacturing facility. There have also been persistent reports that IS has been working on developing other chemical agents in laboratories at the University of Mosul.



Victims of a mustard gas attack by Syrian military forces, Ghouta, Syria August 27, 2013

Mustard gas can be used both as an offensive weapon against advancing troops and, in large quantities, to create area denial zones that prevent the advance of Iraqi troops and force them into preselected attack routes set up as kill zones.

In a briefing to the Pentagon, reported in [military.com](http://military.com), Army Colonel John Dorrian confirmed that US forces anticipate that Islamic State fighters will use mustard gas, and possibly other chemical weapons, during the Battle for Mosul. He also confirmed that IS has dug tunnels to enable them to attack rear areas of the Iraqi forces. The US has already distributed some 50,000 kits of "personal protective gear" to Iraqi and Kurdish forces.

The Shiite militias, interestingly enough, do not have protective gear in the event of a chemical weapons attack, a factor that may limit their involvement in the Battle of Mosul. Iran, however, is believed to have such gear and could, in theory, supply it if it becomes necessary. Such an action, however, would further highlight Iran's role in arming the Shiite militias.

With the exception of the Iraq-Iran war and the civil war in Syria, poison gas in general and mustard gas in particular has been largely absent from post WWI military conflict. After an absence of almost a century, mustard gas is about to return to the modern battlefield.

## Sudan used chemical weapons against civilians in Darfur

Source: <http://www.homelandsecuritynewswire.com/dr20160929-sudan-used-chemical-weapons-against-civilians-in-darfur>

Sep 29 – **An Amnesty International investigation has gathered evidence of the repeated use of what are believed to be chemical weapons against civilians, including very young children, by Sudanese government forces in one of the most remote regions of Darfur over the past eight months.**

Amnesty International says that the investigators, using satellite imagery, more than 200 in-depth interviews with survivors, and expert analysis of dozens of images showing babies and young children with chemical weapons-related injuries, the investigation indicates that at least thirty likely chemical attacks have taken place in the Jebel Marra area of Darfur since January 2016. The most recent was on 9 September 2016.





"The scale and brutality of these attacks is hard to put into words. The images and videos we have seen in the course of our research are truly



shocking; in one a young child is screaming with pain before dying; many photos show young children covered in lesions and blisters. Some were unable to breathe and vomiting blood," said Tirana Hassan, Amnesty International's Director of Crisis Research.

"It is hard to exaggerate just how cruel the effects of these chemicals are when they come into contact with the human body. Chemical weapons have been banned for decades in recognition of the fact that the level of suffering they cause can never be justified. The fact that Sudan's government is now repeatedly using them against their own people simply cannot be ignored and demands action."

Based on testimony from caregivers and survivors, Amnesty International estimates that between 200 and 250 people may have died as a result of exposure to the chemical weapons agents, with many – or most – being children. Hundreds more survived attacks but in the hours and days after exposure to the chemicals developed symptoms including severe gastrointestinal conditions involving bloody

vomiting and diarrhea; blistering and rashes on skin which reportedly hardened, changed color, and fell off; eye problems including complete loss of vision; and respiratory problems which were reported to be the most common cause of death.

One woman in her twenties was injured by shrapnel when a bomb which emitted a toxic cloud of smoke fell inside her village. She and her baby became sick and six months later they are still suffering from the effects.

"When [the bomb] landed there was some flames and then dark smoke...Immediately it caused vomiting and dizzying...My skin is not normal. I still have headaches, even after I took the medicine...The baby is not recovering...he is swollen...he has blisters and wounds...they said he would get better...but it is not working."

Another woman in her thirties was at home with her children in the village of Burro when it was attacked. She told Amnesty International that she saw several bombs discharge black smoke which then turned blue.

"Several bombs fell around the village and in the hills...Most of my kids are sick from the smoke of the bombardment...They got sick on the day of the attack...They vomited and they had diarrhea...They were coughing a lot...Their skin turned dark like it was burned."

Many of the victims told Amnesty International that they had no access to medicine and were being treated using a combination of salt, limes and local herbs.

One man helped to care for many people in his village and neighboring villages who he believed had been exposed to chemicals. He told Amnesty International that he had been helping to care for victims of the conflict in Jebel Marra since it began in 2003 and had never seen anything like these ailments before.

Nineteen of those who he cared for died, including children, within a month of exposure. He said that all those who died experienced major changes to the skin. About half had wounds that turned green and the



other half had skin fall off and weeping blisters appear.

The chemical weapons agents were reportedly delivered by bombs dropped from planes and rockets. The vast majority of survivors reported that the smoke released when the bomb or rocket exploded changed color between five and twenty minutes after release. Most witnesses said it started very dark and then became lighter. Every survivor said that the smoke smelled noxious.

Amnesty International presented its findings to two independent chemical weapons experts. Both concluded that the evidence strongly suggested exposure to vesicants, or blister agents, such as the chemical warfare agents sulfur mustard, lewisite or nitrogen mustard.

"This suspected use of chemical weapons represents not only a new low in the catalogue of crimes under international law by the Sudanese military against civilians in Darfur, but also a new level of hubris by the government towards the international community," said Tirana Hassan.

"The use of chemical weapons is a war crime. The evidence we have gathered is credible and portrays a regime that is intent on directing attacks against the civilian population in Darfur without any fear of international retribution."

The suspected chemical attacks come amid a large-scale military offensive launched in January 2016 by Sudanese forces in Jebel Marra against the Sudan Liberation Army/Abdul Wahid (SLA/AW) who they accuse of ambushing military convoys and attacking civilians.

In the eight months since the offensive was launched, Amnesty International has documented scores of instances in which government forces deliberately targeted civilians and civilian property.

Survivors and local human rights monitors provided the names of 367 civilians, including 95 children who were killed in Jebel Marra by government forces in the first six months of this year. Many people, including children, also died as a result of starvation, dehydration or a lack of medical care in the aftermath of attacks.

Using satellite imagery, Amnesty International can confirm that 171 villages have been destroyed or damaged in the last eight months of the military campaign. The overwhelming

majority of these had no formal armed opposition presence at the time they were attacked.

The attacks were also characterized by gross human rights violations including the systematic bombing of civilians, killings of men, women and children, the abduction and rape of women, forced displacement of civilians and looting.

**The evidence documenting all these attacks has been organized and presented via an interactive digital platform designed by [SITU Research](#) in collaboration with Amnesty International.**

"Scorched earth, mass rapes, killings and bombs — these are the same war crimes being committed in Darfur as in 2004 when the world first woke up to what was happening. This region has been stuck in a catastrophic cycle of violence for more than thirteen years, nothing has changed except that the world has stopped watching," said Tirana Hassan.

"Absolutely no effective measures have ever been put in place to protect civilians despite being under the watch of a joint AU and UN peacekeeping mission. Peace talks and agreements have brought no security or respite for the Darfuri people. So far, the international community's response has been deplorable. It cannot continue to avert its eyes in the face of such horrific and endless abuses."

**Amnesty International is calling on the UN Security Council to:**

- Apply sufficient political pressure on the Government of Sudan to ensure that peacekeepers and humanitarian agencies are allowed to access remote populations like that in Jebel Marra;
- Ensure the current arms embargo is strictly implemented and extended to cover the whole country.
- Urgently investigate the use of chemical weapons and, if there is sufficient admissible evidence, prosecute all those suspected of responsibility.

**Amnesty International makes the following notes:**

- Credible information about the impact of the violence on the civilian population inside Jebel Marra is extremely difficult to find. Restrictions on access imposed by the government means no



journalist, human rights investigator or humanitarian actor has been permitted to conduct any assessment of the area in 2016.

- Amnesty International conducted research for this report remotely, interviewing 235 people by phone. Local intermediaries helped identify and contact survivors. Interviews were in depth and lasted between 30-120 minutes. Many individuals were interviewed on multiple occasions.
- At the end of July 2016, the UN estimated that a quarter of a million people may have been displaced by violence in Jebel Marra. Many fled to the nearest UN/AU peacekeeping base in Sortini on the northern edge of Jebel Marra.
- The interactive digital platform designed by SITU Research allows geo-spatial

information, satellite imagery, witness testimony, and photographs to be viewed in a single interface. This tool is intended to provide a spatial and temporal account of previously undocumented violations by synthesizing disparate assets into a single digital interface. The goal of this collaboration and the platform itself is to render visible the developments and scale of ongoing human rights violations in a remote and inaccessible part of Sudan.

- The latest Amnesty Decoders project, launching next week, will call on digital volunteers to help analyze satellite imagery from Darfur and identify whether villages appear to have been attacked, damaged, or destroyed.

— [\*Read more in Sudan: Scorched earth, poisoned air: Sudanese government forces ravage Jebel Marra, Darfur \(Amnesty International, 29 September 2016\); Tales of terror: Darfur villagers reveal gruesome effects of suspected chemical weapons attacks \(Amnesty International, 29 September 2016\).\*](#)

## France wants investigation into alleged Sudan chemical weapons use

Source: <http://www.reuters.com/article/us-sudan-darfur-chemicalweapons-france-idUSKCN1201UI>

Sep 30 – **France said on Friday it wanted an international investigation to decide whether Sudanese government forces had used chemical weapons in Darfur after allegations in a "worrying" report by Amnesty International.**

The rights group said on Thursday the government has carried out at least 30 likely chemical weapons attacks in the Jebel Marra area of Darfur since January using what two experts concluded was a probable blister agent.

Foreign ministry spokesman Romain Nadal, describing the report as "worrying", said it carried very serious allegations which had to be investigated.

"We think that the report raises questions for the international community and so the relevant institutions should look closely into it and examine the seriousness of the claims to establish the reality," he told reporters.

**The rights group estimated that up to 250 people may have died as a result of exposure to the chemical weapons agents.**

Sudanese U.N. Ambassador Omer Dahab Fadl Mohamed said on Thursday in a statement that the Amnesty report was "utterly unfounded" and denied that Sudan possessed any kind of chemical weapons. Nadal said Paris wanted The Organization for the Prohibition of Chemical Weapons (OPCW) in the Hague to investigate thoroughly as well as the United Nations–African Union Mission in Darfur (UNAMID) to shed some light on events.

**Amnesty said the most recent attack occurred on Sept. 9. Its investigation was based on satellite imagery, more than 200 interviews and expert analysis of images showing injuries.**





**EU Non-PROLIFERATION CONSORTIUM***The European network of independent non-proliferation think tanks***Non-PROLIFERATION PAPERS**

No. 48 March 2016

**THE DUAL-USE EXPORT CONTROL POLICY  
REVIEW: BALANCING SECURITY, TRADE AND  
ACADEMIC FREEDOM IN A CHANGING WORLD**

SIBYLLE BAUER AND MARK BROMLEY

Source: [https://www.sipri.org/sites/default/files/EUNPC\\_no-48.pdf](https://www.sipri.org/sites/default/files/EUNPC_no-48.pdf)

The 2009 European Union (EU) Dual-use Regulation, which provides a common legal basis for dual-use export controls across the EU, is currently undergoing a detailed review. Concrete proposals on how it could be modified are due to be produced by the European Commission in the first half of 2016. These will then be discussed with the EU Council and the European Parliament before adoption.

This paper aims to inform the ongoing process by providing a detailed analysis of the review options currently being discussed and the key considerations that will need to be addressed. In particular, it details the range of generic and EU-specific challenges that confront the implementation of dual-use export controls. It also lays out concrete options for how the EU could address these challenges while strengthening the Dual-use Regulation in ways that promote both security and human rights, without generating unnecessary regulatory burden.

*Dr Sibylle Bauer (Germany) is Director of SIPRI's Dual-use and Arms Trade Control Programme. Before joining SIPRI in 2003, she was a researcher with the Institute for European Studies at the Free University of Brussels (ULB). Dr Bauer has published widely on dual-use and armaments-related issues. Since 2005 she has been involved in capacity building to enhance transit, trans-shipment, brokering and export controls, with a focus on Europe and South East Asia.*

*Mark Bromley (United Kingdom) is Co-Director of the SIPRI Dual-use and Arms Trade Control Programme, where his work focuses on national, regional and international efforts to regulate the international arms trade. Previously, he was a policy analyst for the British American Security Information Council (BASIC).*

**Guidelines for Chemical Warfare Agents in Military Field  
Drinking Water**Source: <https://www.ncbi.nlm.nih.gov/books/NBK224196/>

Modern chemical warfare began in 1915 with the use of chlorine by Germany in a large-scale attack against the Allies near Ypres, Belgium. That incident during World War I led to increased efforts toward the development of more toxic chemical warfare (CW) agents (e.g., agents that are toxic following dermal absorption) as well as more effective protective gear (e.g., more effective gas masks). In July 1917, the blistering agent sulfur mustard was used by the German army for the first time as a CW agent (IOM, 1993). Almost 100,000 deaths and more than 1 million casualties were caused by the use of CW agents in World War I. The 1925 Geneva Protocol prohibited the use of chemical and biological weapons but did not address their development, production, and storage. Unfortunately, the use of CW agents continued. There is strong evidence that they were used by Italy against Ethiopia (1935-1936), by Japan against China (1939-1944), and by Iraq against Iran as well as against the Kurdish population (1983-1988). The threat of chemical warfare by Iraq was



reported during the Persian Gulf War in 1991. Therefore, CW agents are considered possible contaminants of field drinking-water supplies for military personnel during military conflicts (Lawrence Livermore National Laboratory, 1990a).

**CW agents that might appear in field drinking water following a military attack include 3-quinuclidinyl benzilate (BZ), organophosphorus nerve agents (GA, GB, GD, and VX), sulfur mustard agents, T-2 toxin (a fungal metabolite recently identified as a possible CW agent), lewisite (an arsenical vesicant), and cyanide.** Other CW agents might also contaminate water supplies, but this report reviews the toxicity and drinking-water standards of only the CW agents listed above.

Because of the Army's concern for the potential exposure of military personnel to CW agents, the Army requested that the National Research Council (NRC) review the toxicity of the CW agents and assess the appropriateness of the proposed field drinking-water-quality standards for these agents. Most of the standards were proposed by the Army in collaboration with the Lawrence Livermore National Laboratory (1988, 1990a,b). The Army's recommended standards for the CW agents of concern are applicable only to military personnel deployed in the field. They are meant to protect military personnel against acute adverse health effects or performance-degrading effects resulting from the ingestion of contaminated field drinking water. **The Army's assumptions in deriving short-term field drinking-water standards are that military personnel consume 5-15 liters (L) of water per day, that they might be exposed for up to 7 days, and that the field drinking water contains no other toxic materials.**

The NRC assigned this task to the Committee on Toxicology (COT). COT's Subcommittee on Guidelines for Military Field Drinking-Water Quality reviewed and assessed (1) the potential health effects associated with ingestion of each of the CW agents of concern, and (2) the Army's criteria for establishing revised field drinking-water standards. Based on the review, the subcommittee determined the adequacy of the field drinking-water standards for the CW agents of concern and recommended revisions, as needed, to those standards. In addition, the NRC was asked to take into consideration the Army's assumptions concerning consumption of contaminated field drinking water and duration of exposure. Neither the existence or performance of water-quality monitoring devices nor the efficiency of water-purification equipment was a consideration in the subcommittee's recommendations for field drinking-water guidelines for CW agents. Similarly, the recommended guidelines are not intended to protect against late-appearing health effects such as carcinogenesis or teratogenesis. However, the report calls attention to data on potential carcinogenicity or genotoxicity whenever it appears that such data would be useful to field commanders.

In this report, the subcommittee's recommendations on acceptable exposure levels for CW agents in field drinking water are referred to as "guidelines" rather than "standards" for field drinking-water quality. The term "standards" implies a regulatory limit that cannot be exceeded. The subcommittee believes that the use of the term "guidelines" provides the necessary flexibility to field commanders who must weigh the application of exposure recommendations against the need for adequate hydration, combat readiness, and mission success.

The subcommittee reviewed the Army's criteria for developing field drinking-water standards and generally agrees with the criteria (see [Appendix A](#)). Therefore, the subcommittee did not develop its own criteria for establishing guidelines for CW agents in military field drinking water.

Field drinking-water guidelines recommended for the CW agents by the subcommittee are intended to protect essentially all military occupational specialties. The recommended guidelines are not applicable to populations of civilians and do not represent water-quality standards for drinking water treated at fixed water-purification installations. It should be noted that the intent of this report was not to review the toxicity of the CW agents in detail but to determine the adequacy of the Army's proposed field drinking-water standards. For greater detail on the toxicity of the CW agents, the reader is referred to the reports of the Lawrence Livermore National Laboratory (1988, 1990a,b) and the U.S. Army (1988, 1990a).

The Army has indicated that it plans to submit the NRC's field drinking-water guidelines to a triservice (Army, Navy, and Air Force) medical review panel for formal adoption as joint service standards. The standards might then be submitted for incorporation into the North Atlantic Treaty Organization's Standardization Agreements and the Quadripartite Standardization Agreements.



The report is organized as follows: 3-quinuclidinyl benzilate (BZ) is discussed in [Chapter 2](#), organophosphorus nerve agents in [Chapter 3](#), sulfur mustard in [Chapter 4](#), T-2 toxin in [Chapter 5](#), lewisite in [Chapter 6](#), and cyanide in [Chapter 7](#). [Appendix A](#) describes the criteria used by the Army to establish field drinking-water standards and the subcommittee's evaluation of the criteria. [Appendix B](#) contains a discussion on the current capability to detect CW agents in field drinking water.

## Secret World War II Chemical Experiments Tested Troops By Race

Source: <http://www.npr.org/2015/06/22/415194765/u-s-troops-tested-by-race-in-secret-world-war-ii-chemical-experiments>



These historical photographs depict the forearms of human test subjects after being exposed to nitrogen mustard and lewisite agents in World War II experiments conducted at the Naval Research Laboratory in Washington, D.C. (Courtesy of the Naval Research Laboratory)



Rollins Edwards, who lives in Summerville, S.C., shows one of his many scars from exposure to mustard gas in World War II military experiments. More than 70 years after the exposure, his skin still falls off in flakes. For years, he carried around a jar full of the flakes to try to convince people of what happened to him (Amelia Phillips Hale for NPR)

► Read the article at source's URL.







## Mass Casualty Decontamination Guidance and Psychosocial Aspects of CBRN Incident Management: A Review and Synthesis

By Holly Carter and Richard Amlôt (Emergency Response Department, PHE, UK)

Source: <http://currents.plos.org/disasters/article/mass-casualty-decontamination-guidance-and-psychosocial-aspects-of-cbrn-incident-management-a-review-and-synthesis/>

### Abstract

**Introduction:** Mass casualty decontamination is an intervention employed by first responders at the scene of an incident involving noxious contaminants. Many countries have sought to address the challenge of decontaminating large numbers of affected casualties through the provision of rapidly deployable temporary showering structures, with accompanying decontamination protocols. In this paper we review decontamination guidance for emergency responders and associated research evidence, in order to establish to what extent psychosocial aspects of casualty management have been considered within these documents. The review focuses on five psychosocial aspects of incident management: likely public behaviour; responder management style; communication strategy; privacy/ modesty concerns; and vulnerable groups.

**Methods:** Two structured literature reviews were carried out; one to identify decontamination guidance documents for first responders, and another to identify evidence which is relevant to the understanding of the psychosocial aspects of mass decontamination. The guidance documents and relevant research were reviewed to identify whether the guidance documents contain information relating to psychosocial issues and where it exists, that the guidance is consistent with the existing evidence-base.

**Results:** Psychosocial aspects of incident management receive limited attention in current decontamination guidance. In addition, our review has identified a number of gaps and inconsistencies between guidance and research evidence. For each of the five areas we identify: what is currently presented in guidance documents, to what extent this is consistent with the existing research evidence and where it diverges. We present a series of evidence-based recommendations for updating decontamination guidance to address the psychosocial aspects of mass decontamination.

**Conclusions:** Effective communication and respect for casualties' needs are critical in ensuring decontamination is completed quickly and effectively. We identify a number of areas requiring further research including: identifying effective methods for communicating in an emergency; better understanding of the needs of vulnerable groups during decontamination; effective training for emergency responders on psychosocial issues, and pre-incident public education for incidents involving emergency decontamination. It is essential that the psychosocial aspects of mass decontamination are not neglected in the pursuit of solely technical solutions.

► Read the full (big) paper at source's URL.

### EDITOR'S COMMENT

(based on recent – Sept 2016 – participation in EU EDEN Live Demo, Rome, Italy): This is an excellent paper and all CBRN FRs should keep it aside as reference material. I strongly **propose** all FRs to be submitted – at least once – in a decon drill where they will be the victims – both men and especially women. You have to feel the “real thing” to know how exactly victims will feel during your life saving interventions. Try it and it might change the way you do things!



## Greece – Rhodes Airport evacuated with passengers 'coughing and suffering from stinging eyes'

Source: <http://www.mirror.co.uk/news/world-news/rhodes-airport-evacuated-passengers-coughing-8985836>

Oct 05 – A major airport in Greece has been evacuated with reports of travellers coughing and suffering from stinging eyes.



**ellyjellybaby**  
@ellyjellybaby

 Follow

@BBCBreaking #securityalert @ #Rhodes airport people coughing - my parents are there.

7:55 PM - 5 Oct 2016

Passengers at Rhodes Airport have been told to wait outside with pictures showing crowds outside the terminal.

One Twitter user said her parents are at the airport and had been told of a pepper spray attack.

She said flights had been delayed and people were coughing.

Tweeting under the name Ellyjellybaby, she said: "I'm worried for my parents. Don't care if they are delayed as long as they are ok."

Some reports online suggest it could be a security exercise.

However, one passenger said he doubted this could be the case.

Writing on Twitter, a traveller called Gerry said: "Clearly wasn't a security exercise - not unless the airport was releasing something to make us cough/sneeze too."

Shortly after the evacuation passengers were allowed back inside the airport and flights resumed.

But family of those caught up in the incident were still baffled by what happened.

Twitter user Ellyjellybaby

said her parents were now on their flight home

She claimed the airport offered no explanation before ushering people back inside.

She said: "Parents away now on their flight back. But mum said she had a stinging throat and cough too. - seems very odd."

The airport tonight issued a statement saying the airport was evacuated for 40 minutes as a precaution.



A statement said: "As a precaution and for forty minutes the airport was evacuated at 7pm when some of the officials and passengers complained of throat and cough symptoms."  
It said after checks the airport was deemed safe and people were allowed back inside.

**EDITOR'S COMMENT:** Strange incident that is still under investigation. But even if it was pepper spray, imagine the mess that might be provoked with the addition of the (now) two well known words usually said out loud in terrorist attacks. The big issue is if the incident took place before or after the security control. Imagine what a pepper spray attack can do during a flight!  
UPDATE: It was pepper spray and the incident happened at the check-in area following a dispute between two passengers.

## A nerve agent antidote taken before a chemical weapons attack

Source: [https://www.eurekalert.org/pub\\_releases/2016-10/acs-ana100516.php](https://www.eurekalert.org/pub_releases/2016-10/acs-ana100516.php)

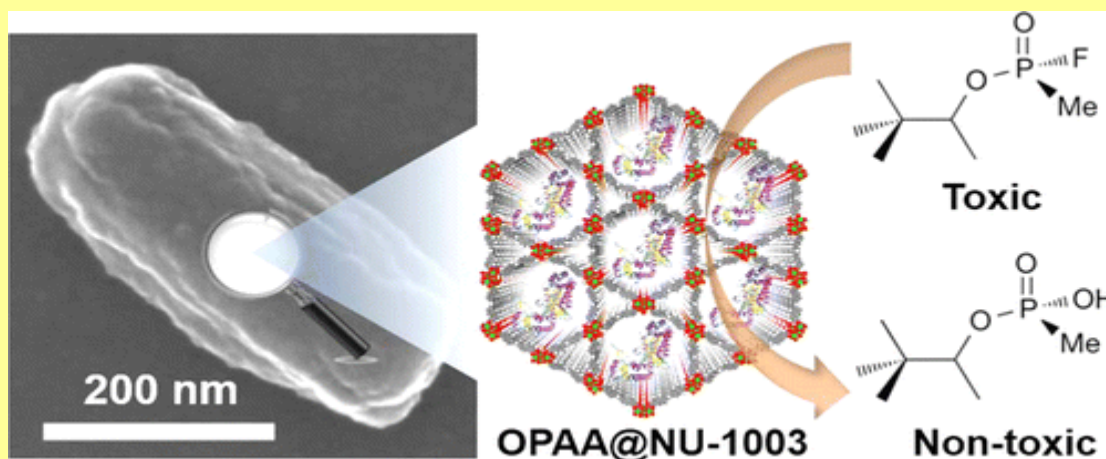
Oct 06 – Nerve agents are molecular weapons that invade the body and sabotage part of the nervous system, causing horrific symptoms and sometimes death within minutes. Few antidotes exist, and those that do must be administered soon after an attack. Now,



scientists report in the journal [ACS Nano](#) an **early-stage development of a potential treatment that soldiers or others could take before such agents are unleashed.** The American Chemical Society [says](#) that one particular antidote, **an enzyme called organophosphorus acid anhydrolase (OPAA),** has attracted attention recently for its ability to break down nerve agents. But the body's immune system gets rid of it quickly. Packaging the enzyme in liposome nanocarriers gives the antidote greater staying power, but handling and

storing the liposomes is complicated. So Omar K. Farha and colleagues wanted to make a potentially simpler carrier.

For a material, the researchers turned to porous metal-organic frameworks (MOFs), a class of hybrid materials made of metallic ions and organic ligands that are easy to store and handle at room temperature. They used a zirconium-based MOF and loaded it with the antidote. Testing showed the MOF-



encapsulated enzyme was even more effective at breaking down the nerve agent simulant diisopropyl fluorophosphate and the nerve agent soman than the antidote by itself.

— Read more in Peng Li et al., "Nanosizing a Metal–Organic Framework Enzyme Carrier for Accelerating Nerve Agent Hydrolysis," [ACS Nano](#) (5 October 2016) (DOI: 10.1021/acsnano.6b04996).







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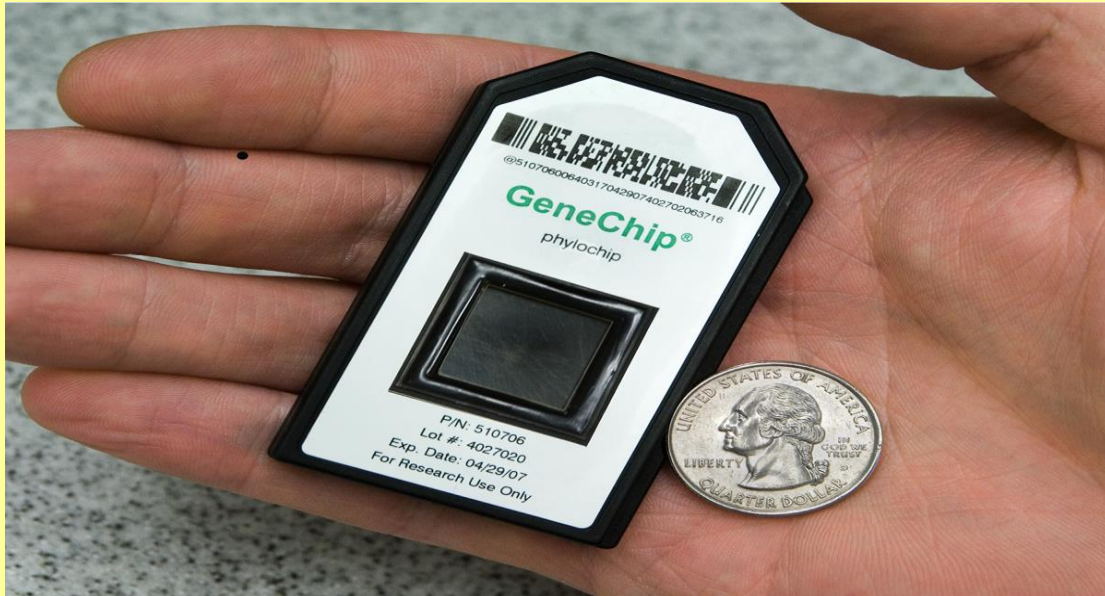


## New technology pinpoints water contamination sources

Source: <http://www.homelandsecuritynewswire.com/dr20161005-new-technology-pinpoints-water-contamination-sources>

Oct 05 – When the local water management agency closes your favorite beach due to unhealthy water quality, how reliable are the tests they base their decisions on? As it turns out, those tests, as well as the standards behind them, have not been updated in decades. Now scientists from Lawrence Berkeley National Laboratory (Berkeley Lab) have developed a highly accurate, DNA-based method to detect and distinguish sources of microbial contamination in water.

LBL says that the new method, using the award-winning **PhyloChip**, a credit card-sized device that can



detect the presence of more than 60,000 species of bacteria and archaea, was found to be more sensitive than conventional methods at assessing health risks. In tests at the Russian River watershed in Northern California, the Berkeley Lab researchers found instances where their method identified potential human health risks that conventional fecal indicator tests had failed to detect. Conversely, they also found instances where the conventional tests flagged bacteria that weren't likely risks to human health.

The research was led by Eric Dubinsky and Gary Andersen, microbial ecologists at Berkeley Lab, and was published recently in the journal *Water Research*. Steven Butkus of the North Coast Regional Water Quality Control Board, which supported part of the research, was also a co-author.

"With the PhyloChip, in an overnight test we can get a full picture of the microorganisms in any given sample," Dubinsky said. "Instead of targeting one organism, we're essentially getting a fingerprint of the microbial community of potential sources in that sample. So it gives us a more comprehensive picture of what's going on. It's a novel way of going about source tracking."

What local water agencies currently do is collect water samples, culture the bacteria overnight, and then check the growth level of two types of bacteria, *E. coli* and *Enterococcus*, which are presumed to be indicators of fecal contamination.

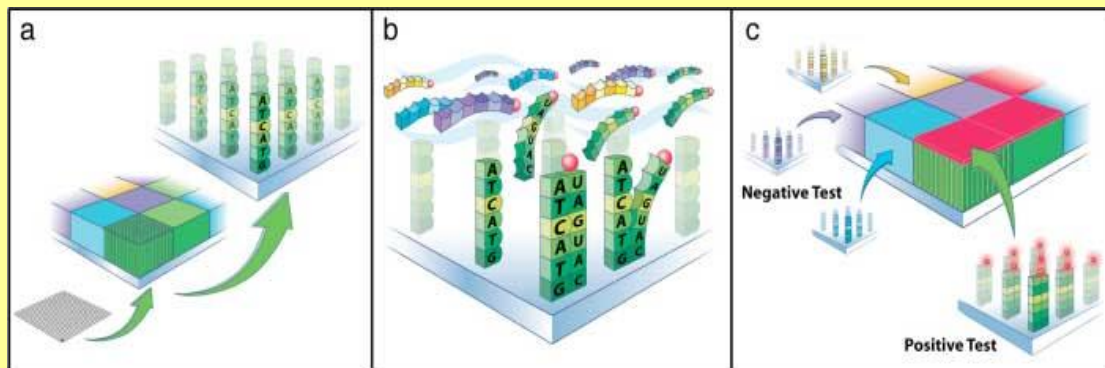
### Power of the PhyloChip

However, this method does not distinguish between sources. The bacteria could have come from humans, cows, ducks, sewage, or even decaying vegetation.

"These tests have been used for decades and are relatively primitive," Dubinsky said. "Back in the 1970s when the Clean Water Act was developed and we had sewage basically flowing into our waters, these tests worked really well. Epidemiological studies showed an association of these bacteria with levels of illness of people who used the water. These



bacteria don't necessarily get you sick, but they're found in sewage and fecal matter. That's why they're measured."



PhyloChip operation: (a) Multiple tests conducted on a single glass surface; (b) DNA from a sample (blood, soil, water, etc.) adheres where a match is found ("hybridization"); (c) Laser scanning reveals which tests were positive (i.e., which microbes are present). In this way, PhyloChip quickly and accurately identifies microbes in complex samples. (Images provided by Affymetrix, Inc., Santa Clara, CA.)

As pollution from point sources — single identifiable sources such as sewage — has been cleaned up over time, the emerging concern has become what are known as nonpoint sources, or diffuse sources, throughout the watershed, such as agricultural lands.

"The picture is much more complicated now than it was back then, when the concern was really point sources," Dubinsky added.

The PhyloChip, which was developed by Andersen and several other Berkeley Lab scientists, has been used for a number of medical, agricultural, and environmental purposes, including understanding air pollution, the ecology of coral reefs, and environmental conditions of the Gulf of Mexico after the BP oil spill. With one million probes, it identifies microbes based on variations of a specific gene, with no culturing needed.

"About seven years ago we started doing water quality work, and we realized the PhyloChip could provide a fundamentally new and improved method for doing source tracking," Andersen said.

### A Library of poop

Determining the source of any particular pathogen is not a straightforward task. In most cases, a single microbe is not a definitive marker of an animal or other source. "A microbial community is complex," Dubinsky said. "A cow may have 1,000 different organisms."

So Andersen and Dubinsky had an idea. "We had Laleh Coté, an intern at the time and now a Lab employee, run around and basically collect poop from all sorts of animals," said Andersen. "What we've done since then is develop a reference library of the microbial communities that occur in different types of poop — we have cows, horses, raccoons, humans, different types of birds, pigs, sea lions, and other animals, as well as sewage and septage. We used that library to develop a model."

The new method takes the unknown sample and compares it against this microbial reference library. "We've used the PhyloChip in a way that it hasn't been used before by using machine learning models to analyze the data in order to detect and classify sources," Andersen said. "It's essentially giving you a statistical probability that a microbial community came from a particular source."

They validated their method by comparing it to about forty other methods of microbial source tracking in a California study. "We were the only method that could detect all sources and get them right," Dubinsky said.

If the source is an animal that is not in the reference library, their method can still point you in the right direction. "For example, in that study, one sample was a chicken," said Dubinsky. "We hadn't analyzed chickens, but we had geese, gulls, and pigeons. We were still able to determine that the sample was a bird."





In extensive testing throughout the Russian River watershed, which is out of compliance with the Clean Water Act, the Berkeley Lab researchers found widespread contamination by human sources close to areas where communities rely on aging septic tanks.

They also found significant human contamination immediately after a weekend jazz festival, whereas testing by conventional methods yielded a much weaker signal after a time lag of a couple days. “Our method is more sensitive to human contamination than those fecal indicator tests are,” Dubinsky said.

### Next steps

The team is now working on characterizing the microbial community of naturally occurring *E. coli* and *Enterococci*, using Hawaii with its warm waters as a testing ground. “They can occur naturally in sediments and decaying kelp and vegetation,” Dubinsky said. “It is known that they do, but nobody has developed a test to definitively show that.”

The researchers will also be able to study whether climate affects microbial communities. “Does a Hawaiian cow look like a California cow in terms of fecal bacteria composition? That’s a good question and something we’ll be able to find out,” he said.

They are working closely with the U.S. Environmental Protection Agency (EPA), which is looking at new technologies for what it calls “next generation compliance.” Ultimately the goal is to develop their method — possibly with a downsized version of the PhyloChip — to the point where it can be universally used in any location and by non-experts.

Dubinsky says the method should also be useful with the burgeoning issue of algal blooms, to understand, for example, the processes by which they form, the microbial dynamics before and after a bloom, and specifically, whether runoff from livestock production in the Midwest is related to algal blooms in the Great Lakes, a question they’re investigating with the EPA.

— Read more in Eric A. Dubinsky et al., “Microbial source tracking in impaired watersheds using PhyloChip and machine-learning classification,” *Water Research* 105 (15 November 2016).

## PPE Selection Tool

Source: <http://pst.prometech.eu/>



One of the goals of the EU IFREACT project is to “develop a tool that allows end users and procurement staff to select the best PPE system for the mission of the first responder and the expected threat”. On this website you have access to two tools that may help you procure and use PPE ensembles.

### Procurement Tool

This tool should be used by national CBRN emergency mitigation authorities and /or first responder duty organisations for guidance and recommendations on what type of PPE ensemble to acquire and how such an ensemble should be purchased, stockpiled and used to mitigate the consequences of a CBRN and/or TICs event.

[Proceed to the procurement tool >>](#)

### First Responder Tool

This tool should be used by first responder organizations and/or emergency responder operation centres for guidance and recommendations on what type of PPE ensemble and how such an ensemble should be used in that particular emergency situation to mitigate the consequences of CBRN and/or TICs. It is based on the objective criteria and performance characteristics/specification of the ensembles as well as the exact circumstances of a particular incident.

[Proceed to the first responder tool >>](#)



Creteil University [UPEC] was the coordinator of the 3-year IF REACT project funded under the 7th Framework Programme for research, technological development and demonstration under the European Commission grant agreement no. 285034. The aim was to enhance the CBRN Personal Protective Equipment (PPE) worn by civilian first responders (FRs) across Europe, allowing them better capabilities and performance and greater confidence. The consortium comprised eleven partners from six countries: CBRN manufacturers: [NBC-Sys, Blücher, Bertin, Airbus Defence and Space], subject matter experts: [SUJCHBO Institute, Prometech, Hotzone Solutions, Falcon Communications] end users [DUZS and SAMU] and the Project Manager [Business Editing].

IFREACT developed a family of seven PPE ensembles. For the first time, industrialists worked simultaneously and jointly, offering modular and integrated solutions. Choices derived from different user-groups, procurement staff requirements, Advisory Board expert advice, field exercises and links with other European projects.

Tests conducted at the SUJCHBO laboratory assessed the efficiency of interfaces between three types of respiratory protection systems, five types of suits and two types of communication device and gave a physiological classification of the current and new ensembles. As expected, Saratoga air-permeable

technology offers a low burden. IFREACT PPE has a physiological strain index that is approximately half that of air-impermeable suits.

Capabilities and performance were assessed during a field trial at the CAZAUX French Defence air base. The new masks made of soft material are more comfortable and will suit civilian and military use. They can be worn with a hood attached to the suit or with a hood attached to the mask [the balaclava] and worn over the suit. The innovative one-sized overpressure hood offers wider vision and is particularly adapted to civilian users such as



Emergency Medical Services (EMS) who may wear glasses and a beard. EMS appreciate being seen and heard by victims. Both respiratory protection systems offer drinking capacities and have mounted communication devices. These devices include ear sets and a wireless HUD both paired with smartphones protected in special suit pockets. They prevent first responders from being isolated and give them greater confidence when operating at the scene. They enable civilian FRs to perform

hands free and to communicate between themselves and with the HQ. In the event where





the communication network is down, the reliability of audio, visual and text communications is provided by the AIRBUS Bubble.

The two-hour trials conducted at CAZAUX with different groups of volunteers—well trained and occasionally trained FRs—proved that there is practically no loss of capability while performing tasks in IFREACT ensembles during this length of time. This was a requirement of end-users in order to avoid frequent shift changes and to save human and equipment resources. FR could wear air-permeable suits during wet decontamination procedures.

All PPE protection factors comply with tasks in a contaminated warm area for a continuous exposure of 6 hours (spray protection, vapour, particles and aerosols).

Another IFREACT innovation is the miniaturized Bertin bio-collector which can be attached to the suit, with an immediate application of monitoring potential contamination in the case of the EBOLA epidemic. The IFREACT project also includes the development of a PPE selection tool that allows end users and procurement staff to select the best PPE system for the first responder's mission according to the expected threat through a smartphone application.

IFREACT developed prototypes in one size. The next steps, beyond the project, will be to contribute to the European civilian CBRN PPE standardisation work and to produce commercial ensembles within one year.

See Cazaux video: [http://www.dailymotion.com/video/x2hedey\\_projet-europeen-ifreact-vostfr\\_school](http://www.dailymotion.com/video/x2hedey_projet-europeen-ifreact-vostfr_school)

**EDITOR'S COMMENT:** I had the opportunity to closely examine the IFREACT PPE during the EU EDEN Live Demo drill that took place in Rome, Italy (at Gemelli Policlinico Emergency Department). It is well made and bears operational details and solutions that make FRs' life much easier. The most important of all is that the hood solution is ideal for hospital personnel and the light wear gear is quite comfortable to work with in adverse environments.







Double canisters

Smartphone pocket



Water camelback connector



Zipper

Name pocket







## BSX Announces Kickstarter for New LVL Band Wearable Hydration Sensor

Source: <http://www.dcrainmaker.com/2016/09/bsx-announces-kickstarter-for-new-lvl-band-wearable-hydration-sensor.html>



Sep 14 – Over the last month, BSX (maker of the [BSX Insight Muscle Oxygen/Lactate Threshold Sensor](#)) has slowly ousted their next product, which shifts away from the lactate threshold testing arena to focus on hydration. However, today they kicked those efforts into high gear with the launch of [their Kickstarter campaign](#) for the LVL Band wearable hydration sensor.



I've had a chance to talk quite a bit with BSX about their plans over the last month, in addition to getting a bit of a hands-on look at the size of the device with a non-active unit (more on that in a bit). Let's dive into it.

### What it is?

The LVL Band is designed to be part activity tracker, part hydration sensor. The idea

stemmed from an incident involving BSX founder Dustin Freckleton during medical school, which resulted in him having a stroke at the age of 24. Doctors at the time specified dehydration as the primary cause for the incident. That stroke resulted in a complete left side hemiparesis, meaning he couldn't wiggle his fingers, toes, or limbs. It'd take him three months to learn to walk again. While Dustin made a full recovery and went on to focus on the BSX Insight lactate threshold sensor, the hydration idea sat on the back burner.



The LVL Band tracks hydration, heart rate, sleep quality, steps, and calories burned. It measures hydration and heart rate using NIRS (Near Infrared Light), similar to the red light sensors that the company uses within their BSX Insight device. However, while there are elements of the existing Insight device in LVL, it contains additional wavelengths to detect the hydration aspects. Meanwhile, the other metrics (i.e. steps) are largely just captured using common accelerometers. Note that the LVL Band won't capture Insight metrics such as muscle oxygen levels. But the company says they're capable of measuring respiratory rate, blood oxygen, muscle oxygen, and lactate threshold down the road with the LVL Band, should they go in that direction and expand the capabilities of the device.

Now the previously mentioned sleep quality is an interesting element. Not because sleep quality hasn't been done before, but because BSX is claiming they can give you predictive sleep quality by evaluating your hydration state. Said differently: They believe they can tell you at dinner time if you'll wake up groggy the next morning. Whether or not they can take into an account an unexpected alcoholic beverage intake escalation on a Friday night at the club isn't clear.



The unit will show your current hydration state through a series of simple colors and levels on its OLED touch screen. The hydration levels on the mockups below being “Very Low”, “Low”, “Medium”, “High”: This is then reflected in the companion app, with suggestions on how to remedy it: It's well known that dehydration can lead to performance loss. Be that athletic performance, or just more



life-oriented performance like mood swings or weight management. For example, BSX will note that a 1-2% dehydration level can result in a 5.8% performance decline. Anyone who has done a hot weather endurance race can easily attest to the results of failed hydration strategies. So there's certainly demand there for such technologies.

The product [launched today on Kickstarter](#), and will set you back upwards of \$198, depending on which reward you select. The availability date is pegged at next June (2017).





**EDITOR'S COMMENT:** The first thing I thought when reading this article was "What if fine piece of equipment" for CBRNE First Responders!!! Very usefull to combat heat stress and dehydration hazard. Perfect fit with the new IFREACT PPE described above! (worn under the PPE and have the smartphone in the designated external pocket – **perhaps with the addition** of an automated alert emitted to those supervising operating troops).

## CBRND Research Forecast, Analysis and Supply Demand Report 2020

Oct 13 – The Global [CBRND Industry](#) report covers the present scenario and the growth prospects of the CBRND for 2016-2020. To calculate the market size, the report considers both the direct revenue and the indirect revenue of the vendors.

Chemical, biological, radiological, and nuclear (CBRN) security comprises of protective and preventive measures to combat situations that involve such perilous agents. CBRN security is a growing market, owing to the concerns regarding the protection of civilian lives and maintenance of economic stability. One of the primary reasons for the continuous demand for CBRN protection, detection, and decontamination equipment is the dual use of CBRN agents in everyday life.

The advancement in the fields of biotechnology, nuclear energy, and life sciences can significantly benefit humanity. However, such developments can also be a threat as they are used for hostile purposes, and to execute various instances of bio-terrorism. This makes it indispensable for scientists and the security community to constantly engage with each other, and develop methods to prevent or counter forms of CBRN terrorism.

Browse more detail information about CBRND at: <http://www.absolutereports.com/global-cbrnd-market-2016-2020-10336644>

The report provides a basic overview of the CBRND including definitions, classifications, applications and market Sales chain structure. The CBRND report enlists several important factors, starting from the basics to advanced market intelligence which play a crucial part in strategizing.

### CBRND Industry Opportunities:

With a purpose of enlightening new entrants about the possibilities in this market, this report investigates new project feasibility. Various details about the manufacturing process such as market drivers, impact of drivers, market challenges and impact of drivers and challenges, market trends, vendor landscape analysis and so on, is discussed in the report.

Get a PDF Sample of CBRND Market Research Report at:

<http://www.absolutereports.com/enquiry/request-sample/10336644>

## One person dead, six missing after explosion at German chemical plant

Source: <http://www.telegraph.co.uk/news/2016/10/17/explosion-at-german-chemical-plant/>

Oct 17 – At least one person was killed and six were seriously injured in an explosion at a chemical plant in Germany on Monday.

**Police said there was no indication the incident at the BASF complex in Ludwigshafen was terrorism-related, and they were treating it as an industrial accident.**

Six people were still missing several hours after a massive explosion ripped through the plant at 11.30am.



Rescue workers battled to contain a major fire set off by the blast, and firemen were among the missing. Residents of Ludwigshafen and the neighbouring city of Mannheim were advised to stay indoors, close all windows and switch off ventilation systems as smoke drifted across the area. Schools and nurseries were advised to keep children inside.

Some local residents reported breathing difficulties but a spokesman for BASF said air tests had indicated there was no danger.

"We have not been able to establish any threat to the population," said Uwe Liebelt, the plant's director.



An aerial view taken with a drone shows emergency services fighting a fire at the BASF plant site in Ludwigshafen Credit: Hares Shahid/EPA

The fire was still burning on Monday evening but was under control, a spokesman for the local fire department said.

**The cause of the accident was not immediately clear, but it appears to have been caused by work on a pipeline.**

Ludwigshafen is the headquarters of BASF, the largest chemical producer in the world. The company employs more than 110,000 people worldwide and 52,000 in Germany alone. It recorded sales of €70bn (£63bn) last year.

**The site of the explosion is a harbour used for the transport of highly flammable liquids and liquefied gases.**

Emergency services from across the region were called in to help contain the accident, including a fire boat which fought the blaze from the water. More than 160 firefighters were involved in the operation.

"The exact cause is not yet clear. We will of course do our utmost to determine it quickly," Mr Liebelt said.

## Daesh 'to Export Chemical Warfare to Europe, Asia, America' if Not Stopped

Source: <https://sputniknews.com/politics/201610181046461260-daesh-us-syria-chemical-weapons/>

Oct 18 – The international community is facing the increasing threat of chemical weapons proliferation, Vladimir Platov, an expert in Middle

Eastern affairs warns, referring to Daesh creating chemical stockpiles in both Syria and Iraq.



Daesh (ISIS/ISIL) may begin to use chemical weapons beyond the Middle East, smuggling the weapons of mass destruction (WMD) out of Syria and Iraq into Europe, Asia and America, Vladimir Platov, an expert in Middle Eastern affairs warned in his opinion piece for New Eastern Outlook. "Washington is recognizing the fact that ISIS (Daesh) has workshops specially equipped for the production of weapons of mass destruction, including chemical weapons. In particular, they have become particularly proficient in producing mustard gas (sulfur mustard) that is being put in conventional munitions like rockets and shells," Platov wrote.

Indeed, during the US Department of Defense's September press briefing, Colonel John L. Dorrian, the Spokesman for the Combined Joint Task Force, Operation Inherent Resolve, confirmed that Daesh "has... sort of a limited capability for chemical weapons" in Iraq. Earlier this year, CIA Director John Brennan confirmed that Daesh has the capability to produce chlorine and mustard gas. In an interview with the CBS News program 60 Minutes, Brennan stressed that the terrorist organization had already used chemical weapons. "We have a number of instances where ISIL (Daesh) has used chemical munitions on the battlefield," Brennan told the media outlet. In the light of this, the upcoming storm of Mosul, Daesh's Iraqi stronghold, would hardly be a walk in the park, the expert remarked, referring to the possibility of a chemical attack on the part of terrorists against the US-backed Iraqi armed forces. There is ample evidence that Daesh is producing WMDs and creating chemical stockpiles both in Iraq and Syria, Platov underscored. The expert recalled that Daesh had used shells filled with chlorine near the town of al-Kiyara, south of Mosul on August 23. In April, jihadists allegedly used mustard gas in the village of al-Jafra in the province of Deir ez-Zor. What is more embarrassing is that not only Daesh but also some "moderates" had been spotted using chemical weapons in Syria, he stressed. "On August 2, militants from the Harakat Nour al-Din al-Zenki terrorist group, described by Washington as a part of the 'moderate opposition', attacked the Salah al-Din District of the Syrian city of Aleppo with chlorine, killing at least seven civilians and leaving

dozens more severely injured," Platov emphasized.

Furthermore, in mid-September a Kurds militia source revealed that Daesh fighters used chemical weapons in artillery attacks in northern Aleppo. On September 28 Lt. Gen. Viktor Poznikhir, the first deputy chief of the Main Operational Directorate of the Russian General Staff told reporters that terrorist groups were "preparing provocative attacks by using chemical weapons on Syrian army positions and residential areas in the east part of Aleppo." Meanwhile, Western media sources continue to accuse Bashar al-Assad's Syrian Arab Army (SAA) of using chemical weapons against its civilians, regardless of the fact that Damascus had handed over all its toxic materials to the Organization for the Prohibition of Chemical Weapons (OPCW) by June, 2014. "The Persian Gulf monarchies and their 'influential sponsors' across the ocean have repeatedly demanded that the use of chemical weapons in Syria by ISIS (Daesh) be used to blame the Syrian army opposing them," Platov remarked, commenting on the issue. The Russian expert noted that, reportedly, materials for WMD had been smuggled into the region through the territory of Turkey.

**Indeed, in December 2015 Eren Erdem of the Turkish opposition Republican People's Party (CHP) told Russia Today that chemical weapon materials had been brought to Turkey and then assembled in Daesh camps located in Syria.** "Chemical weapon materials are being brought to Turkey and being put together in Syria in camps of ISIS [Daesh] which was known as Iraqi al-Qaeda [AQI] during that time," Erdem said. According to Platov, the situation may spin out of control, resulting in the spread of WMDs across Europe, Asia and even North America. Back in 2015 the European Parliament voiced its concerns about the increasing threat of WMD proliferation. "The European Union and its Member States must prepare for the possibility of a chemical or biological attack on their territory by the self-styled 'Islamic State' in Iraq and the Levant [Daesh]," the European Parliamentary Research Service (EPRS) report cautioned. "Several experts have warned that there is a genuine risk of ISIL/Daesh using





chemical, biological, radiological or even nuclear materials in the context of future attacks on European targets. It has been suggested that the group's next weapon of choice could, for example, be an improvised explosive device containing chemical or radioactive materials,"

the report stated. "Under these conditions, in the face of an impending threat of WMD terrorist attacks, the international community must unite in its efforts to put an end to these terrorist organizations and those groups affiliated with them," Platov concluded.

## U.S. expects Islamic State to wield chemical weapons in Mosul fight

Source: <http://www.reuters.com/article/us-mideast-crisis-iraq-chemicalweapons-idUSKCN12I2WZ>

Oct 18 – **The United States expects Islamic State to use crude chemical weapons as it tries to repel an Iraqi-led offensive on the city of Mosul, U.S. officials say, although adding that the group's technical ability to develop such weapons is highly limited.**

U.S. forces have begun to regularly collect shell fragments to test for possible chemical agents, given Islamic State's use of mustard agent in the months before Monday's launch of the Mosul offensive, one official said.

**In a previously undisclosed incident, U.S. forces confirmed the presence of a sulfur mustard agent on Islamic State munition fragments on Oct. 5, a second official said. The Islamic State had targeted local forces, not U.S. or coalition troops.**

"Given ISIL's reprehensible behavior and flagrant disregard for international standards and norms, this event is not surprising," the second official told Reuters, speaking on condition of anonymity, and using an acronym for Islamic State.

**U.S. officials do not believe Islamic State has been successful so far at developing chemical weapons with particularly lethal**

**effects, meaning that conventional weapons are still the most dangerous threat for advancing Iraqi and Kurdish forces - and any foreign advisers who get close enough.**

Sulfur mustard agents can cause blistering on exposed skin and lungs. At low doses, however, that would not be deadly.

Roughly 5,000 U.S. forces are in Iraq. More than 100 of them are embedded with Iraqi and Kurdish Peshmerga forces involved with the Mosul offensive, advising commanders and helping them ensure coalition air power hits the right targets, officials said. Still, those forces are not at the front lines, they added.

The International Organization for Migration's Iraq chief, Thomas Weiss, said on Tuesday he expected Islamic State militants to use Mosul residents as human shields and lent his voice to concerns about the dangers of chemical agents. The IOM had not managed to procure many gas masks yet, despite those risks, Weiss said from Baghdad.

"We also fear, and there has been some evidence that ISIL might be using chemical weapons. Children, the elderly, disabled, will be particularly vulnerable," Weiss said.

**EDITOR'S COMMENT:** While there is a lot of debate about IS using chemical weapons in the battle field there is not a single line discussing the possibility of using radiological materials (RDDs) as means of area access restriction – remember the 40kg of "uranium compounds" seized from the University of Mosul?

## Weapons of mass destruction threat to peace – Qatar

Source: <http://english.astroawani.com/world-news/weapons-mass-destruction-threat-peace-qatar-119842>

Oct 19 – The concept of strategic balance cannot be reached with the presence of weapons of mass destruction, but must rely instead on a country's success of allocating its capabilities to develop its people.



Qatar News Agency (QNA) reports that this was conveyed by Qatar's Sheikh Ahmed Mohammed Al-Thani at the UN General Assembly's first committee, Disarmament and International Security, Tuesday. According to Sheikh Ahmed, peace and stability cannot be reached in light of a race for obtaining arms. He stressed Qatar's unlimited support in facing the danger of weapons of mass destruction, especially in the Middle-East where the threat of having a terrorist group obtain such weapons exist. He said that the UN Security Council's adoption of resolution 1540 was part of the international community's efforts in restricting the spread of nuclear, biological and chemical weapons. The statement of the State of Qatar read that there was great concern when a report on Aug 24, conducted in cooperation with the UN, to determine the parties that used chemical weapons in Syria; showed that two chemical attacks were carried out in Syria. One was from a helicopter belonging to the Syrian regime and another attack that was by IS.

### Islamic State Burns Sulfur Stocks Near Mosul, Creating Hazard for Troops, Locals

Source: <http://www.wsj.com/articles/u-s-troops-in-iraq-don-gas-masks-as-islamic-state-sets-fire-to-industrial-waste-1477130101>

Oct 22 – **Islamic State militants set fire to sulfur stocks at a factory south of Mosul, the U.S. military said Saturday, creating a plume of noxious smoke that has drifted over a base with U.S. troops involved in the Iraqi offensive to retake the city and forcing some to put on gas masks as a precaution.**



People in the area affected by the smoke said it was difficult to breathe, burned their eyes and stung their noses and throats when they inhaled it, and burned any exposed wet skin as the cloud intermittently blew over the area depending on winds.

Sulfur dioxide from burning stocks is highly toxic

and can be lethal. It can also quickly cause shortness of breath and coughing, according to a chemical fact sheet from Sultran, a Canadian rail company that ships large quantities of sulfur.

Militants set the residue alight at the Mishraq sulfur plant on Thursday as a tactical measure to slow Iraqi military advances in the offensive to recapture Mosul—Islamic State's last remaining stronghold in Iraq. **The toxic cloud mixed with choking black smoke already filling the air from oil-well fires started two months ago and still burning in the town of Qayara.** The combination affected the nearby U.S. base as shifting winds blew the smoke toward the troops.



Troops weren't ordered to put on their masks, but many chose to do so on their own. Commanders have told troops in areas affected by smoke to limit outdoor activity, according to a release from the coalition. "Daesh ignited toxic sulfur residue stored at al-Mishraq in an attempt to disrupt the ISF [Iraqi Security Forces'] advance," said Col. John Dorrian, a spokesman for the U.S.-led coalition in Iraq, using another name for Islamic State. He added that the military is now assessing the risk to U.S. troops because of the multiple fires.

The U.S.-led coalition provided approximately 24,000 gas masks to Iraqi and Peshmerga forces in the run up to the Mosul operation, according to a statement from the coalition.

"The enemy has used chemical weapons in the past," said Maj. Gen. Gary J. Volesky, a top general in Iraq. "Force protection is my number one priority here."



On Saturday afternoon, Iraqi state television reported that specialized teams put the fire out, though some smoke was still coming from the stocks. U.S. military officials said the fires had not yet been extinguished, a process that could take two to three days.

Islamic State set alight a handful of oil wells in Qayara two months ago and they have been burning steadily since then. The town now lives under a black cloud and a slurry-like liquid runs in the streets.

Col. Dorrian said the military has sampled air supplies to determine how dangerous the smoke has been. "This is yet another act that demonstrates Daesh's blatant disregard for the local population," Col. Dorrian said.

## London City Airport – CS gas discharge

Source: <http://news.sky.com/story/london-city-airport-reopens-after-dozens-treated-over-chemical-scare-10626683>

Oct 22 – **CS gas spray found after London City Airport evacuated Officers are investigating a "chemical incident" that left dozens ill and closed the airport for several hours.**



Police investigating a "chemical incident" at London City Airport have found suspected CS gas spray.

**Paramedics treated 27 and took 2 people to hospital** after the airport was closed and evacuated on Friday afternoon [21 Oct 2016]. About 500 people were told to leave the airport and travelers were told to expect "long delays". Firefighters and police wearing protective equipment carried out 2 complete sweeps of the airport building and declared the incident over. But they failed to find anything that might have caused it.

However, a later Met Police statement said: "A subsequent search of the airport led to the discovery of what is believed to be a CS gas spray.

"Whilst the cause of the incident has not yet been confirmed, officers are investigating whether it was the result of an accidental discharge of the spray.

"Enquiries continue. This is not being treated as a terrorist-related incident. At this early stage officers believe that the spray may have been discarded by a passenger prior to check-in."



Scores of passengers were moved on to the tarmac outside the terminal building.

London Ambulance's assistant director of operations, Paul Gibson, said: "We were called at 4.11pm to reports of an incident at London City Airport.

"We sent a number of resources to the scene including 2 single responders in cars, 4 ambulance crews, an incident response officer and our Hazardous Area Response Team (medics specially trained to treat people in hazardous situations)."

London City Airport advised people due to fly to check with their airlines for latest flight information.

Incoming planes from destinations such as Frankfurt, Amsterdam, Belfast City and Paris had to be diverted to other airports.





The airport later tweeted: "Airport has now reopened. We thank passengers for their

patience, access to terminal will be staggered and disruption to flights expected.



### About CS

[CS is a cyanocarbon and is the primary component of a product commonly called tear gas. Tear gas or CS gas is known as a riot control agent. CS is also known as 2-chlorobenzalmalononitrile or called o-chlorobenzylidene malononitrile with a chemical formula:  $C_{10}H_5ClN_2$ .

Effects of exposure to this compound through its most common form, tear gas, range from an irritation of eyes and mucous membrane to vomiting, and are often over within an hour. However, research has shown that people with prior conditions such as asthma, cardiovascular disease, and hypertension may experience longer lasting effects and a worsening of their prior conditions. While extremely uncommon, exposure to CS under the right conditions, such as a confined space, a person with pre-existing conditions, and a strong concentration of the compound, can be fatal.

**As 2-chlorobenzalmalononitrile is a solid at room temperature, not a gas, a variety of techniques have been used to make this solid usable as an aerosol:**

- Melted and sprayed in the molten form.
- Dissolved in organic solvent.
- CS<sub>2</sub> dry powder (CS<sub>2</sub> is a siliconized, micro-pulverized form of CS).
- CS from thermal grenades by generation of hot gases.

### Adverse Health Effects

**Most Common Effects:** CS, when used in its most common form of aerosol, causes an irritation of the mucous membranes of the eye, nose, throat, and stomach. The effect of exposing these membranes to CS include tearing, conjunctivitis, uncontrolled blinking, headache, and a burning sensation. Other effects include vomiting and redness of the skin.

These effects normally dissipate within an hour of exposure, however several studies have shown oral and respiratory irritation to last for a month following initial exposure.

**Severe Effects:** In addition to the common effects of CS exposure, several cases have been recorded that detail more severe, longer lasting effects of the chemical compound.

**Bullous Dermatitis:** Extreme blistering and inflammation of the skin. This symptom is most often seen in people who have experienced repeated exposures to CS. Researchers believe that people can develop a contact allergy after their 1st exposure to CS, making the effects in future exposures more intense and long lasting.



**Vocal Cord and Throat Damage:** In one case, when the subject was exposed to high levels of CS gas in a confined area for 10 seconds, serious health conditions took 5 weeks to fully clear up. The vocal cords were swollen and a crust had built up in the trachea causing respiratory problems. Researchers expect severity and duration of these effects to increase with longer exposures. Longer lasting effects such as sleep apnea and loss of breath after exercise or strenuous work were experienced by several people months after exposure.

#### Treatment

**If exposed to CS, the 1st thing a person should do is move to fresh air.** The longer you inhale the gas for the longer the effects will last, with the potential for harsher effects to occur. Watch breathing as shortness of breath may occur. If this lasts for over 60 seconds, supplemental oxygen may be necessary. With eye exposure, it is necessary to wash eyes with room temperature water or saline solution for 15 minutes. If irritation continues consult a doctor.

While this was not serious in terms of life, it could be a trial for something else, or it could be a bizarre accident.

**EDITOR'S COMMENT:** A similar incident recently happened at Rhodes International Airport (Rhodes Island, Greece – read related article in this chapter). The thing is that if a personal CS canister is discharged in a confined space (i.e, inside a tent or a room as we usually do during training under PPE) the adverse effects might be very intense. But in a big high ceiling area as usually check-in areas are, adverse effects should be limited to eye irritation or mild cough unless very close to discharge point or suffering from respiratory diseases like asthma or COPD. Incidents like these bring into surface the problem of checking passengers upon arrival to the airport and before entering airport's premises. **BUT:** almost all commercial products are 100mL and if properly disguised fit well to traveling regulations in all airports.

## Argon receives first Middle East CBRN PlumeSIM order

Source: [http://www.asdnews.com/news-68188/Argon\\_receives\\_first\\_Middle\\_East\\_CBRN\\_PlumeSIM\\_order.htm](http://www.asdnews.com/news-68188/Argon_receives_first_Middle_East_CBRN_PlumeSIM_order.htm)

The first PlumeSIM order for the Middle East region has been received by Argon, and represents a significant milestone in the company's growth in this important part of the world.



In addition to PlumeSIM, the contract includes a number of training simulators, and follows an earlier delivery of Chemical Warfare training simulators to the same customer, the use of which successfully supported an important national CBRN exercise resulting in further investment in Argon simulators to expand this important training capability.

PlumeSIM is a modular CBRN / HazMat training system facilitating the merge of Live and Virtual training for Table Top exercises while also providing a world leading dedicated Live CBRN training capability. The systems powerful After Action Review reporting system enables high quality learning outcomes to be achieved.

PlumeSIM can also be integrated with third party Live and Virtual training systems to further enhance CBRN training capabilities for Military, First Responder and Energy organisations.

Argon has delivered PlumeSIM to a number of the world's leading CBRN training facilities and specialist agencies including the USA, UK, Canada, Sweden, Germany, Austria and Portugal and is fast becoming the "CBRN training system of choice".



## Illness 'Garage scientists' with access to £100 gene-editing kits pose dangerous threat to society, experts warn

Source: <http://www.mirror.co.uk/science/garage-scientists-access-100-gene-8947438>

Sep 30 – Amateur "garage scientists" toying with powerful gene editing technology could pose a future danger that should not be ignored, experts have warned.

Kits that make it possible to "cut and paste" DNA in living organisms such as yeast and bacteria can already be bought on the internet for around £100.

Using the new technology, [known as CRSPR-Cas9](#), does not require a high level of scientific knowledge, raising concerns that malicious "biohackers" or careless enthusiasts might



create something potentially harmful.

The issue was raised in the first part of a major investigation of gene editing by the Nuffield Council on Bioethics, an independent body that explores ethical questions raised by advances in biology and medicine.

In its review, the Nuffield Council pointed out that the "comparatively low cost, ease of use and availability" of online gene editing kits meant they were accessible to unregulated amateur users.

A report summary added: "These may include DIY 'garage' scientists, school and undergraduate students, and others with an interest in biological research and the possibilities - whether potentially beneficial or harmful - raised by genome editing."

The report said that since 2014, CRSPR-Cas9 gene editing had been used in a synthetic biology contest for school and university students called the International Genetically Engineered Machine (iGEM) competition.

Last year, a DIY kit that could make Escherichia coli (E.coli) bacteria resistant to the antibiotic

streptomycin was on sale for 140 US dollars (£107).

Hugh Whittall, director of the Nuffield Council for Bioethics, said: "There is no evidence that we've seen that there are people with things going on in their garages, but ... this is one of the things that we need to be aware of, be conscious of the possibility.

"It goes back to this question of whether the control mechanism in terms of the supply of the kits and materials is adequate."

Nuffield Council member Karen Yeung, Professor of Law and director of the Centre for Technology, Ethics and Law at King's College London, said: "One of the features of this technology is it makes it more accessible to a broader range of users.

"This however has the knock on effect that it may be more difficult to keep a watching brief and monitor effectively what's actually being done in these areas.

"We identify that as a potential area of concern." CRSPR-Cas9 was introduced in 2012 and is rapidly transforming biological research.

The system uses certain proteins that allow DNA to be cut and edited at precise, targeted locations.

Human reproduction and livestock farming were identified as two key areas of concern by the Nuffield Council. Both will be the subject of further inquiries by dedicated working parties.

In the field of human reproduction, gene editing has the potential to eliminate inherited diseases such as cystic fibrosis.

There are more than 4,000 known single gene conditions that are thought to affect around 1% of births worldwide.

But [producing babies from embryos](#) whose inherited DNA has been altered is illegal in the UK. Critics point to the dangers of irreversible changes being passed onto future generations and the possible creation of "designer babies".

Prof Yeung, who will chair the Nuffield Council working party on reproductive applications, which meets for the first time next week, said: "It is only right that we





acknowledge where this new science may lead and explore the possible paths ahead ... "

Genome editing in farm animals has [already been proposed](#) for pigs, sheep, cattle and chickens, raising questions of food safety and animal welfare.



The first five sheep bred using CRISPR-Cas9 technology have come out looking "like cows" and "spotty dogs"

Animals whose genes have been edited may fall into a grey legal area because it is not clear that their meat, eggs or milk would be classified as genetically modified food.

Professor John Dupre, from the University of Exeter, who will chair the livestock working

party, pointed out there was no way of distinguishing meat from a gene-edited animal and one whose genes had not been edited.

"Genome editing makes verification difficult or impossible," he said.

Potential applications of the technology included pigs protected against swine flu, chickens that only produced female offspring for egg production, and hornless cattle that could safely be kept in confined spaces.

Dr Andy Greenfield, from Oxford University, who chaired the review working group, dismissed suggestions that farmers might secretly make use of gene editing technology.

He joked: "A kind of evil Old Macdonald? There are entry barriers. It's not that it's so easy to do that you can just have a shed at the end of the field.

"It would be difficult to do this secretly.

It's not so quick and easy that it could be happening across Suffolk."

Dr Greenfield was most concerned about "frivolous" use of CRISPR-Cas9 gene editing.

"We don't really want to encourage frivolous cosmetic uses of a powerful technology when we have real needs right now," he said.

He added: "I don't worry about the monsters."

## Genome editing: an ethical review

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## Biological Dual-Use Research and Synthetic Biology of Yeast

By Cirigliano, A., Cenciarelli, O., Malizia, A. et al.

Sci Eng Ethics (2016). doi:10.1007/s11948-016-9774-1

Source: <http://link.springer.com/article/10.1007%2Fs11948-016-9774-1>

In recent years, the publication of the studies on the transmissibility in mammals of the H5N1 influenza virus and synthetic genomes has triggered heated and concerned debate within the community of scientists on biological dual-use research; these papers have raised the awareness that, in some cases, fundamental research could be directed to harmful experiments, with the purpose of developing a weapon that could be used by a bioterrorist. Here is presented an overview regarding the dual-use concept and its related international agreements which underlines the work of the Australia Group (AG) Export Control Regime. It is hoped that the principles and activities of the AG, that focuses on export control of chemical and biological dual-use materials, will spread and become well known to academic researchers in different countries, as they exchange biological materials (i.e. plasmids, strains, antibodies, nucleic acids) and scientific papers. To this extent, and with the aim of drawing the attention of the scientific community that works with yeast to the so called Dual-Use Research of Concern, this article reports case studies on biological dual-use research and discusses a synthetic biology applied to the yeast *Saccharomyces cerevisiae*, namely the construction of the first eukaryotic synthetic chromosome of yeast and the use of yeast cells as a factory to produce opiates. **Since this organism is considered harmless and is not included in any list of biological agents, yeast researchers should take simple actions in the future to avoid the sharing of strains and advanced technology with suspicious individuals.**

## Global Biodefense Market Driven by Innovations in Upcoming Biological Agents, Or Deploys Biological Weaponry

Source: <http://www.medgadget.com/2016/09/global-biodefense-market-driven-by-innovations-in-upcoming-biological-agents-or-deploys-biological-weaponry.html>

Sep 27 – Biodefense is a measure to combat the potential effects of bioterrorism that utilizes biological agents, or deploys biological

virulent, or to enhance their potential to cause infection, or to make them drug resistant. These biological agents can be transmitted through



weaponry. Bioterrorism is a deliberate release of biological agents such as bacteria, virus, germs or toxins which may be in natural or human modified form, in order to make them more

an attack on military targets is concerned with preparing military personnel ready to respond to bioterrorism.

water, air, food or from person to person. Biodefense is usually utilized in two ways, either as a defense against an attack on a military target or civil population. Defense against an attack on a civilian is largely based on the detection and methods by which casualties and loss of water or food can be minimized. Biodefense against



The global biodefense market is witnessing an admirable growth due to the disease surveillance mission which has become increasingly important with the fear of bioterrorism. After the attack of September 11, 2001 came the subsequent outbreak of anthrax, spores of which were mailed through the U.S. postal system. These events brought into notice that all levels of government need to focus on improving public health preparedness and to improve the response time for the next disaster. Bioterrorism preparedness funding has enabled the Public Health Services to significantly enhance the reach of its surveillance activities, thus more effectively monitor the community's health. After the incidence, the focus was shifted to the development of tests and procedures to detect and identify bio threat agents. Recent outbreak in the form of Ebola and nuclear crisis in Japan are expected to significantly drive the growth of the biodefense market.

In terms of geography, North America followed by Europe accounted for the largest share of biodefense market due to enhanced lab capabilities, and improved activity for implementing rapid health alert system. Asia Pacific is expected to be a prospective biodefense market due to the rising adoption rate of precise analytical instruments and highly developing biotechnology industry. Moreover, other regions such as the Middle East and Latin America are expected to be the potential market in the near future due to expansion of major biotechnology players in these regions.

A new report by Transparency Market Research briefs readers about the global biodefense market and also lists key players operating in the market. Biodefense combats possible effects of bioterrorism that deploys biological weaponry or uses biological agents. Biodefense is used as a protection against attack on civil population or on a military target. The biological agents are transmitted through food, water, and air. Biodefense is used to prepare the military personnel to fight bioterrorism.

The report, titled "Biodefense Market – Global Industry Analysis, Size, Share, Growth, Trends and Forecast 2015 – 2023," briefs readers about various types of biological agents. Category A biological agents have a high death rate, are

contagious, and carry a high impact on people. Category A biological agents can be anthrax, smallpox, ebola, botulism, bubonic plague, and tularemia. Category B biological agents are comparatively easy to spread and carry low mortality rate. Category C biological agents are easily available, easily produced, and carry high mortality rate.

The report highlights a few techniques used for the identification and commercial detection of biological threat agents. Some of the techniques listed in the report are manual biological tests, immunological detection devices, automated biochemical tests, bioluminescence detection, and nucleic acid detection via quantitative PCR. Key companies are working on developing new technologies in the market to capture a larger share in the years to come. Some of the developing technologies listed in the report are biochemical detection, immunological detection, tissue and cell-based detection, chemical and physical detection, and nucleic acid detection.

Alnylam Pharmaceuticals, Dynavax Technologies, Inc, Emergent BioSolutions, SIGA Technologies, PharmAthene, Inc., Acambis plc, Evogen, Inc., and Human Genome Sciences are some of the key companies listed in the report by analysts. Key players are expecting a tough competition from the new entrants. However, with mergers and acquisitions, leading organizations are expected to maintain their dominance throughout the forecast period.

By region, the global biodefense market is divided into North America, Asia Pacific, Europe, and Rest of the World. As per the findings of the report, at present, the global biodefense market is dominated by North America. Europe is currently the second largest market in the global biodefense market. North America is expected to maintain its dominance owing to improved lab capacities. Over the past few years, there have been improvements in the implementation of rapid health alert systems. This is also predicted to propel the North America biodefense market in the near future. The expansion of biotechnology companies is likely to benefit the Middle East and Latin America markets.





## Slowing the spread of infectious diseases

Source: <http://www.homelandsecuritynewswire.com/dr20161004-slowing-the-spread-of-infectious-diseases>

Oct 04 – Outbreaks of infectious diseases such as Zika increasingly threaten global public health. Scientists expect five such new diseases to emerge each year.

To find out whether our interaction with the environment is somehow responsible, the Ecology and Evolution of Infectious Diseases (EEID) program — a joint effort of the National Science Foundation (NSF), National Institutes of Health (NIH), and the U.S. Department of Agriculture (USDA) — has awarded \$16.6 million in new grants.

### Rapid response

“Our ability to rapidly respond to disease outbreaks requires a basic understanding of how pathogens spread and evolve,” says Sam Scheiner of NSF’s Directorate for Biological Sciences and EEID program officer at NSF. “The EEID awards provide that broad knowledge by addressing infectious diseases in humans, in agricultural and wildlife animals, and in plants. They also enhance our capacity for response by building international collaborations and through extensive student training.”

The NSF [says](#) that EEID projects allow scientists to study how habitat destruction, invasions of non-native species, pollution, and other large-scale environmental events alter the risks of emergence of viral, parasitic and bacterial diseases in humans and other animals.

Researchers funded by EEID advance basic theory related to infectious diseases, and apply that knowledge to improve scientists’ understanding of how pathogens spread through populations at a time of increasing global change.

“Predicting, controlling, and preventing infectious disease threats requires multi-disciplinary research and international collaboration,” says Christine Jessup of NIH’s Fogarty International Center. “Through this unique and long-standing multi-agency partnership, NIH continues to support disease ecology research focused on threats to human health, including research in resource-poor countries, with the goal of fostering locally-relevant solutions.”

### Current, future threats

This year’s EEID awardees conduct research on such subjects as: disease transmission in migratory birds along the Palearctic-African flyway; transmission networks and their implications for bee disease; the disease leishmaniasis in humans, dogs and sandflies in peri-urban Brazil; multi-species interactions in the microbiomes of plants, such as the grass tall fescue; and the discovery and characterization of viruses in primates, rodents and bats.

“The National Institute of Food and Agriculture is a key supporter of extramural research on food safety and security,” says Sonny Ramaswamy, director of USDA’s National Institute of Food and Agriculture. “Through our partnership with the Ecology and Evolution of Infectious Diseases program, NIFA is supporting cutting-edge research that ultimately can help American farmers combat infectious diseases that affect the health of crops and livestock animals.”

Adds Yair Rotstein, executive director of the U.S.-Israel Binational Science Foundation, which is also supporting this year’s awards: “Infectious diseases don’t recognize countries’ borders. Research on their eradication is therefore likely to benefit greatly from international cooperation. The U.S.-Israel Binational Science Foundation is proud to fund the Israeli scientist looking into the role of migratory birds in the spread of infectious diseases, demonstrating the importance of cross-border cooperation.”

### 2016 EEID Awards

#### NSF-funded

- Jonathan Epstein, Ecohealth Alliance Inc., [RCN: EcoHealth Net 2.0: A One Health approach to disease ecology research & education](#)
- Wayne Getz, University of California, Berkeley, [US-Israel Collab: Pathogens take wings: disease transmission in migratory birds along the Palearctic-African flyway](#)



- Kurt Vandegrift, Pennsylvania State University, University Park, [The community ecology of viromes: Virome assembly and pathogen transmission in a changing landscape](#)

**NIH-funded**

- Janis Antonovics, University of Virginia, [Ecology and evolution of transmission mode: vector and aerial transmission in anther-smut](#)
- Scott McArt, Cornell University, [Transmission networks in trait-based communities: implications for bee disease](#)
- Jacob Oleson, University of Iowa, [Epidemic modeling framework for complex, multi-species disease processes and the impact of vertical and vector transmission: A study of Leishmaniasis in Peri-Urban Brazil](#)

**USDA-funded**

- Charles Mitchell, University of North Carolina at Chapel Hill, [Multispecies interactions in the microbiome: dynamic responses of parasite individuals, populations, and communities](#)

## Experimental Zika Virus DNA Vaccines Protective in Monkeys

K. Dowd, et al. *Rapid Development of a DNA Vaccine for Zika Virus*. *Science* DOI: 10.1126/science.aai9137 (2016).

Source; <https://www.domesticpreparedness.com/updates/experimental-zika-virus-dna-vaccines-protective-in-monkeys/>

Sep 29 – **Two experimental Zika virus DNA vaccines developed by National Institutes of Health (NIH) scientists protected monkeys against Zika infection after two doses, according to a study published in Science.** One of those vaccines is being evaluated in a Phase 1 human trial now under way in three U.S. locations to evaluate the vaccine's safety and ability to generate immune responses in people.

Most Zika infections are asymptomatic or cause a mild illness lasting about a week. In addition, Zika virus infection during pregnancy can affect the fetus and lead to serious birth defects, especially those involving the developing brain. There are no vaccines or specific therapeutics to prevent or treat Zika virus disease. Scientists from the Vaccine Research Center within NIH's National Institute of Allergy and Infectious Diseases (NIAID) developed the experimental vaccines using circular DNA engineered to produce a particle mimicking the shape of the Zika virus. The experimental vaccines, which do not contain infectious material and thus cannot cause Zika infection, are similar to a vaccine the researchers [have tested](#) against West Nile virus--part of the same virus family as Zika.

In their study, the researchers vaccinated groups of rhesus macaques using the two different experimental Zika DNA vaccines in different doses. They then exposed the monkeys to an infectious dose of Zika virus. Both experimental vaccines were highly effective when given in two doses. One of the vaccines (VRC5288) is being tested in a Phase 1 clinical trial under way in volunteers in Bethesda, Maryland, Baltimore and Atlanta. If the Phase 1 results are favorable, NIAID plans to initiate a Phase 2 trial in Zika-endemic countries in early 2017. The second vaccine (VRC5283) is awaiting a Phase 1 clinical trial start date.

## A LOT OF ANTHRAX OUT THERE... !?

## Anthrax outbreak kills 25 cattle in the Northeast of France

Source: <http://outbreaknewstoday.com/france-more-animal-anthrax-in-moselle-department-69513/>  
<http://outbreaknewstoday.com/anthrax-kills-19-cattle-in-northeast-france-28051/>

Aug 21 – Almost 25 cattle died from anthrax in farms in Moselle. According to the Moselle prefecture and confirmed by ANSES (National Health Security Food Agency), a vaccination campaign on cattle and sheep has commenced. There is no threat to people.



## Siberian anthrax outbreak still ongoing due to the permafrost melting

Source 1: <http://www.abc.net.au/news/2016-08-11/scientists-warn-anthrax-just-one-threat-as-russian-permafrost-m/7720362>

Source 2: <http://www.bbc.com/news/world-europe-36951542>

Aug 11 – 23 confirmed cases of Anthrax and another 90 people hospitalised for verifications have been recorded in Siberia to date. The melting of permafrost might have unearthed the corpses of some reindeer dead for many years, the government is adopting several measures in order to prevent a further spread.

## Anthrax outbreak hit separate farms in the Östergötland region

Source: <http://www.thelocal.se/20160802/anthrax-outbreak-kills-nine-animals-in-sweden>

Aug 02 – Eight cattle and a horse on different farms died due to an anthrax outbreak. Sweden's National Veterinary Institute are currently working on vaccinating livestock and tracing the source of the infection.

## Anthrax – Zambia (hippopotamus; human)

Source: <https://www.lusakatimes.com/2016/10/12/3-people-contracts-anthrax-chama-muchinga-province/>

Oct 12 – Three people have been confirmed to have anthrax, which has broken out in Chama district of Muchinga Province. Chama district commissioner Josphat Lombe said that this was from 53 people that were affected by the disease. Mr Lombe said that according to the Ministry of Health in the district, 235 people were believed to have eaten hippo meat.

He said that 18 hippos from Luangwa River were reported to have died from anthrax which was eventually transmitted to humans after eating their meat. Mr Lombe said that a task force comprising of officers from Ministry of Health, Department of National Parks and Wildlife, and Ministry of Livestock and Fisheries has been formed to monitor the situation.

He noted that that it was unfortunate that some people have kept some meat from the affected hippos and were reluctant to surrender it to government so that it could be destroyed. Mr Lombe further revealed that officers have been deployed along the Luangwa River to stop people that were still trying to get their hands on the dead hippos. He has advised people in Lundazi and Chipata districts [Eastern province] not to buy bush meat which does not have valid papers from the Department of National Parks and Wildlife.



## Anthrax – India (elephant calf)

Source: <http://www.thehindu.com/news/national/other-states/elephant-calf-dies-of-anthrax/article9224314.ece>

Oct 15 – An elephant calf died of anthrax in the Sanasole cashew forest on the foothills of Similipal sanctuary [Mayurbhanj district, Odisha], officials said on [Sat 15 Oct 2016]. The carcass was located last evening with blood oozing out of its mouth, said Arun Kumar Patra, Assistant Conservator of Forest (ACF) of Baripada forest division.

The calf died of anthrax and the cause of the death was ascertained after [a necropsy], he said. A herd of elephants had strayed away from the Similipal sanctuary area last week and the animals were seen roaming in the nearby areas. The calf which succumbed to anthrax was a member of the herd. The mother of the calf was seen guarding the carcass when the forest officials visited the spot, the ACF said.





The [necropsy] was carried out after the guarding mother left the carcass this morning [15 Oct 2016]. On [10 Sep 2016], a female elephant died of anthrax in Gudugudia range under Karanjia forest division, officials said.

## **Anthrax – Italy (Sicily – bovine)**

Source: <http://www.cataniatoday.it/cronaca/allarme-carbonchio-ematico-randazzo-bronte-mucche-catania-17-ottobre-2016.html>

Oct 17 – The local press reports that 15 cows have died because of anthrax, on grazing land between Bronte and Randazzo, province of Catania, Sicily, Italy. In fact, the 1st warning came from the discovery of a dead cow seemingly killed by anthrax, at Contrada Saletto of Randazzo.

## **58 anthrax cases recorded among people in eastern Zambia**

Source: <http://www.globaltimes.cn/content/1010782.shtml>

Oct 11 – Authorities said 58 cases of people suffering from anthrax have been recorded in eastern Zambia's Chama district, state media has reported.

Minister of Health Chitalu Chilufya said the affected people are currently undergoing treatment and added that no deaths have been recorded, according to the Zambia Daily Mail on Monday.

"We have not recorded any death as of now, but I can confirm that currently there are a total of 58 cases of people suffering from the disease and responding well to treatment and have been confined," he said. Anthrax broke out in the district among hippos in September with 44 animals affected but the disease was not recorded among human beings.

People in the district have since been urged to desist from eating meat of dead animals such as hippos and buffaloes, adding that the dead animals have been a source of the outbreak.

A team of health experts is currently in the district in order to bring the outbreak under control.

## **Anthrax – Russia (reindeer – ecology)**

Source: <https://www.scientificamerican.com/article/as-earth-warms-the-diseases-that-may-lie-within-permafrost-become-a-bigger-worry/>

Oct 17 – **As earth warms, the diseases that may lie within permafrost become a bigger worry. Scientists are witnessing the theoretical turning into reality: infectious microbes emerging from a deep freeze.**

This past summer [2016] anthrax killed a 12-year-old boy in a remote part of Siberia. At least 20 other people, also from the Yamal Peninsula, were diagnosed with the potentially deadly disease after approximately 100 suspected cases were hospitalized. Additionally, more than 2300 reindeer in the area died from the infection. The likely cause? Thawing permafrost. According to Russian officials, thawed permafrost -- a permanently frozen layer of soil -- released previously immobile spores of *Bacillus anthracis* into nearby water and soil and then into the food supply. The outbreak was the region's first in 75 years.

**Researchers have predicted for years that one of the effects of global warming could be that whatever is frozen in permafrost -- such as ancient bacteria -- might be released as temperatures climb.** This could include infectious agents humans might not be prepared for, or have immunity to, the scientists said. Now they are witnessing the theoretical turning into reality: infectious microorganisms emerging from a deep freeze.

Although anthrax occurs naturally in all soil and outbreaks unrelated to permafrost can occur, extensive permafrost thaw could increase the number of people exposed to anthrax bacteria. In a 2011 paper published in *Global Health Action*, co-authors Boris A Revich and Marina A Podolnaya wrote of their predictions: **"As a consequence of permafrost melting,**



**the vectors of deadly infections of the 18th and 19th centuries may come back, especially near the cemeteries where the victims of these infections were buried."**

And permafrost is indeed thawing -- at higher latitudes and to greater depths than ever before. In various parts of Siberia the active layer above permafrost can thaw to a depth of 50 centimeters [about 20 in] every summer. This summer [2016], however, there was a heat wave in the region, and temperatures hovered around 35° C [95 deg F] – 25° C [45 deg F] warmer than usual. The difference possibly expanded or deepened the thaw and mobilized microorganisms usually stuck in rigid earth. Although scientists have yet to calculate the final depth, they postulate that it is a number that has not been seen in almost a century. Permafrost thaw overall could become widespread with temperatures only slightly higher than those at present, according to a 2013 study in *Science*. Heat waves in higher latitudes are becoming more frequent as well.

What thawing permafrost could unleash depends on the heartiness of the infectious agent involved. A lot of microorganisms cannot survive in extreme cold, but some can withstand it for many years. "*B. anthracis* are special because they are sporulating bacteria," says Jean-Michel Claverie, head of the Mediterranean Institute of Microbiology and a professor at Aix-Marseille University in France. "Spores are extremely resistant and, like seeds, can survive for longer than a century."

**Viruses could also survive for lengthy periods.** In 2014 and 2015 Claverie and his colleague Chantal Abergel published their findings on 2 still infectious viruses from a chunk of 30 000-year-old Siberian permafrost. Although *Pithovirus sibericum* and *Mollivirus sibericum* can infect only amoebas, the discovery is an indication that viruses that infect humans -- such as smallpox and the Spanish flu -- could potentially be preserved in permafrost.

Human viruses from even further back could also make a showing. For instance, the microorganisms living on and within the early humans who populated the Arctic could still be frozen in the soil. "There are hints that Neanderthals and Denisovans could have settled in northern Siberia [and] were plagued by various viral diseases, some of which we know, like smallpox, and some others that might have disappeared," Claverie says. "The fact that there might be an infection continuity between us and ancient hominins is fascinating -- and might be worrying."

Janet Jansson, who studies permafrost at the Pacific Northwest National Laboratory in Washington State [USA], is not worried about ancient viruses. Several attempts to discover these infectious agents in corpses have come up empty, she notes. She does advocate, however, for further research to identify the wide range of permafrost-dwelling organisms, some of which could pose health risks. To accomplish that goal, she and others are using modern molecular tools -- such as DNA sequencing and protein analysis -- to categorize the properties of unknown microorganisms, sometimes referred to as microbial dark matter.

The likelihood and frequency of outbreaks similar to the one in Siberia will depend on the speed and trajectory of climate change. For instance, **it is possible that another heat wave will expose the carcasses of animals infected by anthrax**, Revich says. "The situation on the Yamal Peninsula has shown that the risk of the spread of anthrax is already real," he adds.

In effect, infectious agents buried in the permafrost are unknowable and unpredictable in their timing and ferocity. Thus, researchers say thawing permafrost is not our biggest worry when it comes to infectious diseases and global warming. The more immediate, and certain, threat to humans is the widening geographical ranges of modern infectious diseases (and their carriers, such as mosquitoes) as the earth warms. "We now have dengue in southern parts of Texas [USA]," says George C Stewart, McKee Professor of Microbial Pathogenesis and chair of the department of veterinary pathobiology at the University of Missouri [USA]. "Malaria is seen at higher elevations and latitudes as temperatures climb. And the cholera agent, *Vibrio cholerae*, replicates better at higher temperatures."

Unlike the zombie microbes lurking in the permafrost, modern spreading diseases are more of a known quantity, and there are proved ways to curb them: mapping trends, eliminating mosquito-breeding sites, and spraying insecticides. Of course, dramatically lowering fossil-fuel emissions to combat climate change could tackle both threats -- the resurgence of ancient and deadly pathogens and the widening ranges of infectious diseases -- in one shot.





## Single-Dose Anthrax Vaccine Nasal Spray Clinical Trial

Source: <https://globalbiodefense.com/2016/08/01/single-dose-anthrax-vaccine-nasal-spray-clinical-trial/>

Aug 01 – An anthrax vaccine that could be administered in a single dose is advancing to its first clinical trial with support from the U.S. Department of Health and Human Services' Office of the Assistant Secretary for Preparedness and Response (ASPR).

Under a two-year, approximately \$14 million contract between ASPR's Biomedical Advanced Research and Development Authority (BARDA) and Altimune, Inc. of Gaithersburg, Maryland, the company will begin the first clinical trial of its anthrax vaccine **NasoShield**.

If the vaccine performs well during clinical studies, the contract could be extended an additional three years and up to a total of approximately \$120 million to support additional clinical and nonclinical studies and scale-up manufacturing.

**The NasoShield vaccine is unique in that it is administered as an intranasal spray instead of an injection. The vaccine uses a genetically modified Adenovirus 5 as the delivery system.** With this system, a non-infectious virus is modified to include genetic material from the anthrax bacteria genome needed to produce an immune response against anthrax.

**The only anthrax vaccine currently approved by the U.S. Food and Drug Administration (FDA) requires three doses.**

"The sooner people are protected by vaccine after being exposed to anthrax, the more lives

we can save," said Dr. Richard Hatchett, BARDA's acting director. "A single dose vaccine is ideal to provide fast protection and peace of mind in the critical days after an incident."

In May 2016, ASPR issued a task order to one of its Centers for Innovation in Advanced Development and Manufacturing (CIADM) to produce the material that will be used for the clinical trial. It marked the first time a CIADM was used to support the development of a candidate vaccine or drug.

In the planned NasoShield clinical studies, the vaccine candidate will be tested for safety and its effectiveness in eliciting an immune response in humans, although participants will not be exposed to anthrax. If development is successful and the product earns FDA licensure, the product would be administered as a nasal spray to protect against infections caused by inhalation anthrax.

In addition to advanced development of NasoShield, BARDA has supported improvement of the currently licensed vaccine, BioThrax, so that fewer doses may be needed to protect against anthrax, as well as other novel vaccines that may require fewer doses, antibiotics and antitoxins. FDA also has approved use of four anthrax-related antibiotics and two anthrax antitoxins developed with BARDA support.

## Police investigate mail filled with unknown white powder in Roselle Park

Source: [http://www.nj.com/union/index.ssf/2016/10/police\\_investigating\\_mail\\_filled\\_with\\_unknoww\\_powd.html](http://www.nj.com/union/index.ssf/2016/10/police_investigating_mail_filled_with_unknoww_powd.html)

Oct 07 – Local police are warning residents to inspect all their mail after receiving reports of parcels packed with an unknown white powder.

Roselle Park police blocked off Warren Avenue Friday afternoon for more than an hour, as the Union **County Sheriffs K9 unit inspected the pieces of mail**, along with State Police and township officials. County hazmat officials tested several envelopes at the scene and found the powder does not appear to be dangerous, said Chief of Police Paul Morrison. However, officials are urging residents to contact police if they find any pieces of mail marked with a return address of "Roselle Park Police."

**Police said they found 16 envelopes** with printed addresses containing the powder, 14 of which were sent to residents in a cluster of homes on Warren Avenue.





One of the residents alerted police after opening his or her mail Friday afternoon.

Two were not delivered because the addresses did not exist. Police found the unsent envelopes at the post office, according to police. The U.S. Postal Service truck that delivered the mail was kept at the scene. The items will be sent to the state crime lab for further testing. Morrison said he believed the printed addresses were to hide the sender's identity. As of 3 p.m., Warren Avenue remained blocked off, but police were allowing residents to return to their homes.



## New candidate vaccines against the plague show promise

Source: <http://www.homelandsecuritynewswire.com/dr20161017-new-candidate-vaccines-against-the-plague-show-promise>

Oct 17 – **Researchers from the University of Texas Medical Branch at Galveston have developed new potential vaccines that protect animals against the bacteria that causes the deadly plague.** These findings are detailed in *NPJ Vaccines*.

The plague of Black Death infamy has had the power to strike fear in people since the Middle Ages — and for good reason. Once someone

Prevention (CDC) as a Tier-1 select agent. Select agents are materials that have been identified by the federal government as agents with potential for use in biological terrorism or warfare. The select agents that pose the greatest threat to public health and safety are labeled as Tier 1.

“The optimal strategy for protecting people and animals against this deadly disease would be

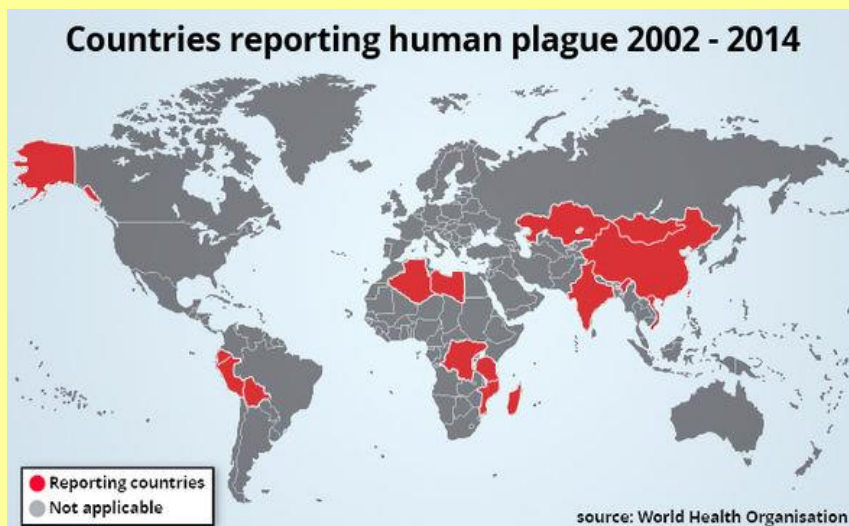
through vaccination, but there are no FDA-licensed plague vaccines available in the United States,” said Ashok Chopra, UTMB professor of microbiology and immunology. “We’ve been working to develop a vaccine that will generate long-term immunity and protection against the plague.”

UTMB notes that by **deleting and modifying certain genes**, the UTMB researchers constructed new versions of the *Y. pestis* bacteria designed to provide immunity to the plague without making them ill. They then examined several aspects of the immune response after immunization and tested how long the immunization would

protect mice and rats against the plague.

Overall, **all three of the new possible vaccines stimulated long-lasting immune responses capable of protecting animals from developing the pneumonic plague as late as four to five months after vaccination.**

“In addition to how well a vaccine works to protect against disease, safety is another important aspect for vaccine development,” said Chopra. “We have shown that our mutants (versions of the bacteria) are safe vaccine candidates as our detailed analyses showed no sign of damage to bodily tissues in the vaccinated animals.”



begins to show symptoms, the disease progresses very quickly and is **almost 100 percent fatal without prompt treatment**. The World Health Organization (WHO) has categorized the bacteria responsible for plague, *Yersinia pestis*, as a re-emerging pathogen because of the rising number of human plague cases globally. The bacteria cause three different kinds of plague, bubonic, septicemic and pneumonic.

Unfortunately, antibiotic-resistant *Y. pestis* strains have been isolated from plague patients and can be engineered for use as a bioweapon, which is concerning since *Y. pestis* is classified by the Centers for Disease Control and



— Read more in Bethany L Tiner et al., "Immunization of two rodent species with new live-attenuated mutants of *Yersinia pestis* CO92 induces protective long-term humoral- and cell-mediated immunity against pneumonic plague," *npj Vaccines* 1, article number 16020 (13 October 2016) (DOI: 10.1038/npjvaccines.2016.20).

## Jennifer Lopez Sets Futuristic Bio-Terror Drama at NBC

Source: <http://www.hollywoodreporter.com/live-feed/jennifer-lopez-sets-futuristic-bio-939509>

Oct 19 – 'C.R.I.S.P.R.' — aka "clustered regularly interspaced short palindromic repeats" — marks her latest project for the network. NBC is reteaming with Jennifer Lopez for a futuristic procedural.



The network has handed out a script order to drama *C.R.I.S.P.R.*, which is being produced by the *Shades of Blue* star, *The Hollywood Reporter* has learned.

*C.R.I.S.P.R.* — aka "clustered regularly interspaced short palindromic repeats" — is a procedural thriller set five minutes into the future that explores

the next generation of terror: **DNA hacking**. If the project moves forward, each episode will explore a bio-attack and crime — from a genetic assassination attempt on the president to the framing of an unborn child for murder. The show's central character is a scientist with the CDC who is paired with an FBI agent. In the same vein of *Castle*, romance will blossom between the scientist and the FBI agent as they team to bring down a diabolical genius with a twisted God complex: her former boss. The drama will see mentor and protégé battle for control over the human genome in a game of cat and mouse in which the future of our species may rest and all disease could one day be eradicated.

Anthony Cipriano (*Bates Motel*) will pen the script and executive produce alongside Lopez and her Universal Television-based Nuyorican Productions. Elaine Goldsmith-Thomas also will exec produce via her E!TV banner alongside Benny Medina and Fascination Street's Drew Brown. Nuyorican head of development Priscilla Porianda is set as a co-exec producer.

## A Threat to the Food System

By Tom Daschle and Richard B. Myers

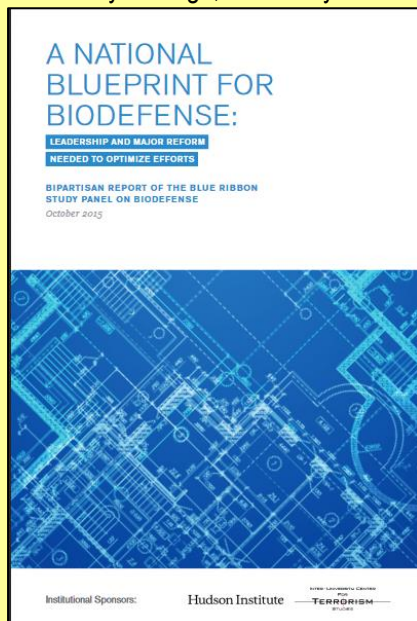
Source: <http://www.usnews.com/opinion/articles/2016-10-17/americas-food-supply-and-national-security-are-at-risk-to-bioterrorism>

Oct 17 – The 15th anniversary of September 11 honored the far-too-many who lost their lives that horrific day. Almost unnoticed was the 15th anniversary of the U.S. anthrax attacks that occurred soon thereafter and left 5 dead, 17 infected and more than 10,000 at risk of exposure. The magnitude of those attacks clarified the need to address bioterrorism more comprehensively in the United States.



Americans rarely consider the potential for our enemies to attack our nation's agricultural infrastructure and food supply with biological weapons. They should. Agriculture security *is* national security.

Fourteen years ago, U.S. Navy SEALs found a list of pathogens and a schematic in an Afghanistan cave



that al-Qaida planned to use to produce bioweapons. In addition to six human pathogens, ten pathogens targeted food, six targeted livestock and poultry, and four targeted crops. Clearly, al-Qaida was considering agroterrorism.

A series of reports by the bipartisan Commission on the Prevention of WMD Proliferation and Terrorism from 2008 to 2010 stated that a biological attack in the United States was much more likely than a nuclear attack. With their report card, they delivered a failing grade to the nation – an "F" for bioterrorism readiness.

<https://www.ecohealthalliance.org/wp-content/uploads/2016/03/A-National-Blueprint-for-Biodefense-October-2015.pdf>

In October 2015, the bipartisan [Blue Ribbon Study Panel on Biodefense](#) published **"A National Blueprint for Biodefense: Leadership and Major Reform Needed to Optimize Efforts"** that documented the ongoing vulnerability of the United States to biological agents, whether naturally, accidentally or

deliberately introduced. Among others, the panel discussed biological threats to agriculture in their report, emphasizing a One Health approach to addressing animal, environmental and human health simultaneously. The panel also recommended that the House and Senate agriculture committees increase their oversight regarding efforts to counter agroterrorism.

So, how might a naturally occurring event or intentional attack on the crops, animals and systems that comprise our food supply impact American's overall health and economy?

Any threat to our country's food production and security would have devastating economic, social and political impacts. **The agriculture sector in the U.S. is a \$1 trillion business and employs approximately 9.2 percent of American workers. In 2012, domestic animal agriculture – livestock and poultry production – generated approximately 1.8 million jobs, \$346 billion in total economic output and \$60 billion in household income.**

More than two-thirds of existing, emerging and reemerging animal pathogens can be transmitted to people and as such, present significant threats to human health. Avian influenza, Ebola and Rift Valley fever are just three examples. While individual animal pathogens cannot cause major food shortages alone, combinations of livestock disease agents could.

In addition, some crop diseases could be catastrophic themselves. Wheat and rice account for an estimated 39 percent of the world's total calorie consumption and pose worrisome terrorist targets.

Food insecurity has also contributed to major instability in the Middle East since the 1990s, and no country is immune. The minimalistic approach to bio/agrodefense in the United States must end.

The bipartisan Blue Ribbon Study Panel for Biodefense made 33 recommendations and identified more than 80 public policy actions the Nation needs to execute in the near-, medium- and long-term. Notably, the panel recommended that the vice president of the United States assume responsibility for biodefense to coordinate efforts in accordance with a unified strategy – a strategy we have yet to develop and implement. We add that the government has artificially separated human and agricultural defense policy. Biodefense must include agrodefense to ensure America is prepared to respond to and recover from agricultural attacks.

Bio/agrodefense threats to the United States are real. The next administration must take the opportunity – and fulfill its responsibility – to address these threats to the nation from day one.





*Tom Daschle is a former U.S. Senate majority leader and a member of the bipartisan Blue Ribbon Study Panel on Biodefense.*

*Richard B. Myers, a retired U.S. Air Force general, was chairman of the Joint Chiefs of Staff and currently serves as interim president of Kansas State University.*

## INTERPOL launches Operational Response Project to address bioterrorism response efforts

Source: <https://homelandprepnews.com/biological-threats/19985-interpol-launches-operational-response-project-address-bioterrorism-response-efforts/>

Oct 19 – The International Criminal Police Organization (INTERPOL) recently conducted its Operational Response Project in Amman, Jordan, to identify best practices related to command and control, hazard risk assessment, and evidence exploitation.



The project brought together 45 Jordanian law enforcement specialists, armed forces personnel, public health experts, and chemical, biological, radiological, nuclear, and explosive (CBRNE) research teams to find the best ways to prepare for a disaster incident.

The exercises emphasized the need for inter-agency collaboration and cooperation to create a sustainable network of experts to deal with various security issues. **The event also aimed to update INTERPOL's BioTerrorism Incident Response Guide (BIRG), which provides a guide for for law enforcement agencies and other entities to respond to various acts of bioterrorism.**

The event was funded by Global Affairs Canada. Attendees included Canada's Ambassador to Jordan Peter McDougall and Jordan's Assistant Director of the Judicial Police Brigadier Waleed Batah.

