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Editor-in-Chief

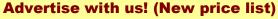
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EDITOR'S CORNER



EditorialBrig Gen (ret'd) Ioannis Galatas, MD, MA, MC

Editor-in-Chief
CBRNE-Terrorism Newsletter

Dear Colleagues,

February was a rather "quiet" month and apart the small scale Louvre (Paris, Francce) terrorist attack no major incidents were recorded in our continent.

Let me start with some good CBRN news:

FDA approved two monoclonal antibodies for anthrax, which represent the first licensed monoclonal antibodies for a bacterial infectious disease, as well as the heptavalent botulism antitoxin and a postexposure prophylaxis dosing regimen for the existing anthrax vaccine. Additionally, several nonlicensed but important products have been developed and stockpiled and would be used under an emergency use authorization. These include a smallpox antiviral and a smallpox vaccine to be used in people for whom the standard vaccine is contraindicated. In addition, a study showed that Next-gen antibiotics targeting ribosomes might defend against bioterrorism

Radiation countermeasures have also progressed under BARDA/Project Bioshield stewardship, with both biodosimetry devices and cytokines being supported. Stockpiling of an antimicrobial burn dressing, development of burn eschar dissolving agents, and development of skin growth/regeneration products have also occurred.

In the chemical realm, a midazolam auto-injector, to be used in the event of nerve gas poisoning, is in late stages of development.

Let us go now to the bad news:

Islamic State now focus on weaponized drones and experiments a lot in Iraq – successfully! More insights on the CWA capabilities of IS are revealed and it seems that Mosul University was the center of their chemical research and development. Combine these two and you have a new theat: CWA weaponized drones against populated areas!

There is a tendency to disconnect Islam from terrorism led by mass media and leading authorities such as the Pope. In a similar way many try to persuade us that refugees' tsunami has nothing to do with exporting terrorism or be used by foreign fighters to return to their homelands. Now that globalization and multiculturalism are falling apart some think that we are stupid enough to believe in an angelic world.

I am really surprised with the way Americans behave after Trump's election. Almost all communities have something to say against him – historians, politicians, movie actors nd celebrities, multimillion businesses, the LTGB community, the Afro-American community, the medical community, the women community, the illegal immigrants community (!), just to name a few. What is going on outhere? So many problems under the carpet and the new President made the mistake to lift the carpet? It seems that the real problem is that Trump was not raised as a politician to know how to play the game and be diplomatic, flexible and politically correct as the previous president. Hope to stay the way he is – just refine his reactions and do things for the benefit of all Americans. A strong united America is best for the rest of the world facing deadly challenges.

In Greece the situation is stable bad financially while Turkey is becoming very nervous and provocative. A hot incident is about to happen and perhaps this could be a chance to change a few things even in a bloody way. Patience taken as weakness has its llimits and all involved parts have to assume their responsibilities.

Hope that coming months will be equally "quiet" but (unfortunately) the unexpected always happens and recently Bill Gates warned the planet about the results of a global engineered bioterrorism attack and how unprepared we are to deal with it. So be prepared and informed since only knowledge counters conventional and asymmetric disasters effectively.

The Editor-in-Chief

Soros-Funded Groups Back Anti-Trump Women's March

Source: http://www.breitbart.com/big-government/2017/01/12/anti-trump-womens-march-backed-soros-funded-groups/

Jan 12 – The march has been described by the news media as a female protest against Trump, with reports that hundreds of thousands might attend.

Celebrities who have confirmed attendance include: Chelsea Handler, America Ferrera, Unzo Aduba, Scarlett Johnansson, Debra Messing, Padma Lakshmi, Julianne Moore, Hari Nef, Yara Shahidi, Constance Wu, Olivia Wilde, Monica Ramen, Katy Perry, Cher, Danielle Brooks, Patricia Arquette and Zendaya.

The mission statement for the march claims that the gathering is meant to send a message "that women's rights are human rights."

The statement reads:

The rhetoric of the past election cycle has insulted, demonized, and threatened many of us – immigrants of all statuses, Muslims and those of diverse religious faiths, people who identify as LGBTQIA, Native people, Black and Brown people, people with disabilities, survivors of sexual assault – and our communities are hurting and scared. We are confronted with the question of how to move forward in the face of national and international concern and fear.

In the spirit of democracy and honoring the champions of human rights, dignity, and justice who have come before us, we join in diversity to show our presence in numbers too great to ignore. The Women's March on Washington will send a bold message to our new government on their first day in office, and to the world, that women's rights are human rights. We stand together, recognizing that defending the most marginalized among us is defending all of us.

Activists Gloria Steinem and Harry Belafonte are serving as honorary co-chairs.

In 2005, Belafonte founded the Gathering for Justice group, which has since been the recipient of numerous grants from Soros' Open Society Foundations.

The Open Society also supported the New York production of a play starring Belafonte titled "The Exonerated" about wrongly convicted death row inmates. Soros' foundation sponsored a series of "talk back" conversions after the play "where justice advocates and death penalty experts from across the country will speak and field questions from the theater audience."

Belafonte serves on the board of the Advancement Project, which was one of four primary recipients of money from a group created in 2008 called the Election Administration Fund. The Fund reportedly raised between \$5.1 million-\$1 million from Soros' Open Society Institute.

Meanwhile, the official partner's list for the Women's March on Washington reads like a who's who of the far-left, including groups such as CODEPINK, the Southern Poverty Law Center and 350.org.

Many of the march "partners" are financed by Soros, including: Sierra Club, Amnesty International, MoveOn.org, NAACP, Green For All, Center for Constitutional Rights, Human Rights Watch, MoveOn.org, NARAL Pro-Choice, People for the American Way, and Planned Parenthood.

The march is led by the following four co-chairs:

- Tamika D. Mallory, whose bio says she "has worked closely with the Obama Administration as an advocate for civil rights issues, equal rights for women, health care, gun violence, and police misconduct." She also served on the transition committee of NYC Mayor Bill de Blasio.
- Carmen Perez, who served as the executive director of Belafonte's Soros-financed The Gathering for Justice.
- Linda Sarsour (photo), a self-described "Brooklynborn Palestinian-American-Muslim racial justice and civil rights activist," who serves as "the Executive Director of the Arab American Association of New





York, co-founder of Muslims for Ferguson, and a member of Justice League NYC," her march bio relates.

 Bob Bland, the CEO and founder of Manufacture New York (MNY), which his bio describes as "a social enterprise that is rethinking the fashion ecosystem (design, development, distribution) and creating a



new, vertically-integrated business model that will transform apparel & textile production for the 21st century."

Aaron Klein is Breitbart's Jerusalem bureau chief and senior investigative reporter. He is a New York Times bestselling author and hosts the popular weekend talk radio program, "Aaron Klein Investigative Radio".

Sweden: Muslim migrants gang-rape woman, broadcast it live on Facebook

Source: https://www.jihadwatch.org/2017/01/sweden-muslim-migrants-gang-rape-woman-broadcast-it-live-on-facebook

Jan 23 – The Swedish publication Nyheterldag says that the attackers were "nysvenskar," that is, "new Swedes," which is the establishment media euphemism for Muslim migrants.



And so here we go again. The Qur'an teaches that Infidel women can be lawfully taken for sexual use (cf. its allowance for a man to take "captives of the right hand," 4:3, 4:24, 23:1-6, 33:50, 70:30). The Qur'an says: "O Prophet, tell your wives and your daughters and the women of the believers to bring down over themselves of their outer garments. That is more suitable that they will be known and not be abused. And ever is Allah Forgiving and Merciful." (33:59) The

implication there is that if women do not cover themselves adequately with their outer garments, they may be abused, and that such abuse would be justified.

"Horror as gang rapes woman in Sweden and broadcasts it on FACEBOOK LIVE," by Siobhan McFadyen, Express, January 23, 2017 (thanks to The Religion of Peace):

A woman was gang raped in Sweden by a group of men who broadcast the horrific attack on Facebook live, it has been claimed.

Disgusted witnesses who saw the footage said the men only stopped their horrendous attack when police stormed the flat and stopped the broadcast.

Swedish officers have arrested three men in connection with the attack, after a member of the public alerted police to the incident just before 8.30am this morning.

The rape is said to have taken place in an apartment in the city of Uppsala this morning. Armed officers have cordoned off the area surrounding the home where the crime took place where scenes of crime officers are undertaking a technical examination.

Police are not revealing information about the matter, but confirmed three people have been arrested on suspicion of aggravated rape.



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The three arrested were born in 1992, 1996 and 1998 after the horrific attack was apparently broadcast live on Facebook.

The officer in charge of the investigation Ivan Aslund said: "We cannot comment on anything at the moment.

"A preliminary investigation has begun and there is full confidentiality".

Witnesses who claim to have seen the film say they saw a live broadcast that looked very alarming. They described two men pushing down a girl on the bed and holding her against her will and subjecting

According to local tabloid Aftonbladet, at first they thought the sinister video was a joke before realising it was real and that more than 200 people watched it live....



40% of refugees in Austria put religion above law – study

Source: https://www.rt.com/news/375390-study-refugees-religion-law/

Jan 28 – A new study from the Austrian Academy of Sciences shows that 40 percent of refugees in Austria believe religious commandments take precedence over the nation's laws, prompting the country's foreign minister to push for a rigorous new integration package.

her to a serious sexual assault.

The survey, which was conducted on behalf of the country's Department of Integration (Integrationsressort), found that 90 percent of officially recognized Austrian refugees believe democracy is an ideal form of government. The study also found that 80 percent believe in the equality of men and women, and 83 percent have no problem with other religions, Austrian Die Presse reported this week.

Yet, 40 percent of the same people questioned for the study said that religion is a more reliable guide for behavior than secular state law, with 80 percent supporting adherence to religious law in the public sphere. At the same time, only 61 percent admitted to being religious, while 45 percent don't believe all religions are equal.

Some 900 Austrian refugees – 43 percent Syrian, 37 percent Afghan, and 20 percent Iraqi – took part in the survey during the summer and autumn of 2016. Slightly more than

half were 18 to 30 years old, and 80 percent were male.

About half of those surveyed thought the lifestyles of Western people are too liberal and that they have too much freedom. In addition, despite the majority acknowledging women and men as equals, nearly all wanted to see Muslim women covering up in Austria. Some 37 percent also said they wanted separate gym classes and swimming lessons for boys and girls in schools, and one in five even said women should not be allowed to work.

Finally, 88 percent of the interviewees said they accept the living habits of the Austrians in general, but 38 percent admitted that they were too free-wheeling for them.

The obviously contradictory findings prompted Sebastian Kurz, who is both Austria's Foreign Minister and Minister of Integration, to push for expanding integration courses for refugees at the second international integration conference – 'Vienna Future Talks'. Though these courses have been vehemently criticized since being launched in the beginning of 2016, Kurz said the study shows they are still a necessity, as they have only partially fulfilled their purpose so far. The Austrian integration minister also visited one such course with an international delegation as part of the conference.

"We can see from this study that there is consent among refugees to abstract basic values. But that does not mean that these people have internalized these principles, neither that they are ready to live by them," Kurz told the press on Monday.

The minister called the integration process a "major challenge," while noting the importance of showing Austria's newcomers the country's basic values and helping them "clearly define boundaries" for their behavior.

"If there are violations against our laws or our basic values, we do not react with exaggerated tolerance, but show that the regulations in Austria must be strictly adhered to," the minister stated, while mentioning a number of new proposals that he said would "hopefully soon become integration laws." Among other measures, these include a ban on full-face veils, such as the burka, and a ban on Quran distribution projects, as well as a compulsory low-wage employment for refugees. These and other initiatives still have to be agreed to by Kurz's coalition partners, the Social Democrats, who have been speaking out against the burka ban and €1-per-hour employment.

The integration courses, known in Austria as "orientation and value" courses, are 8-hour seminars where refugees learn about Austria's behavioral standards and societal values. Around 15,000 asylum seekers have taken part in them since their establishment last year, according to statistics from the Austrian Ministry of the Interior.

Austria has been tightening its migrant policies since a number of incidents involving migrants. In the latest case, a woman in her 50s was stabbed by an Afghan migrant while she was reading the Bible in asylum accommodation. The attacker later told police that he had assaulted her because he had "personal problems."

In November of last year, the Austrian Interior Ministry admitted that there has been a steep jump in the <u>number</u> of <u>crimes</u> involving asylum seekers over the past few years. This has bolstered the nation's anti-migrant sentiment, which led to a cap of 37,500 asylum claims being imposed last year. Austria took in 90,000 asylum seekers at the peak of Europe's migration crisis in 2015.



Public view of police and body-worn cameras

Source: http://www.homelandsecuritynewswire.com/dr20170130-public-view-of-police-and-bodyworn-cameras

Jan 30 – With heightened public and media interest, there is a national push to expand the use of body-



worn cameras (BWCs) by law enforcement. However, there is limited research and only anecdotal evidence suggesting that the public supports the use of these cameras in policing.

FAU says that to help fill the gap, researchers at Florida Atlantic University and collaborators from the University of West Florida conducted a study to gage perceptions of residents in two Florida counties, Palm Beach County and Escambia County, on their views on the use of BWCs and the impact of these cameras on procedural fairness, concern about crime, police performance and privacy. In 2015, these researchers published a study on law enforcement leadership's perceptions of BWCs use in their work. This new work addresses general public perceptions with some unexpected results.

Key findings from the study reveal that 87 percent of respondents agree that BWCs would improve police officer behavior and that 70 percent agree that BWCs would improve how citizens behave when they encounter police.



The researchers anticipated that those with the most negative views of police would be the most supportive of BWCs. Surprisingly, they found the opposite to be true. Citizens who had a more positive view of police and thought they were treating people fairly and doing a good job had the most support for BWCs. Another unexpected result of the study was that those citizens who were the most concerned about crime were less inclined to see benefits in the use of BWCs. However, the researchers caution that this is an indirect relationship having to do with their perceptions of police performance, fear of crime, and belief that police are not doing a good job and therefore they perceive less benefits of using BWCs. Residents of Palm Beach County were surveyed by phone in two waves: 17 March through 5 May 2015 and 19 January through 9 March 2016. Participants self-identified as either residents of West Palm Beach or non-residents, and perceptions cited were not specific to a particular police department but were more general. There were significant differences noted between West Palm Beach residents and non-residents.

"West Palm Beach residents were more likely to believe that body-worn cameras would make residents safer, and this reflects an important theme regarding community safety concerns among residents in general," said John Ortiz Smykla, Ph.D., director and professor in FAU's School of Criminology and Criminal Justicewithin FAU's College for Design and Social Inquiry, who collaborated with Vaughn J. Crichlow, Ph.D., assistant professor in FAU's School of Criminology and Criminal Justice.

The overwhelming majority of Palm Beach County residents agreed that the use of body-worn cameras would increase safety for officers and residents; improve officers' and residents' behavior; increase police legitimacy; and improve the quality of evidence collected. The majority of respondents in the study also agreed that the use of BWCs would make it less likely for police officers to use force in encounters with citizens.



FAU notes, however, that there was an unfavorable slant in West Palm Beach residents' perceptions regarding police-community encounters, police effectiveness, and issues of crime and safety. West Palm Beach residents reported less favorable perceptions on the fairness, courteousness and honesty of local police. They also were more likely to agree that police do not deal with important problems well (including city crime problems). West Palm Beach residents also were more likely to agree that police often stop people on the street without sufficient reason and were less likely to agree that local police only use the amount of force necessary to accomplish tasks.

"These findings are timely as West Palm Beach police and other police departments across the country seek to increase efficiency and improve officers' interactions with the public using body-worn cameras," said Crichlow.

The West Palm Beach Police Department fully deployed BWCs beginning in July 2015 and by the end of that year, the department had deployed 217 BWCs.

"We believe that our findings will provide a much-needed overview about residents' views on the use of body-worn cameras, and potential reasons for differences among citizens that could lead to more focused strategies on improving law enforcement and citizen interactions," said Smykla.

The current study, "Community Perceptions of Police Body-Worn Cameras: The Impact of Views on Fairness, Fear, Performance, and Privacy," has been accepted for publication in the journal, *Criminal Justice and Behavior*, later this year.

Austria to ban full-face veil in public spaces

Source: http://www.dw.com/en/austria-to-ban-full-face-veil-in-public-spaces-says-kern/a-37342087

Jan 31 – Austrian Chancellor Christian Kern on Monday announced a new policy aimed in part to fend off the challenge of the far-right. The niqab ban is meant to avoid giving Austrian Muslims the "feeling that

they are not part of our society," he said. "The full-face veil will be banned in public spaces," Kern said after Austrian ministers approved the new policy program. He said that he wanted to avoid "giving 600,000 Muslims in Austria the feeling that they are not part of our society." The 35-page program said the governing coalition believes in an "open society that is also based on open communication," which the "full-body veils in public spaces stand against." The conservative Deputy Chancellor Reinhold Mitterlehner said the coalition agreed to "work faster and more

clearly." "It is now up to us to do what governing parties do, namely implement the program," Mitterlehner said. The new policy comes at a time when the anti-Islamization Freedom Party (FPO) has seen a surge in support, resulting in their presidential candidate nearly winning the election in December.

Think tanks face "existential challenge"

Source: http://www.dw.com/en/think-tanks-are-they-losing-their-relevance/a-37342413

Jan 31 – The University of Pennsylvania has listed almost 7,000 think tanks in its worldwide ranking, but the editors of the index concede that these institutions, which influence political decisions, now face "existential challenges." The world is becoming more networked, more complex, and more difficult to understand – and more and more knowledge and facts must be viewed, prioritized, weighed and analyzed to inform decisions that have far-reaching implications. This need has ushered the age of think tanks – but these need also pose a challenge. In his preface, index editor James McGann says that think tanks will be confronted with "existential challenges" in the future. McGann laments the fact that

pollsters and think tanks failed in the past year in the Brexit referendum and the U.S. presidential election. Social movements have drawn new power from disruptive technologies that have made disruptive politics possible, he explains. The 10th "Global Go To Think Tank



Index" lists and evaluates nearly 7,000 institutions. The index is the result of the work of about 2,500 experts, scientists, journalists, politicians, and think tank managers.



Fish scales inspire protective wear

Source: http://www.homelandsecuritynewswire.com/dr20170201-fish-scales-inspire-protective-wear

Feb 01 – They started with striped bass. Over a two-year period the researchers went through about fifty bass, puncturing or fracturing hundreds of fish scales under the microscope, to try to understand their properties and



mechanics better. "The people at the fish market must have wondered what we were up to," says François Barthelat smiling ruefully." He teaches in the Dept. of Mechanical Engineering at McGill, and is one of a growing number of scientists who look to nature for inspiration as they search for solutions to engineering problems they see around them today. For several years, he and his team have been trying to replicate the kind of protection combined with flexibility offered by certain kinds of animal scales. Their goal

is to create protective gloves that are both resistant to piercing and still

flexible enough for factory workers to work in. After five years of work, they believe they have done it.

The solution came when they started looking more closely at the scales of an alligator gar.

Smaller is sometimes better

McGill says that through a series of experiments the researchers were able to identify a set of critical mechanisms in the way natural fish scales deform, interact, and fracture. They also

developed a new technique to cover large surfaces with a shell of overlapping ceramic tiles. By using computer modeling, they were able to determine the optimal size, shape, arrangement and overlap to make protective gloves which are much more resistant to piercing than those currently in use.

"Fish scales surprised us," says Roberto Martini, a post-doctoral fellow and the lead author on a paper the team recently published about their work. "It may sound counter intuitive, but we discovered that smaller scales

are actually more difficult to pierce than the larger ones, something we can now fully explain using engineering analysis. We also learned that they are the toughest collagen-based material known."

Nature solves engineering problems

"Nature has been finding solutions to 'engineering problems' over millions of years of evolution" adds Barthelat.

"For a long time biologists and engineers largely ignored each other, but this is now changing.

Biologists are using more and more engineering tools and methods, and engineers are revisiting old engineering problems

using bioinspiration. Biologists and engineers are now talking to each other more than ever before, which is very stimulating and makes it is a very exciting time to be working in

this field."

— Read more in Robert Martini and François Barthelat, "Stretch-and-release fabrication, testing and optimization of a flexible ceramic armor inspired from fish scales," <u>Bioinspiration and Biomimetics</u> 11, no. 6 (13 October 2016).

Trump wall (US-Mexican borders)





Erdoğan's chief aide: Turkey developed missiles capable of striking EU countries

Source: https://www.turkishminute.com/2017/02/04/erdogans-chief-aide-says-turkey-developed-missiles-capable-striking-eu-countries/

Feb 04 – Speaking on public broadcaster TRT, Yiğit Bulut, a chief advisor of President Recep Tayyip Erdoğan, claimed that Turkey has developed missiles that have the capability of striking any country

within the European Union.

In a weekly news program on TRT Haber on Friday, Bulut, who has gone from harsh critic to loyalist, further argued that Turkey now has over 70 percent independence in defense technology.

Bulut is a strong believer in conspiracy theories and is known for his anti-Western and anti-European rhetoric.

Bulut frequently appears on television shows and talk about how Turkey is resisting Western efforts to undermine it thanks to President Erdoğan.

Last week, Bulut revealed that the president suggested the removal of

historical French statues during a visit to Africa.

Speaking on state-run TRT last week, Bulut talked about the importance of the African continent and how differently Turkey approaches it when compared to European countries that he said merely aimed to exploit its resources.

"When we go to Africa, we are not going there like Holland, when we go there, we don't go there like France. Mr. President told [locals] during a visit [to Africa], 'Remove those French statues, throw them away," Bulut said in televised remarks.



In December, Bulut claimed on live TV that foreign chefs who host cooking shows are spying on Turkey. "Please don't think I'm exaggerating or that this is a conspiracy theory," Bulut said on a program aired by the staunchly pro-government TV station A Haber.

Bulut argued that foreign chefs who travel around Anatolia for cooking shows are actually gathering information about Turkey. He further said "gullible" Turkish villagers host these foreign chefs and show them around, urging the Turkish nation not to be fooled by their spying activities.

EDITOR'S COMMENT: Your choices: (1) Get angry; (2) Get pissed; (3) LOL; (4) Ignore statements; (5) Think of Einstein (again); (6) Blame President Trump (no reason but this is what everybody does about everything); or (7) Invite them to join EU to feel safe! Up to you – if you live in our continent!

Just ONE day in our lives!

Turkey violated Greek airspace 138 times in one day – Defense Ministry

Source: https://www.rt.com/news/376003-turkey-violated-greece-airspace/

Feb 02 – Tensions between Greece and Turkey - both NATO members - are mounting after Athens accused Ankara of violating Greek airspace above historically disputed islets, and with the fallout over Greece's refusal to hand over coup suspects to Turkey still fresh.

The Greek Defense Ministry said it has registered 138 violations of the country's airspace on Wednesday, Reuters reported citing the minister who claimed that all the violators have been "intercepted."

"We want peace, we are not looking for a fight or for trouble in the Aegean, but there won't be an aircraft





which will not be intercepted," Greek Defence Minister Panos Kammenos told Antenna Television. All the airspace violations occurred in the central and southern Aegean above tiny Greek islets, disputed by the two countries.

The already strained relations between the two NATO nations escalated quickly after the Greek Supreme Court last Thursday, blocked the extradition of Turkish military officers whom Ankara accused of involvement in the botched coup attempt in July 2016.

The top court's ruling is final and cannot be disputed even by the country's Justice Ministry. The officers applied for political asylum in Greece, but their petitions are still being considered.

Turkey responded angrily to the decision, with Turkish Foreign Minister Mevlut Cavusoglu accusing Greece of "protecting and hosting coup plotters" and threatening to cancel the Turkey-EU migrant deal.

"We have a readmission agreement between us and Greece, with the European Union. We are going to take necessary steps, including the cancellation of this readmission agreement," he said.

The dispute around the rogue Turkish officers promptly shifted to the biggest stumbling block in Turkey-Greece bilateral relations – the disputed Aegean islets.



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The small, rocky and uninhabited islets lay very close to mainland Turkey and cause inevitable land and territorial water disputes. In 1996, the two countries, were on the brink of war over the Imia (Kardak in Turkish) islets. That conflict was defused when NATO and US officials intervened and the status-quo was restored.

The historical demarcation dispute escalated dramatically at the beginning of the year, when Greece's Deputy Ministry of Shipping and Island Policy announced plans to make 28 tiny rocky Aegean islets habitable.

Senior Turkish military commanders on Monday decided to sail on a Turkish Navy vessel past the Islet of Imia. That demarche caused a tense standoff with Greek gunboats.

"Greece is trying to take advantage of Kardak and similar rocky areas. Greece will not be permitted to open new areas here," Turkey's deputy PM Veysi Kaynak defiantly said on Wednesday.

In an apparent tit-for-tat, Kammenos flew in a helicopter over the disputed islets and dropped a wreath into the troubled waters to commemorate the Greek victims of the 1996 standoff. The official account states that three Greek officers died in a helicopter crash, but some experts allege the vehicle was actually brought down by Turkish fire.

EDITOR'S COMMENTS: (1) I always remember a question I posed to an Israeli pilot many years ago: "What do you if foreign warflanes enter your air space?" First he gave me a "are you stupid Sir?" look and then replied: "We intercept; then shoot them down!" (2) Recently German media accussed Greeks that they take their money to buy weapons! Maybe it was because we do not buy German weapons...

Saudi Arabia deports 39,000 Pakistanis in 4 months

Source: http://indianexpress.com/article/world/saudi-arabia-deports-39000-pakistanis-in-4-months-report-4512356/

Feb 08 – Some 39,000 Pakistani nationals have been deported from Saudi Arabia in the past four months



for visa violations even as a top security official has ordered a "thorough scrutiny" of Pakistanis allowed in to the Kingdom amid concern that some of them could be ISIS sympathisers. Saudi Arabia deported about 39,000 Pakistanis from the Kingdom in the past four months for violating the rules of residence and work, Saudi Gazette reported today, quoting informed security sources as saying. The sources also told the paper

that the involvement of a number of Pakistani nationals in some terrorist actions orchestrated by Daesh, the so-called Islamic State, is a cause of public and societal worry.

Venkaiah Naidu On Demonetisation

They said a number of Pakistanis were held in the crimes of drug trafficking, thefts, forgery and physical assault. Against this backdrop, Abdullah Al-Sadoun, chairman of the security committee of the Shoura Council, called for "thoroughly scrutinising" the Pakistanis before they are recruited for work in the Kingdom. He asked for more closer coordination with the concerned authorities in Pakistan to thoroughly check those coming to work in the Kingdom due to the involvement of a number of Pakistanis in security issues, the report said.

Sadoun said the political and religious inclinations of the Pakistanis coming to work in the Kingdom should be known to both sides before they are recruited for work. "Pakistan itself

is plagued with terrorism due to its close proximity with Afghanistan. The Taliban extremist movement was itself born in Pakistan," he said.

Meanwhile, according to Nafithat Tawasul (communications window) of the Interior Ministry, they are 82 Pakistani suspects of terror and security issues who are currently held in intelligence prisons. According to the report, as many as 15 Pakistanis, including a woman, were nabbed following the recent terrorist operations in Al-Harazat and Al-Naseem districts in Jeddah. The ministry recalled that last Ramadan, Abdullah Ghulzar Khan, a Pakistani, exploded himself at the car park of Dr. Soliman Fakheeh Hospital near the US consulate in Jeddah. He lived in the Kingdom for 12 years with his wife and her parents. He had arrived in Saudi Arabia on a private driver's visa.

Last year, the security forces had foiled a terrorist operation in which two Pakistanis, a Syrian and a Sudanese were held for plotting to explode Al-Jawhara Stadium in Jeddah where more than 60,000 spectators were gathered to watch a soccer match between the national teams of the Kingdom and the United Arab Emirates. They were planning to use a booby trapped truck loaded with 400 kg of explosives to undertake the terror attack, the report said.

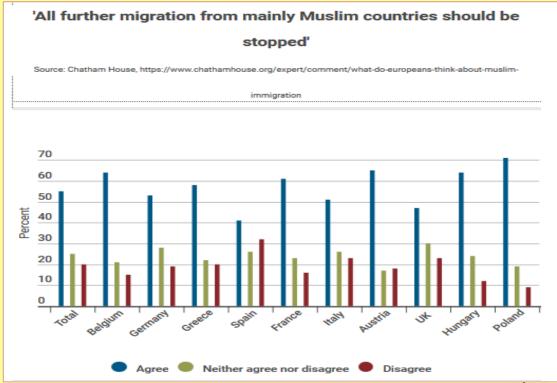
Most Europeans want immigration ban from Muslim-majority countries, poll reveals

Source: http://www.independent.co.uk/news/world/europe/most-europeans-want-muslim-ban-immigration-control-middle-east-countries-syria-iran-iraq-poll-a7567301.html

Feb 08 – A majority of Europeans want a <u>ban on immigration</u> from Muslim-majority countries, a poll has revealed.

An average of 55 per cent of people across the 10 European countries surveyed wanted to stop all future immigration from mainly Muslim countries.

The Chatham House study, conducted before US President Donald Trump signed an executive order



banning immigration to the US from seven predominantly Muslim countries, found majorities in all but two of the ten states opposed immigration from mainly Muslim countries. Only 20 per cent disagreed, while 25 per cent said they did not know.

	Total Agree	Neither	Total Disagree
	54.60%	25.30%	20.10%
GENDER			
Male	57	24	19
Female	52	27	21
AGE			
Young Age 18-29	44	29	27
Middle Age 30-44	50	28	22
Mid/Older Age 45-59	56	26	18
Old Age 60 plus	63	20	17
EDUCATION			
Secondary and Below	59	26	15
Post-Secondary	55	25	20
UG & PG Degree	48	24	27
GEOGRAPHICAL LOCATION			
Live Rural	58	25	17
Live Small Town	55	25	20
Live City	52	26	23
*Data is weighted by population weight			

A ban was supported by 71 per cent of people in Poland, 65 per cent in Austria, 53 per cent in Germany and 51 per cent in Italy. In the UK, 47 per cent supported a ban. In no country did more than 32 per cent disagree with a ban.

Of those surveyed, opposition to Muslim immigration was especially intense among older people, while those under 30 were less opposed.

There was also a contrast between those with secondary level qualifications, of which 59 per cent opposed Muslim immigration, and degree holders, of which less than half supported halting immigration. The poll backs up other research about attitudes towards Muslims in Europe.

<u>A Pew survey</u> of 10 European countries in 2016 found majorities in five countries had an unfavourable view of Muslims living in their country.

Of those, 72 per cent of Hungarians had a negative view of Muslims, followed by 69 per cent of Italians, 66 per cent of Poles, 65 per cent of Greeks and 50 per cent of Spaniards.

In the UK, only 28 per cent said they had an unfavourable view of Muslims, while in Germany and France 29 per cent said the same.

How To Annoy Europeans With Just One Sentence

Source: http://www.boredpanda.com/how-to-annoy-europeans-with-one-sentence-sigmagfx/

Feb 13 – Want to know how to piss off people from different European nations with just one sentence? Then you've come to the right place. Check out this trusty map to see what we mean. It was recently posted on Facebook by Sigmagfx, and as you can see, it's full of useful phrases to make your traveling experience more...well...exciting. Try going to Romania and telling them how much you love their "capital" Budapest, or the next time you're in Switzerland, don't forget to let them know just how inferior their chocolate is compared to Belgium's. You're sure to come home with a hilarious anecdote or two...just as long as you survive...



EDITOR'S COMMENTS: (1) "Macedonia for Macedonians" – this is not correct since it is self evident for Greeks. Instead: "FYROM to be named Macedonia"; (2) A more updated irritation: "You eat our European money!"

One morning <mark>in a</mark> German city

"We will bring Sharia in Germany; follow us now! It will be a time that your girls will be ours; your women will belong to all of us... and men will be loyal guards of Islam. Muslim women are more fertile than women of the infidels."

"In a few years Islam will conquer Germany and Sharia law will rule!"

Videos are in German

https://www.youtube.com/watch?v=HqOeKIAsfhq https://www.youtube.com/watch?v=8cJkbBHI-G4 https://www.youtube.com/watch?v=Myw8RAaFJ3E

State multiculturalism has failed, says David Cameron

Source: http://www.bbc.com/news/uk-politics-12371994

Feb 05 – David Cameron has criticised "state multiculturalism" in his first speech as prime minister on radicalisation and the causes of terrorism.

At a security conference in Munich, <u>he argued the UK needed a stronger national identity</u> to prevent people turning to all kinds of extremism.

He also signalled a tougher stance on groups promoting Islamist extremism.



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The speech angered some Muslim groups, while others queried its timing amid an English Defence League rally in the UK.

As Mr Cameron outlined his vision, he suggested there would be greater scrutiny of some Muslim groups which get public money but do little to tackle extremism.

Ministers should refuse to share platforms or engage with such groups, which should be denied access to public funds and barred from spreading their message in universities and prisons, he argued.

"Frankly, we need a lot less of the passive tolerance of recent years and much more active, muscular liberalism," the prime minister said.

Human rights

"Let's properly judge these organisations: Do they believe in universal human rights - including for women and people of other faiths? Do they believe in equality of all before the law? Do they believe in democracy and the right of people to elect their own government? Do they encourage integration or separatism? "These are the sorts of questions we need to ask. Fail these tests and the presumption should be not to

engage with organisations," he added.

The Lebert MP for later Operation Structure and additional and the presumption should be not to

The Labour MP for Luton South, Gavin Shuker, asked if it was wise for Mr Cameron to make the speech on the same day the English Defence League staged a major protest in his constituency.

There was further criticism from Labour's Sadiq Khan whose comments made in a Daily Mirror article sparked a row.

The shadow justice secretary was reported as saying Mr Cameron was "writing propaganda material for the EDL".

Conservative Party chairman Baroness Warsi hit back, saying that "to smear the prime minister as a right wing extremist is outrageous and irresponsible". She called on Labour leader Ed Miliband to disown the remarks.

Meanwhile, the Muslim Council of Britain's assistant secretary general, Dr Faisal Hanjra, described Mr Cameron's speech as "disappointing".

He told Radio 4's Today programme: "We were hoping that with a new government, with a new coalition that there'd be a change in emphasis in terms of counter-terrorism and dealing with the problem at hand. "In terms of the approach to tackling terrorism though it doesn't seem to be particularly new.

"Again it just seems the Muslim community is very much in the spotlight, being treated as part of the problem as opposed to part of the solution."

In the speech, Mr Cameron drew a clear distinction between Islam the religion and what he described as "Islamist extremism" - a political ideology he said attracted people who feel "rootless" within their own countries.

"We need to be clear: Islamist extremism and Islam are not the same thing," he said.

The government is currently reviewing its policy to prevent violent extremism, known as Prevent, which is a key part of its wider counter-terrorism strategy.

A genuinely liberal country "believes in certain values and actively promotes them", Mr Cameron said. "Freedom of speech. Freedom of worship. Democracy. The rule of law. Equal rights, regardless of race, sex or sexuality.

"It says to its citizens: This is what defines us as a society. To belong here is to believe these things." He said under the "doctrine of state multiculturalism", different cultures have been encouraged to live separate lives.

'I am a Londoner too'

"We have failed to provide a vision of society to which they feel they want to belong. We have even tolerated these segregated communities behaving in ways that run counter to our values."

Building a stronger sense of national and local identity holds "the key to achieving true

cohesion" by allowing people to say "I am a Muslim, I am a Hindu, I am a Christian, but I am a Londoner... too". he said.

Security minister Baroness Neville-Jones said when Mr Cameron expressed his opposition to extremism, he meant all forms, not just Islamist extremism.



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"There's a widespread feeling in the country that we're less united behind values than we need to be," she told Today.

"There are things the government can do to give a lead and encourage participation in society, including all minorities."

But the Islamic Society of Britain's Ajmal Masroor said the prime minister did not appreciate the nature of the problem.

"I think he's confusing a couple of issues: national identity and multiculturalism along with extremism are not connected. Extremism comes about as a result of several other factors," he told BBC Radio 5 live.

Former home secretary David Blunkett said while it was right the government promoted national identity, it had undermined its own policy by threatening to withdraw citizenship lessons from schools.

He accused Education Secretary Michael Gove of threatening to remove the subject from the national curriculum of secondary schools in England at a time "we've never needed it more".

"It's time the right hand knew what the far-right hand is doing," he said.

"In fact, it's time that the government were able to articulate one policy without immediately undermining it with another."

Analysis

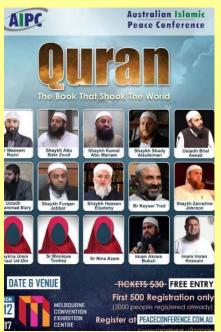
By Laura Kuenssberg (Chief political correspondent, BBC News channel)

David Cameron strode firmly into a debate where many politicians tread timidly.

In his view, such caution is part of the problem. In frank language he made abundantly clear he believes multiculturalism has failed. Any organisation that does not stand up to extremism will be cut off from public funds, and he wants the country to develop a stronger sense of shared identity.

It is the first time he has spoken so directly as prime minister, but there are echoes of what has gone before. Tony Blair edged away from multiculturalism in the years after the 7/7 bombings in London, and his ministers moved to stop funding any community organisation that did not challenge extremism. And what of Gordon Brown's continual quest to strengthen "Britishness"?

Behind the scenes, ministers are reviewing the "prevent" strategy, the policies designed to try to deal with extremism. But the review, which had been planned for publication this month, is likely to be delayed. It is not clear yet how Mr Cameron will translate his strong words into action.



displayed.

Women's faces hidden on Australian Islamic Peace Conference flyer, sparking outrage

Source: http://www.heraldsun.com.au/news/womens-faces-hidden-on-australian-islamic-peace-conference-flyer-sparking-outrage/news-story/565ef11479ce53341a1dc9b8fd17fbc6

Feb 08 – A controversial Islamic peace conference has sparked outrage after hiding the faces of three women advertised on a flyer to promote the event.

The Australian Islamic Peace Conference posted the pamphlet on Facebook last week with the leaders who are set to speak at the event next month.

But three female speakers — psychologist Monique Toohey, social worker Nina Trad Azam and Islamic teacher Umm Jamaal ud-Din — had their faces replaced with black ink.

The faces of all other 12 male speakers are

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Organisers have been slammed on social media with one user posting: "I came across the flyer earlier and was shocked. I couldn't articulate myself or write something about it. Seeing sister Monique's name made me sure that it's not their choice and also made me feel sick".

A spokesman for organisers the Islamic Research and Education Academy said they were trying to protect the women from right-wing extremism.

"Muslim women are particularly (being) humiliated and targeted in our streets, threatened and abused on social media,' he told the Daily Mail.

'Due to the growing Islamophobia our campaign team wanted to be extra cautious with female guests so they wouldn't be targeted in the streets."

The Herald Sun has contacted the Australian Islamic Peace Conference for further comment.

The conference will feature discussions, panels and youth affairs and is on between March 11 and 12.

Australia becoming 'a more racist country', survey finds

Source: http://www.abc.net.au/news/2017-02-09/australia-is-becoming-a-more-racist-country-survey/8254592

Feb 10 – An increasing number of people think Australia is a racist country, according to a new survey. The biannual Australian Reconciliation Barometer measures attitudes towards race and perceptions of reconciliation with Aboriginal and Torres Strait Islander communities.

It found both Indigenous people and the general community thought Australia had become a more racist place to live than just two years ago.

"Some serious issues ... underpin some of the areas of why we can't move forward fast enough as we battle through as a nation," Reconciliation Australia chief executive officer Justin Mohamed told ABC News Breakfast.

The survey, compiled last August, found 57 per cent of Indigenous people and 39 per cent of the general community thought Australia was a racist country. This is up from 48 per cent and 35 per cent, respectively, in 2014.

Survey key findings

- Many Australians (57% Indigenous, 39% general community) agree Australia is a racist country
- In last six months, 46% Indigenous people reported experiencing at least one form of racial prejudice, compared to 18% for non-Indigenous
- Almost all Australians (97% Indigenous, 89% general community) believe the relationship is important
- Most Australians (93% Indigenous, 77% general community) agree Indigenous cultures are important to national identity

"What we're seeing since the first survey in 2008 just after the National Apology to Stolen Generations is that whilst we've maintained a lot of goodwill since then, we aren't moving fast enough on issues of racism and trust," Mr Mohamed said.

The survey also found that in the six months leading up the survey, almost half (46 per cent) of Indigenous Australians experiences at least one form of racial prejudice — up from 39 per cent in 2014.

Mr Mohamed said this was worrying on one level, but could also represent an increased awareness of what racism was.

"There's been a fair bit of education about what is racism and we've seen the ads on television [and] within public transport," he said.

"So I think people can call out racism or, when it happens, they say, 'Well, that's exactly what it is, that's racism'.

"But the other side of it too, I think if you look at especially the last two years, there's been a number of incidents happen on sporting fields [and] on social media, which really highlights that there is a problem within the nation that needs to be addressed."

Most Australians think reconciliation is important

Despite the increased perception of racism, most Australians believe the relationship between Indigenous and non-Indigenous people is important and reconciliation can be achieved.

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It found 93 per cent of Indigenous people and 77 per cent of the general community thought Aboriginal and Torres Strait Islander cultures were important to Australia's national identity.

And a majority of people viewed the relationship between the two as important; however, the figures were slightly lower than the first 2008 survey.

However, he said the were still institutional barriers to reconciliation that needed to be addressed.

"Attempts to weaken legal protections under the Racial Discrimination Act are ongoing; Australia is yet to implement its international obligations under the United Nations Declaration of the Rights of Indigenous Peoples; and the Australian constitution still allows for racial discrimination in our nation's founding document," he said.

"The reality is that unless goodwill is followed through with significant reform at an institutional level, Australia will continue to fall short of its full potential as a reconciled nation."

How German guns often end up in child soldiers' hands

Source: https://www.thelocal.de/20170210/study-shows-how-german-guns-are-landing-in-child-soldiers-hands

Feb 14 – A report by the German Alliance for Child Soldiers and other non-profits on Thursday shows that child soldiers in multiple countries often end up using German-made arms.



Michael Davies from Sierra Leone was once a child soldier fighting in the civil war-torn west African country. His weapons of choice: German.

"When I had to fight as a young person in Sierra Leone, I saw many G3 rifles," Davies said in a statement regarding the German-made Heckler & Koch gun.

"Weapon deliveries to conflict regions urgently need to stop. They inflame the conflicts." Davies is far from alone in his experience with German weapons. A new report by the German Alliance for Child Soldiers and other non-profits found that there are currently around 250,000 child soldiers in at least 20 conflict-ridden countries who are forced to spy, fight, carry supplies and even be sex slaves. And often German arms end up in these child soldiers' hands.

"The study proves that Germany delivers small weapons of the deadliest kind to many conflict regions - also those where child soldiers are deployed, for example in the Middle East, India, Pakistan or the Philippines," said Ralf Willinger, children's rights expert and spokesman for the child soldiers alliance, in a statement.

"Germany is thus jointly responsible for the escalation of armed conflicts and the suffering of children in these countries."



Germany exported €47 million-worth of small arms in 2016 - €15 million more than the year before, the study notes - an increase of nearly 50 percent. More than a third of these exports end up going to countries outside of the EU or NATO.

German law forbids the export of weapons to conflict-torn countries, but the report says weapons still manage to cross borders illegally. On top of that, German weapons may be licensed to be produced in other countries, but where they go afterwards becomes unclear.

"Above all... many German weapons are attained through legal or illegal reselling to conflict zones, or were already there before the outbreak of the conflict due to existing licensed production," the report states.

Examples in the report of this spread include Colombia, where during the country's decades-long conflict, child soldiers were used by guerilla groups like FARC. Until the 1990s, German weapons were the standard of the country's military, according to the report. But these weapons ended up with FARC through illegal reselling. Germany halted the direct sale of arms to Colombia, but their weapons also were smuggled in through Ecuador.

Another example is Yemen: Saudi Arabia is one of Germany's biggest arms purchasers, and it is also involved in conflict in Yemen, where child soldiers are often used.

The report calls for a reform and standardization of legislation regarding weapons exports, such as considering the use of child soldiers in criteria for authorizing exports.

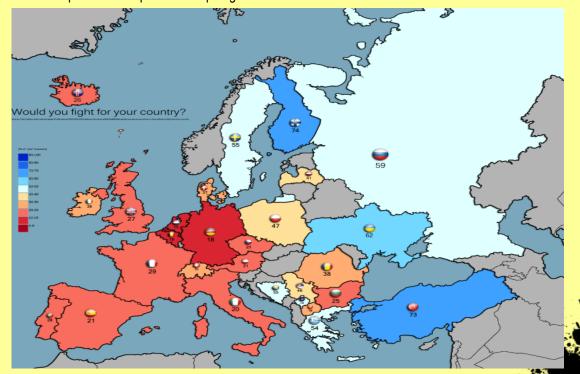
It also calls for Germany to lift its own military recruitment age to 18. Germany allows 17-year-olds to join the Bundeswehr with parental permission, though they are limited to using weapons during training, and are not sent on international missions.

According to NGO <u>Child Soldiers International</u>, a large majority of countries worldwide only recruit people over 18 into their military. Germany still holds on to an exception under international law that allows those under 18 to volunteer as long as it's not for violent conflicts.

Germany last year reported a <u>record number of underage recruits</u>, prompting criticism from Die Linke (The Left Party)

Percentage of Europeans Who Are Willing To Fight A War For Their Country

Source: http://brilliantmaps.com/europe-fight-war/



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Jan 27 – The map above shows the percentage of residents in various European countries who are willing to fight and go to war for their country.

Full results below: From high to low, these are the percentages by country:

- 74% Finland
- 73% Turkey
- 62% Ukraine
- 59% Russia
- 58% Kosovo
- 55% Bosnia and Herzegovina
- 55% Sweden
- 54% Greece
- 47% Poland
- 46% Serbia
- 41% Latvia
- 39% Switzerland
- 38% Ireland
- 38% FYROM

- 38% Romania
- 37% Denmark
- 29% France
- 28% Portugal
- 27% United Kingdom
- 26% Iceland
- 25% Bulgaria
- 23% Czech Republic
- 21% Austria
- 21% Spain
- 20% Italy
- 19% Belgium
- 18% Germany
- 15% The Netherlands

The results are from a <u>2015 WIN/Gallup International global survey</u>. The sample size and methodology was as follows:

A total of 62,398 persons were interviewed globally. In each country a representative sample of around 1000 men and women was interviewed either face to face (30 countries; n=32258), via telephone (12 countries; n=9784) or online (22 countries; n=20356). Details are attached. The field work was conducted during September 2014 – December 2014. The margin of error for the survey is between 2.14 and 4.45 +3-5% at 95% confidence level.

Europe is the continent with the fewest people willing to fight a war for their country. Globally, an average of 61% of respondents in 64 countries said they would. Morocco (94%), Fiji (94%), Pakistan (89%), Vietnam (89%) and Bangladesh (86%) had the highest percentage willing to fight.

The country with the fewest people willing to go to war was Japan, with just 11% of respondents saying they would fight.

Since World War Two, Europe has been relatively peaceful with major exceptions of the Yugoslav Wars in the 1990s and various political suppressions during the Cold War. However, the 19th century was also a relatively peaceful time for Europe that ended with the start of World War I.

Hate groups increase for second consecutive year, while Patriot groups decline

Source: http://www.homelandsecuritynewswire.com/dr20170215-hate-groups-increase-for-second-consecutive-year-while-patriot-groups-decline

Feb 15 – The number of hate groups in the United States rose for a second year in a row in 2016 as some radical right elements were energized by the candidacy of Donald Trump, according to the Southern Poverty Law Center's (SPLC) annual census of hate groups and other extremist organizations, released yesterday.

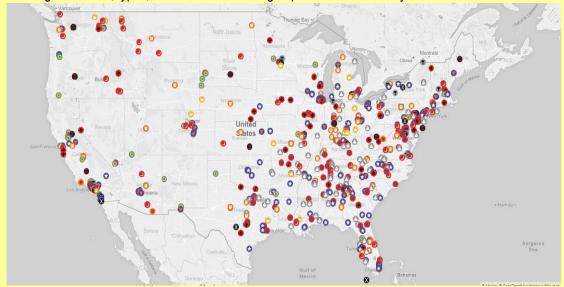
The most dramatic groups was the poor tripling of anti-Muclim hate groups.

The most dramatic growth was the near-tripling of <u>anti-Muslim hate groups</u> — from 34 in 2015 to 101 last year.

The SPLC <u>says</u> that the growth has been accompanied by a rash of crimes targeting Muslims, including an arson that destroyed a mosque in Victoria, Texas. Figures compiled by the FBI dovetail with those of the

SPLC – and the latest FBI statistics show that hate crimes against Muslims grew by 67 percent in 2015, the year in which Trump launched his campaign.

<u>The report</u>, contained in the Spring 2017 issue of the SPLC's *Intelligence Report*, includes the <u>Hate Map</u> showing the names, types, and locations of hate groups across the country.



The SPLC found that the number of hate groups operating in 2016 rose to 917 — up from 892 in 2015. The number is 101 shy of the all-time record set in 2011, but high by historic standards.

"2016 was an unprecedented year for hate," said Mark Potok, senior fellow and editor of the *Intelligence Report*. "The country saw a resurgence of white nationalism that imperils the racial progress we've made, along with the rise of a president whose policies reflect the values of white nationalists. In Steve Bannon, these extremists think they finally have an ally who has the president's ear."

SPLC notes that the overall number of hate groups likely understates the real level of organized hatred in America as a growing number of extremists operate mainly online and are not formally affiliated with hate groups.

Aside from its annual census of extremist groups, the SPLC found that the rhetoric employed during the presidential campaign reverberated across the nation in other ways. In the first ten days after the election, the SPLC documented 867 bias-related incidents, including more than 300 that targeted immigrants or Muslims.

Also, in a post-election SPLC survey of 10,000 educators, 90 percent said the climate at their schools had been negatively affected by the campaign. Eighty percent described heightened anxiety and fear among students, particularly immigrants, Muslims, and African Americans. Numerous teachers reported the use of slurs, derogatory language, and extremist symbols in their classrooms.

In contrast to the growth of hate groups, antigovernment "Patriot" groups saw a 38 percent decline — plummeting from 998 groups in 2015 to 623 last year. Composed of armed militiamen and others who see the federal government as their enemy, the Patriot movement over the past few decades has flourished under Democratic administrations but declined dramatically when President George W. Bush occupied the White House.

Why Israelis Like Trump

By Efraim Inbar

Source: http://www.meforum.org/6527/why-israelis-like-trump

Feb 07 – Israel is a very pro-American country, maybe the most in the world. As in the past, Israelis followed the U.S. presidential election with extreme interest, amazed that the American political system did not produce more palatable presidential candidates.

In a poll taken following Donald Trump's victory, <u>83% of Israelis</u> said they consider Trump a pro-Israel leader; by contrast, another poll showed that 63% view <u>Barack</u> Obama as the "worst" U.S. president with regard to Israel in the last 30 years. Indeed,

after eight years of tense relations with the Obama administration, most Israelis are relieved to see a friend in the White House. Moreover, on issues that are important to Israel—Iran and the Palestinians—there seems to be a greater convergence of views than before.



Trump's stance on Iran is particularly important now, as Iran recently held a military exercise to test its missile and radar systems after the Trump administration imposed sanctions on Tehran for a recent ballistic missile test. When Israeli Prime Minister Beniamin Netanyahu visits Trump Washington DC this month, it's worth following what the leaders will say about the Iran nuclear deal and what kind of role the U.S. will play in Israel going forward.

Netanyahu fought tooth and nail against the nuclear agreement negotiated by the Obama administration with Iran. Trump slammed it as "one of the dumbest deals ever." Senior members of his administration share this view and are apprehensive about Iranian intentions.

Obama gave a high priority to negotiating the Israeli-Palestinian conflict and was obsessed with Jewish settlements in the West Bank. He estranged Israelis by not distinguishing between Israeli building in Jerusalem and in the West Bank. He often dished out "tough love" to Israel, as he called it when addressing a synagogue in Washington, DC.

Trump and his advisors, by contrast, seem more relaxed about the Israeli-Palestinian issue, correctly understanding that it is by no means the most important problem in the chaotic Middle East.

Even the White House criticism of new settlement building plans – it called them unhelpful to the peace process, <u>but added that they are not impediments to peace</u> – represents a positive change to many Israelis.

Furthermore, Trump's promise to move the American embassy in Israel from Tel Aviv to Jerusalem seems more sincere than similar promises made by previous presidential candidates. Throughout his campaign and into the early days of his presidency, Trump has shown that he follows through, and is more concerned with fulfilling his promises than flattering the electorate. Israelis cannot understand why other countries refuse to accept Jerusalem as their capital and to place their embassies in western Jerusalem, which is not, after all, disputed territory. Picking David Friedman – an Orthodox, pro-settlement, Jewish American who owns an apartment in Jerusalem – as ambassador to Israel lends credence to Trump's promise.

Several of Trump's positions that draw tremendous criticism at home and abroad are less problematic for Israelis. For example, the idea of building a wall along the US-Mexico border to stop illegal immigration is viewed in Israel as the expression of the sovereign right of any nation to prevent undesirable elements from entering its territory. Israel has built walls and fences to stop the infiltration of terrorists and illegal immigrants from Palestinian territory.

Trump's diatribes against Muslims are unseemly, but Israelis can understand where he is coming from, since they have been subjected to Muslim terrorism and Arab state aggression for 100 years. The political correctness of the Obama years – when the president refused to acknowledge radical Islam as the source of most of the terrorism in the world – frustrated Israelis.

Thus, Trump's willingness to speak his mind is appreciated in Israel, even if some of his statements border on the vulgar. It is refreshing to the Israeli ear to hear an American presidential candidate not beating around the bush, but rather addressing issues without the constraints of liberal political correctness. This quality has earned Trump some popularity in Israel.

Israelis well know that a portion of the Washington bureaucracy, especially at the Department of State, and some of the media and academic elites are unfriendly to Israel. They welcome a president who dislikes that bureaucracy and is critical of those elites.

We should not forget that since the late 1960s, Israelis have largely preferred Republican presidents. Yitzhak Rabin, who served as Israel's ambassador to Washington from 1968 to 1973, openly supported the Republican presidential candidate, Richard Nixon. Similarly, Prime Minister Netanyahu made his preference for Mitt Romney over Obama abundantly clear. Unlike many European politicians and American Democrats, Israelis are substantially nationalist and conservative. The conservative Israeli Likud party has won more elections than any other party since 1977.

Israelis followed the decline of American international fortunes during the Obama years with alarm. It frightens them to see America so weakened.

Thus, a Trump who wants to make his country great again by increasing defense spending and standing tall against America's enemies abroad (especially Iran) strikes a responsive chord among Israelis.

Finally, Trump's family biography endears him to Israelis. His daughter converted to Judaism and belongs to an Orthodox community. Trump has Jewish grandchildren of whom he is proud. His Jewish son-in-law, Jared Kushner, is an important advisor. Living in New York may have sensitized him to the sensibilities of the Jewish community. Moreover, he has always expressed strong support for the Jewish state.

After eight years of the distant President Obama in the White House – a president who used his last days in office to lash out at Israel at the UN – it should not be surprising that Israelis are looking forward, with some trepidation but even more hope, to working with the new American president. While the euphoria displayed by some right-wing circles in Israel is not warranted, an improvement in bilateral relations is a realistic expectation.

Efraim Inbar, a professor emeritus of political studies at Bar-Ilan University, is the director of the Begin-Sadat Center for Strategic Studies and a Shillman-Ginsburg fellow at the Middle East Forum.

Nowhere to go: Nigeria's crowded camps fuel disease fears from open defecation, Boko Haram and snakes

Source http://news.trust.org/item/20170214090600-9xk6r/

Feb 14 – Every time she needs to go to the toilet, Shadima Irima recalls the moment Boko Haram

militants stormed her home in northeast Nigeria and killed her cousin before her eyes.

Watching dozens of people lining up outside of a couple of latrines in a camp for the displaced

in Maiduguri, the capital of Borno state, the 38-year-old spoke about the fear she feels every time she ventures into the bush to relieve herself.

"I am scared of snakes, bad men and Boko Haram," Irima told the Thomson Reuters Foundation, explaining how looking after her children, fetching water and cooking meals means she cannot afford to wait for hours to use the few toilets in the camp.

"Anything can happen in the bush, like rape.

Even thinking about going to the toilet there scares me," she said



outside her hut in the Muna Garage camp in Borno, the heart of Boko Haram's seven-year bid to create an Islamic state in northeast Nigeria.

The jihadists' insurgency has displaced some 1.8 million people and destroyed three-quarters of water points and toilets in the region - piling pressure on the limited facilities in camps and communities, and sparking fears of disease outbreaks.

A lack of toilets - there is an average of one latrine for every 100 people uprooted by Boko Haram - is not only leaving women like Irima prey to sexual violence, but is also driving people to defecate in the open, according to aid agencies.

Open defecation in crowded camps and communities is putting people at risk of waterborne diseases from cholera and diarrhoea to typhoid, with the danger exacerbated by limited access to water, a lack of knowledge, and poor hygiene, experts say.



A community volunteer leads a session on water and sanitation for the displaced in Maiduguri, Nigeria, Jan 22, 2017. Thomson Reuters Foundation/Kieran Guilbert

"Changing attitudes and behaviour is a challenge as many of the displaced have fled from rural areas, where they are used to defecating in the bush," said Kannan Nadar, head of water and sanitation at the U.N. children's agency (UNICEF) in Nigeria.

"Even if one percent of the displaced defecate in the open, it affects everyone around them," Nadar added.

Shame and desperation

More than a quarter of Nigeria's population - some 46 million people - defecate in the open, according to the country's latest national health survey from 2013.

For the more than 400,000 displaced living in camps across northeast Nigeria, the reality is even worse.

Open defecation has been recorded in around two-thirds of the 164 sites for those uprooted by the conflict, and only a dozen of these settlements have a working drainage system, according to the International Organisation for Migration (IOM).

In some camps, there is only one toilet per 1,000 people, said staff at the National Emergency Management Agency (NEMA).

"We don't want to relieve ourselves in the open, but what choice do we have?" said 63-year-old Moustapha Abacha, as a group of men nodded shyly in agreement in the Muna Garage camp. "We are ashamed about it, but life here is desperate," he added.

Children queue up to collect water at a refugee camp in Maiduguri, Nigeria, Jan 17, 2017. Thomson Reuters Foundation/Kieran Guilbert



Efforts to improve hygiene and sanitation in humanitarian crises often focus on infrastructure - such as building toilets - at the expense of changing attitudes, local aid workers said.

In one latrine in the Muna Garage camp, the pit was full of plastic bottles into which people had defecated before throwing them away - thus blocking the toilet for several days.

To challenge such practices and inform people about how open defecation can lead to the spread of deadly diseases, aid agencies are sending health volunteers to camps and communities.

In a dusty yard in a quiet Maiduguri neighbourhood, dozens of displaced women

and girls huddled on the ground as they learnt about topics ranging from cholera to menstrual hygiene. "Most people are keen to listen and quick to learn," said volunteer



Rukaiya Mohammed, a teacher in her early twenties.

"We aren't seeing many children defecate in the open, and that is one of the most important achievements," she added.

Waiting all day

In camps and communities across Borno state, lines of women and children waiting next to water points with garish yellow and orange buckets and jerrycans stretch far into the distance.

While tackling open defecation and poor hygiene is key, aid agencies are also striving to improve infrastructure to help some four million people who lack access to safe water, the U.N. Office for the Coordination of Humanitarian Affairs (OCHA) said.

Solar and mechanised boreholes and hundreds of water points are being installed in camps and communities, yet a third of the displaced still receive less than 15 litres of water a day for their cooking, cleaning and washing needs, according to OCHA.

This shortage is driving many people to travel long distances to collect water from polluted streams and older boreholes where the water is more likely to be contaminated, said Francis Tabu of the International Medical Corps (IMC).

"We are facing a huge challenge to install latrines and water points in local communities, due to a lack of space in neighbourhoods where everything and everyone is packed so tightly together," the emergency program coordinator said.

Borno's health ministry has also established a cholera task force ahead of the rainy season this summer, aware of how the disease could quickly spread through jam-packed camps and communities amid poor sanitation and limited access to water.

"The sector is trying to learn lessons from past outbreaks in a region where people are in a vulnerable situation," said Salomon Rakotovazaha, the IMC's country director for Nigeria.

For most of the displaced, like mother-of-three Hauwa Adam, the threat of disease pales into comparison with their daily struggle to get by. Living in Muna Garage, the 30-year-old spends most of her days fetching what little water is available.

"I have to trek miles to the water point, and queue all day to collect it," said Adam, who takes her children along because there is no school for them, and no one else to look after them.

"What kind of life is this?"





Source: http://drones.cnas.org/drones/

Rioting erupts in immigrant-dominated Swedish suburb

Source: http://www.foxnews.com/world/2017/02/21/rioting-erupts-in-immigrant-dominated-swedish-suburb.html

Feb 21 – Riots erupted in a heavily immigrant Stockholm suburb Monday night, as masked looters set cars ablaze and threw rocks at cops, injuring one police officer, Swedish officials said.



CBRNE-TERRORISM NEWSLETTER - February 2017

The violence in Rinkeby began around 8 p.m., when officers arrested a suspect at an underground station on drug charges, The Local reported. A group soon gathered, hurling rocks and other objects at officers and prompting one cop to fire his gun "in a situation that demanded he use his firearm," police spokesman

Lars Bystrom said.
"But nobody has be



"But nobody has been found injured at the scene and we have checked the hospitals and there hasn't been anyone with what could be gunshot wounds," Bystrom added.

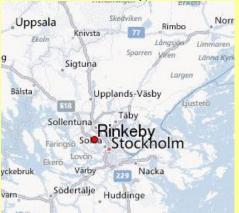
It came just days after President Trump was mocked during a Saturday campaign rally for mentioning Sweden alongside a list of European targets of terror. Trump later said his "You look at what's happening last night in Sweden" remark

was in response to a Fox News report on the country's refugee crime crisis that aired on Friday evening.

"Sweden. They took in large numbers [of refugees]," Trump added at the Florida rally. "They're having problems like they never thought possible."

Sweden's official Twitter account – which is operated by a different user each week – tweeted at Trump on Monday morning: "Hey Don, this is @Sweden speaking! It's nice of you to care, really, but don't fall for the hype. Facts: We're OK!"





Hours later, the Rinkeby riots began, with a second wave starting around 10:30 p.m. Seven or eight cars were set on fire and many stores saw looting, The Local reported. A photographer from media outlet Dagens Nyheter said a group of 15 people beat him as he tried to document the chaos.

"I was hit with a lot of punches and kicks both to my body and my head. I have spent the night in hospital," said the photographer, who was not named. The rioting ended just after midnight.

No arrests were made; however, reports were filed on three violent acts, violence against a police officer, two assaults, vandalism and aggravated thefts, authorities said.

Rinkeby is the same area where an <u>Australian "60 Minutes"</u> crew was attacked by a group of men in April 2016. The film crew was attempting to enter a so-called "no go zone," which authorities deny they use as a label. Rinkeby,

however, has been officially classified as one of 15 "particularly vulnerable" areas across Sweden.

The country's prime minister, Stefan Lofven, said Monday, "Yes, we have challenges like all other countries. There's no doubt. We have a situation in the world where 65 million people had to flee their countries last year, the year before that. 65 million. So that's a war for us together." He also said Sweden was investing more in housing, technology and its welfare system.

Reports of rapes in Sweden jumped 13 percent in 2016 compared to the previous year, and reports of sexual assaults were up 20 percent, according to preliminary data from the Swedish National Council for Crime Prevention.

Recent migration to Sweden hit its peak in 2015 with more than 160,000 asylum applications. It dropped to almost 30,000 in 2016.





When Every Second Counts: Novel Device (Thoraxs) to Shorten Chest Tube Insertion Time in a Pre-hospital Setting

Drori, A., Kan-tor, Y., Nadorp, B. et al. Pulm Ther (2016) 2: 215. Source: http://link.springer.com/article/10.1007/s41030-016-0020-4

Tension pneumothorax is a life-threatening medical emergency mostly associated with chest trauma. It is considered a leading cause of death due to injury and represents a substantial portion of potentially



preventable deaths in battlefield. The accepted therapeutic approach is manual thoracostomy with chest tube insertion. This is a relatively simple procedure when performed by skilled hands and in optimal conditions. In the battlefield and in other pre-hospital settings or when performed by unprofessional personnel. it may become complicated and time-consuming.

We describe a novel technique for the treatment of pneumothorax in the pre-hospital setting, utilizing a quick, one-handed, easy-to-apply approach.

ThoraXS:

- Rapid and easy penetration into the pleural space in under 30 seconds!
- Suitable for patients of all sizes (pediatrics, obese etc.)
- Simple and robust design made to withstand the most extreme conditions by the most extreme caregivers
- Easy tube guidance for optimal positioning
- No sharp edges or blades Increased patient safety
- Affordable priced to compete with current widely used tools





NHS to use drones to help chemical, bio and nuke response teams

Source: https://www.newscientist.com/article/2075625-nhs-to-use-drones-to-help-chemical-bio-and-nuke-response-teams/



Jan 2016 – Paging doctor drone. Specialist ambulance teams in the English National Health Service will get a technological boost later this year, when they start using remote-controlled UAVs to help handle emergencies.

NHS England has 15 Hazardous Area Response Teams (HART) that deal with medical emergencies involving chemical, biological or nuclear materials. They work in difficult scenarios involving confined spaces, heights or water. Last month the National Ambulance Resilience Unit (NARU), which manages the teams, awarded a contract to provide each HART unit with a reconnaissance drone, having tested proposed systems at military sites in October.

The drones will have video cameras on board to provide an eye in the sky at accident scenes. Each HART team will have a trained drone operator working alongside paramedics. "The drone will allow the HART team leader to observe the high-risk incident ground quickly and prior to the deployment of staff," says Christian Cooper of NARU. The drone will also give teams a quick overview of patients' condition and location, allowing the leader to direct paramedics towards them, he says.

Government drones

The NHS is not the only emergency service investigating drones – police in Dorset, Devon and Cornwall began a six-month trial last November, using them to help with missing person searches and crime scene photography.

NARU is working with other emergency services and government departments to develop a combined national strategy for drones, which will determine the final specifications for HART's drones. Each is expected to cost between £10,000 and £30,000. NARU is also working with the Civil Aviation Authority to ensure the safe use of airspace.



NARU has not decided which regions of England will receive drones first, but expects teams to start using the technology soon. "The first NHS Ambulance Services to replace their technology will receive the specified drone for use by their HART teams this year," says Cooper.

Online app for new HART Standard Operating Procedures

Source: https://naru.org.uk/online-app-new-hart-standard-operating-procedures/

Jan 24 – Final drafts of the HART Standard operating procedures (SOPs) have now been completed by



the drafting groups and they have been sense checked by members of the National Operations Group.

NARU is developing a new online interface for staff to be able to access the revised SOPs which will be via an internet Application (app) which should be accessible on most devices. The app will be 'beta tested' between January and March 2017.

HART staff will be able to access the app from the end of January onwards and NARU will be releasing some guidance and FAQ's in January to guide staff

on how to provide feedback and amendments on the current draft content.

NARU Compliance Officer Christian Cooper says:

"Please note that we need our operational HART staff to review these SOPs and provide us with feedback. They will not be completed, nor will they go-live, until operational users have provided their feedback."

A test version of the app will be available throughout February and March. HART Managers and Training Managers will initially have access followed by all operational HART staff a couple of weeks later.

Special Operations Recruitment – Psychological Attributes

Source: https://naru.org.uk/special-operations-recruitment-psychological-attributes/

Jan 23 - NARU has commissioned a research study to explore the psychological characteristics

that are required for effective performance in special operational roles within the ambulance service.

This work, which is being conducted by psychologists from Zeal Solutions, is well underway and a large number of ambulance staff that perform in these roles have participated in a series of in-depth interviews and surveys.

The research has successfully identified a number of key characteristics that are considered critical for effective performance in such roles.



Work now continues to explore these characteristics with the aim of enhancing the recruitment process for staff wishing to apply for a special operational role.

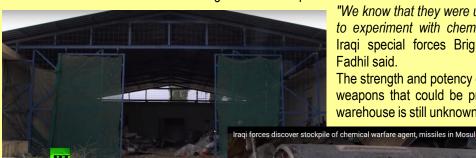
In 2017/18 a new wave of psychological assessments and selection processes will be tested with Trusts and staff as part of a special validation exercise.



Iraqi forces discover ISIS chemical weapons arsenal in Mosul

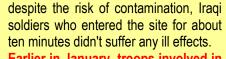
Source: https://www.rt.com/news/375414-mosul-isis-chemical-weapons/

Jan 28 – In a warehouse 2 kilometers (1.2 miles) away from the Tigris River, reporters were shown three large refrigerated cargo containers holding an unidentified substance hidden among piles of coal, which upon further analysis was found to be mustard agent. There was also more than a dozen surface-to-surface rockets bearing Russian inscriptions.



"We know that they were using this place to experiment with chemical weapons," Iraqi special forces Brig. Gen. Haider Fadhil said.

The strength and potency of the chemical weapons that could be produced at the warehouse is still unknown, although, and



Earlier in January, troops involved in the liberation of Mosul University found that a dormitory there had been converted into a makeshift chemical weapons factory, using equipment

RI

and ingredients pilfered from the College of Sciences, including radioactive material. Specialists had to be called in to decontaminate the area.

While all sides in the Syrian conflict have been accused of using chemical weapons, Iraqi and US officials have been particularly concerned about their use by IS. In November, a report by the risk analysis company IHS claimed IS used chemical weapons in Syria and Iraq at least 52 times since 2014.

However, the number of civilians killed by chemical weapons by IS is still low compared to more conventional means such as bombs and bullets, as the terrorist group lacks the capacity to make more advanced weapons.

Since October 2016, Mosul has been besieged by Iraqi forces, backed by the Kurdish peshmerga, Shiite militias and US-led coalition forces trying to 'liberate' the city from IS.

Prior to its capture in 2014, Mosul was Iraq's second-biggest city but has since been a stronghold of IS militants and one of their key bases of operations outside Syria. On January 22, the Iraqi government declared the eastern part of Mosul 'liberated', but there is no indication yet of when IS will be fully driven out of the city.

Water Balloons. Weapons of Mass Destruction and the PTAB

Source: http://www.ipwatchdog.com/2017/01/27/water-balloons-weapons-mass-destruction-ptab/id=77637/

Jan 27 – Josh Malone has eight kids. On a hot Texas days, he and his kids enjoy a water balloon fight to cool things off. Josh is normally in the rear with the gear. He is the family reloader, filling and tying water balloons to supply his kids with the ammunition necessary to keep the back yard action going. It was during one of these skirmishes that Josh figured he could replace himself if he just created a weapon of mass destruction. He thought of several ways of doing it and then, like so many inventors before him, he obsessively tinkered until he finally invented one



that worked. It screws on a garden hose and has dozens of long tubes. Attached to the end of each tube is a self-sealing balloon. You just turn on the hose and when the balloons are substantially filled, you shake them, they fall off and the kids launch another attack. Leonardo da Vinci would be proud.



He named it a Bunch O Balloons. Josh knew then that he had a winner and building a company based on his own invention became his American Dream. He a provisional patent application on February 2014. Things went quickly at the U.S. Patent and Trademark Office (USPTO) and his first patent was issued about 18 months after the provisional application was filed. Patenting proved Josh was the inventor and that he had an exclusive right to his invention. But more importantly, the patent could be collateralized to attract investment to build his startup. Investors look at upside potential and downside risks. On the upside a patent's exclusive right meant that if Bunch O Balloons took off. Josh would be able to

keep competition at bay long enough to establish his startup and return the investment. On the downside, a large company with deep pockets, existing customers and solid distribution capabilities could steal the invention and massively commercialize it thus flooding the market and killing Josh's startup. But patents mitigated this risk. In the worst case, Josh's investors could take control of the patent and return their investment by defending it against the same infringers who killed the company.

Josh manufactured an initial batch of products and then ran a crowd funding campaign on Kickstarter. This campaign was a hit, generating 598 orders on day one and bringing in nearly a million dollars overall. Within a couple of days it triggered national media coverage in Sports Illustrated, Time, Good Morning America, and the Today Show. *Bunch O Balloons* went viral with 9.6 million YouTube views. I can only imagine how Josh must have felt... this would mean everything to his growing family.

Over the next few months, orders kept pouring in. He was contacted by several ethical manufactures seeking to license his invention. With business picking up fast, Josh partnered with a company called ZURU, who is now marketing, manufacturing and selling *Bunch O Balloons*. Josh achieved the American Dream. But that means nothing under the current American patent system.

Kickstarter is regularly watched by potential investors, customers and ethical businesses. But there are others. Infringers also monitor Kickstarter for potential new products and as it turns out, the better a product does on Kickstarter, the more likely it will get knocked off. *Bunch O Balloons* got knocked off by TeleBrands just a few months after Josh launched his Kickstarter campaign. (Kickstarter has lobbied for the Innovation Act, which would have done even more damage to inventors).

Today, the U.S. patent system favors infringers like TeleBrands. In fact, it is a CEO's fiduciary duty to steal patented technologies, massively commercialize them and then never talk to the inventor unless they sue. In the vast majority of cases inventors cannot access the courts because contingent fee attorneys and investors have largely left the business, so in most cases the infringer gets

to keep the invention free of charge.

Much has been written about how Congress in the America Invents Act of 2011 stacked the deck against inventors by creating the Patent Trial and Appeal Board (PTAB) in the USPTO.

www.cbrne-terrorism-newsletter.com



The PTAB turned property rights upside down by immediately invalidating the property right already granted by the USPTO and then forcing the inventor to reprove the validity of the same property right. Under the leadership of Michelle Lee, the deck was stacked even further by setting PTAB evaluation standards much lower than the court. Michelle Lee's decision to set these low standards weaponized the PTAB for the mass destruction of patents. And a weapon of mass destruction they certainly are. The vast majority of patents evaluated in the PTAB are either invalidated or neutered. Big infringing corporations know this.

So when Josh sued TeleBrands for patent infringement, TeleBrands responded by filing a PTAB procedure called Post Grant Review (PGR). The court did not stay the case pending the outcome of the PGR and ordered a preliminary injunction against TeleBrands. TeleBrands appealed the preliminary injunction to the Federal Circuit.

During the pendency of the appeal, the PTAB rendered its verdict – Josh's patent was invalidated as indefinite under Section 112. The claims state that the balloon must be "substantially filled", which according to the PTAB is not defined: "... the Specification does not supply an objective standard for measuring the scope of the term 'filled' or 'substantially filled.""

But how else can you write the claims? You could use grams of water if a balloon was a solid structure, or perhaps if all balloons were exactly the same. But manufacturing processes that make balloons are not accurate processes. The thickness of the balloon's wall varies greatly from balloon to balloon and even in the same balloon. Yet Michelle Lee's PTAB invalidated the patent that Michelle Lee's USPTO had just issued. (Five other patents have been issued to Josh, one even refers to this very PTAB proceeding as prior art, yet it was still granted by the examiner. I kid you not.)

The Federal Circuit, while deciding a preliminary injunction was properly granted, addressed the PTAB decision in its oral arguments and in its decision. In oral arguments Judge Moore stated, "You have to be able to say substantially," cause there's a million patents that use the word substantially." And in their written decision the Federal Circuit explained: "We find it difficult to believe that a person with an associate's degree in a science or engineering discipline who had read the specification and relevant prosecution history would be unable to determine with reasonable certainty when a water balloon is "substantially filled." Indeed. I suspect that all eight of Josh's kids can do that too.

Josh's case is not over. Already he's spent multiples of what he earned in his Kickstarter campaign and probably everything he's made in this entire American Dream. Yet, he's got years left of litigation and millions more to spend.

Patents can be invalidated in multiple ways by different branches of government and under different standards. Often these branches and standards disagree with each other, as is the case here. Today nobody can know if a patent is valid until the Federal Circuit or the Supreme Court says it is.

But this is the world inventors live in. If you invent something marketable, you will pay for it with years in court and millions of dollars. Nobody respects patent rights. They don't have to. It is better to steal them and litigate the inventor into oblivion. Josh is fortunate to have a partner willing to fight with him and accept considerable financial burden. But most inventors cannot even open the courthouse doors.

Defense Industry Struggling to Find Consistent Anti-Chemichal Method

Source: http://i-hls.com/2017/02/defense-industry-struggling-find-consistent-anti-chemichal-method/

Feb 01 – Battelle, a nonprofit research and development institute, recently said the key to preparing for the rapidly growing threat of biological or chemical weapons is developing countermeasures with technology that is tested against live agents. According to homelandprepnews.com, the recommendation was directed to defense manufacturers developing detectors, protection and medical countermeasures designed to combat chemical, biological, radiological, nuclear, and explosive (CBRNE) threats.

Battelle explained: "Live-agent testing is the ultimate standard for validating performance of detection systems. It involves controlled-environment exposure of developmental gear or equipment to actual biological threats as well as other advanced threats."

Live-agent testing is typically conducted near the end of the product development process. But Battelle said adding live-agent testing early into the product development cycle can better prepare manufacturers to meet government requirements and create a competitive advantage.

The Defense Threat Reduction Agency also recommended early live-agent testing to academic and commercial institutions that are developing chemical and biological defense technologies.

The U.S. Department of Defense (DoD) and the Department of Homeland Security (DHS) warned that chemical and biological threats were increasing as it released its annual report to Congress on the military's chemical and biological defense programs.

"Rapid advancements in technology are making it easier for an adversary, whether state or non-state, to develop chemical and biological (CB) weapons," DOD and DHS said in the report. "The DoD faces complex threats that pose enduring risks to our Joint Force and the Homeland."

Battelle, which designs and manufactures products and delivers critical services for government and commercial customers, said testing challenges were more pronounced for government agencies. The company cited the approximately \$200 million decline in the DoD's CBRNE annual budget.



New Arrival – HBI-120 Backscatter X-ray Imager

Source: http://www.hazmatlink.com/

Heuresis' HBI-120 is the first-ever handheld x-ray imager that enables Customs & Border Patrol agents, and other inspectors to guickly find concealed threats and contraband in motor vehicles, ships,



aircraft, steel drums, waste receptacles, mailboxes and other locations. The HBI-120 lets law-enforcement officers, private security personnel and others, to quickly inspect abandoned bags and packages for threats, without opening them. The HBI-120 has safety interlocks, a built-in camera and flashlight. The instrument can also be mounted on a robot and operated remotely via USB cable, Wi-Fi or Bluetooth radio control. The Wi-Fi and Bluetooth radios can be disabled for safety purposes.

HBI-120 is a rugged, ergonomic, handheld backscatter x-ray instrument that enables users to quickly and cost-effectively find concealed explosives, narcotics and other contraband, even through 12- gauge (over 2 mm thick) steel

— more than twice the thickness of typical motor-vehicle body panels — with none of the limitations of portable transmission x-ray systems. The HBI-120 weighs only 6.6 lbs. (3.0 kg) and images objects with a miniaturized, internal 120 keV x-ray generator that makes a raster-scanning pencil beam of x-rays to scan objects of interest. As the handheld HBI-120 is moved over the object, a 2- dimensional backscatter x-ray image of the object is displayed in real-time on HBI-120's high-resolution transflective LCD touchscreen and saved in the instrument's memory.

Older portable transmission x-ray systems require the x-ray source module and the detector module to be placed and aligned (with the source on one side of the object and the detector on the other side) before an x-ray image can be taken. Sometimes it is not possible to place the source and detector where they are needed to produce a good transmission x-ray image;



and it is not possible to take transmission x-ray images close to ground. Portable transmission x-ray systems scan about 6 by 8 inches (15 by 20 cm) at one time and it can take minutes to scan an object of interest. With the new HBI-120 backscatter x-ray imager you can scan small or large objects and see what's inside in immediately. Scan up to a square foot (30 by 30 cm) per second and see high-contrast backscatter xray images of concealed threats — in vehicle fenders, doors, bumpers, exhaust manifolds, dashboards, seats and tires. Find improvised explosive devices (IEDs) in backpacks and similar threats in seconds, even in tight corners and next to the ground.

Gas Detector Array – Personal

Source: http://www.airsense.com/en/products/gda-personal

The **GDA-P** is a compact portable detector offering detection and identification of chemical warfare agents, chemical hazardous gases and toxic industrial compounds within seconds.



Especially designed for the enhanced personal protection in potentially dangerous environments.

The simultaneous detection with the integrated *IMS* and either an *EC* or a *PID* provides a high level of safety by detecting a wide

range of CWA's and TIC's.

Depending on the current threat the *GDA-P* shows name and concentration. Up to two chemicals are indicated from the current sensor information. A bar graph quickly informs about the current chemical load in sampled air.

LED lights at the top indicate the current alarming status without the need for operator interference. Acoustic alarming is integrated.

The self-cleaning mode of the *GDA-P* allows the instrument to be ready for the next measurement, without interruption time.



New release of The Islamic State's magazine: "Rome #6"

Source: http://jihadology.net/2017/02/04/new-release-of-the-islamic-states-magazine-rome-6/



Page 21



BioChem attacks in airports: how real is the risk?

By Névine Schepers

Source: http://www.cbrneportal.com/biochem-attacks-in-airports-how-real-is-the-risk/

Feb 06 – Airports have increasingly become the perfect target for terrorist attacks as events in the last few years have sadly demonstrated. Most technological countermeasures focus on detection devices which are aimed at uncovering explosive devices and concealed weapons, whereas there are currently no effective systems in place to detect CBRN threats in airports around the world. CBRN threats are more difficult and costlier to identify, meaning that they have often received less attention, notably in the case of chemical and biological threats. However, the dangers of a

chemical or biological attack should not be underestimated. Terrorists have been using more diverse means to conduct attacks such as the recent truck attacks in Nice and Berlin. The European Union has <u>warned</u> about the high likelihood of ISIS using CBRN weapons to conduct further attacks on European soil. A chemical or biological terrorist attack would also

have an important impact way beyond medical consequences for those affected such as the possibility for further contamination. Such an incident would have important psychological, economic and political implications as well, due to the widespread fear and panic chemical and biological agents produce in populations.

Airports embody an ideal target for a biological or chemical attack. They attract large flows of people every day who can spread infection in all four corners of the world. Other elements making an airport an ideal target include the relative ease of access to various locations within airports such as departure/arrival halls, the large number of entry/exit points to access these spaces and the numerous choke-points created by closely aggregated crowds. Additionally, the fact that almost everyone carries luggage conceals any illicit transportation of materials up to security checkpoint areas.

Airports are also enclosed spaces which require heating, ventilation and air-conditioning (HVAC) systems to ensure adequate air quality. These systems, in turn, represent targets for biological or chemical terrorist attacks since agents can be easily dispersed through HVAC technology. Few airports are equipped with air neutralization systems which could remove contaminants since adapting existing facilities to accommodate these systems is very costly. An agent released into an air duct would be dispersed into all connected spaces and affect a large number of people. Yet, the severity of such an attack depends on the quantity of agent used and the quality of the air filtration system.

► Read the rest of this article at source's URL.

Névine Schepers is an analyst at IB Consultancy. She holds a Dual Masters' Degree in European and Asian Affairs from the universities of Sciences Po in Paris and Fudan in Shanghai, after having completed her Bachelor's Degree in Asian studies from the University of Sydney. Before joining IB Consultancy, Névine travelled extensively in Asia and conducted an internship at a French consultancy firm in Shanghai.

ISIS Created Chemical Weapons in Mosul University

Source: https://www.clarionproject.org/news/isis-created-chemical-weapons-mosul-university

Feb 08 – Islamic State used its headquarters in Mosul to <u>make chemical weapons</u>, the Pentagon announced January 7, reported *Al-Monitor*.

Coalition forces, in their steady assault to retake the Iraqi city, **found chemicals inside the university**, which the terror group had claimed as its control center.

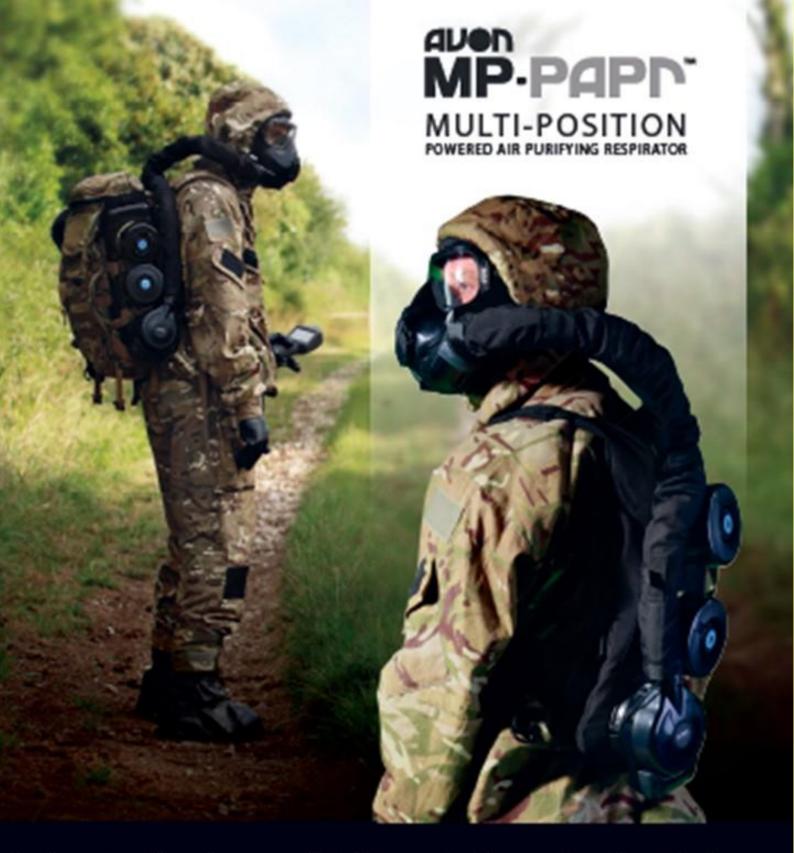
The university was liberated last month. Booby traps set by the jihadis in the heavily-damaged buildings made a thorough investigation difficult. However, tests confirmed the university was "central to the ISIS chemical weapons program," stated Pentagon Spokesman Navy Captain Jeff Davis. "They have received positive samples; that is indeed what was going on there."

Davis said the chemical, sulphur mustard, was "used primarily as an irritant and something to scare people," rather than an agent of death.



Since the beginning of the assault on Mosul in October, coalition forces have captured most of the eastern parts of the city. The western part of the city still remains in ISIS hands. Scattered jihadi cells remain in the liberated areas which have been highly booby-trapped. The fight for Mosul has incurred heavy casualties.





The lowest profile and most comfortable CBRN PAPR on the market.

The first flexible-bodied, modular PAPR is designed to be easily integrated with a wide range of protective equipment.

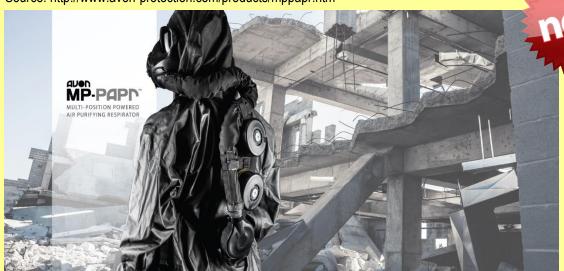
- S-Shape crush proof hose technology
- Remote mask power switch option
- Multiple hot-swap battery options
- Intelligent constant flow control





Avon MP-PAPR™ system

Source: http://www.avon-protection.com/products/mppapr.htm



Avon Protection introduces a new generation of CBRN Powered Air Purifying Respirator, the Avon MP-PAPR™ system.

A departure from traditional rigid plastic construction systems, the **Avon MP-PAPR** is the world's first

flexible PAPR unit, constructed from the same field proven Chlorobutyl rubber, as used for the Avon 50 series masks range.

The Avon MP-PAPR module delivers a compact and easily integrated PAPR unit providing cooling, lower user burden and reduced pulmonary stress.

The unique shape and construction allow the wearer to mount the PAPR in multiple ways, maximizing integration while delivering higher protection levels and improved well-being.



A complete set of certifications allows the user to add Avon MP-PAPR to existing fielded systems such as the 50 Series APR's, convert into a combination PAPR (Avon CS-PAPR) or revert back to an Avon EZAir configuration.

This product is currently available in the EMEA market only and is approved for CE marking under the PPE Directive.

Officials Say Hamburg Airport Scare Was Likely Pepper Spray

Source: http://abcnews.go.com/Health/wireStory/hundreds-evacuated-hamburg-airport-toxic-airsuspected-45437037



Feb 12 – Hundreds of passengers at **Hamburg Airport** were evacuated and more than a dozen flights canceled after some 68 people were injured by a hazardous material that likely spread through the airport's air conditioning system.

The airport said in a statement that police and firefighters had concluded from their initial investigation the

substance most likely was pepper spray. Authorities still are working to determine how it got into the airport's air conditioning system, the statement said. The 68 injured people — both passengers and staff members — had complained about breathing problems, burning eyes and nausea.

All outgoing and inbound flights were halted for about



one hour due to the evacuation and unknown health hazard; 14 flights were canceled altogether and several planes also were diverted. Air traffic delays continued throughout the afternoon.

Evacuees who were uninjured had to wait outside in freezing temperatures.

Firefighters designated special areas outside the airport building where physicians examined people with physical symptoms of exposure.

EDITOR'S COMMENT: There is a word missing from this post: "terrorism". But since nobody died this incident was not considered as a terrorist attack. Also: how many canisters we need to incapacitate 68 people and how spraying was conducted? It seems the airport's fame was über allers! We had similar incidents in Rhodos Island Intern Airport. Similar silence for toursm reasons...





Might proven useful for CBRN First Responders

Pilot Translating Earpiece

Source: http://www.waverlylabs.com/pilot-translation-kit/

The Way It Works PILOT EARPIECE Using designed noise-canceling microphones, the Pilot earpiece filters out ambient noise from the speech of someone talking PILOT EARPIECE PILOT APP PILOT APP The translation process occurs using speech recognition, machine translation and machine learning as well as speech synthesis technologies PILOT EARPIECE The second earpiece returns the translation. This all happens simultaneously without interruption, as each person speaks to one another

Instant translation

Source: http://www.iamili.com

iii is a wearable translator that instantly translates your words. The device can be used anywhere, anytime without being connected to the Internet. Its intuitive user interface allows you to use the device as if you're directly communicating with the other person.

It's difficult to find a reliable Internet connection when you're travelling abroad. Since ili doesn't require an Internet connection, you can use it anywhere.

Available for businesses in the US from June 2017.



NBC Air Filtration for Safe Rooms

Source: http://www.beind.com/safe-rooms/

The Rainbow 36 NBC protection systems are perfect for small safe rooms. The Rainbow 36 system pulls

air from outside the protected space and through a blast



valve to protect from blast waves and their adverse effects. This creates an overpressure inside the protected space, which further serves to keep unwanted toxins from entering the protected area. A safe and convenient environment is produced, which then relieves the occupants from having to wear gas masks or protective clothing.

Rainbow36 S (new) – Installed High, providing Complete Room Access for Normal Use, extra small size.



Rainbow36 N (

some systems operation during a power outage.

Rainbow36 N (below) – Includes a Battery Backup lasting for up to 10 Hours

The systems are available in three types, the Rainbow 36 N, Rainbow 36 E, and the latest development, the Rainbow 36 S, which sits high in a room imitating an air conditioner and providing clear access to the rest of the space for normal use. The Rainbow systems feature quick and easy operation without the use of tools, an easily activated manual backup (child friendly), and offer a battery backup for an additional 10 hours of

Mobile CBRN reconnaissance systems

Source: http://www.rheinmetall-defence.com/en/rheinmetall_defence/systems_and_products/nbc_reconnaissance_systems/index.php

Nearly two decades after the end of the Cold War, nuclear, biological and chemical weapons continue to pose a grave and growing threat. The risk of increased proliferation of weaponized biological and chemical agents is particularly acute: they are easier and cheaper to produce than nuclear weapons. It is impossible to say today if the efforts of bodies such as the Organization for the Prohibition of Chemical Weapons to stop the spread of weapons of mass destruction (or even bring about their eventual elimination) will ever bear fruit.

Moreover, increasing industrialization likewise harbours serious potential threats. The ability to mount a swift, effective response in the event of a release of hazardous chemicals, for instance, or radioactive material, is now an urgent priority for military and civil defence planners around the globe. Terrorism, too, continues to pose a growing danger to national and international security, threatening civilian populations and military forces alike. Fast, reliable detection of surreptitiously released CBRN agents and other toxic substances—even under difficult conditions—has thus become a life-or-death capability; and the same is surely true of the future. As the world's foremost maker of mobile CBRN reconnaissance systems for military applications and civil defence, Rheinmetall offers Germany's NATO partners and other likeminded nations a wide array of CBRN detection products.

Fuchs/Fox armoured NBC reconnaissance system



Packed with built-in state-of-the-art detection equipment, Rheinmetall Defence's Fuchs/Fox armoured NBC reconnaissance system can quickly determine the presence of nuclear, biological and chemical contamination on the ground and in the air, covering large areas. Rugged and reliable, this amphibious, all-terrain armoured vehicle is able to conduct its mission even in the toughest terrain. Nearly 300

of these systems are now in service with customers worldwide. They have already proven highly effective in numerous operations.



Bio-Spür-Fuchs/Fox & Yak mobile biological reconnaissance systems



The Bio-Spür-Fuchs and Bio-Spür-Yak are both highly mobile reconnaissance systems capable of detecting the presence of weaponized biological agents and contaminants in the air, on the ground and in water, quickly covering large areas. For the first time, these two highly integrated systems make it possible to search for biological threats.

Mobile NBC-field laboratories

The extensively equipped mobile CBRN-field laboratories of Rheinmetall Defence are used for more comprehensive tasks, e.g. to identify and verify any nuclear, radiological, biological or chemical contamination. All of the data needed to comprehensively assess the current danger with regard to environmental, operational and radiation protection can be determined



in situ. The most modern analytical equipment is installed inside standard NATO shelters that can be rapidly deployed worldwide by truck, aircraft, train or ship.

Light CBRN reconnaissance vehicle

Already in service with numerous German fire brigades, Rheinmetall's CBRN detection vehicles are used



for the fast and reliable detecting of radiological and chemical contamination. The measuring equipment is housed in the crew cabinet with an autonomous power supply. This computer-operated system enables the collection, evaluation and storage of each pollution load including the relevant geographical coordinates. Data is transmitted to higher echelon elements via the GSM network. As an option, additional equipment is available for

detecting biological warfare agents. The CBRN reconnaissance vehicle accommodates 4 persons.

Massive chemical explosion at Spanish chlorine factory as potentially toxic gases released into the air

Source: http://www.mirror.co.uk/news/world-news/massive-chemical-explosion-spanish-chlorine-9777314

Feb 08 - Big explosion in the industrial area of the town of Fuente del Jarro near Paterna in Spanish Valencia has spread across to the ships and caused an immense smoke cloud on



Wednesday morning, local media reported.

The massive explosion at the Spanish chlorine factory has sparked fears toxic gases could have been released into the air.

Dramatic footage from the scene shows huge flames and plumes of thick, black smoke after the factory ignited.

The factory is located on the Fuente del Jarro industrial estate in Paterna, near Valencia, Spanish news site Cadenaser.com reports.



CBRNE-TERRORISM NEWSLETTER - February 2017

It is believed that the part of the factory where the explosion occurred, shortly after 9.30am local time (8.30 GMT), is the area where chlorine is manufactured.

It is not known yet whether any employees were inside the building at the time of the incident.

Local police have blocked off access to the factory and are currently deciding whether to evacuate the rest of the buildings.

Witnesses heard several different explosions around the time of the incident and it has been reported that plumes of smoke are visible over a mile away.



Do Islamists plan a chemical attack on drinking water?

Source: http://www.focus.de/politik/videos/terrorgefahr-in-deutschland-bka-warnt-vor-moeglichen-terror-anschlaegen-mit-chemikalien_id_6538492.html

Jan 24 – Islamistically-oriented perpetrators are apparently willing to acquire and employ larger quantities of chemicals. According to information received by *Bild*, this is what a risk analysis

by the Federal Criminal Police Office and Interior Ministry says.

According to a report by *Bild*, the Federal Government and Federal Criminal Police (BKA) warn of the danger of possible terror attacks with chemicals.

This is what the paper reported on Tuesday, referring to a "risk

analysis in Civil Protection" by the Federal Government. According to the study, perpetrators motivated by Islamism were ready and capable "of acquiring larger quantities of chemicals and employing these", BKA writes in the paper, which was made available to the newspaper.

A chemical attack on the drinking water supply of apartment buildings is seen as a "realistic option", or on foodstuffs. Also, possible attacks against facilities or transports for the chemical industry had "a high-risk potential".

According to this government report, a "determined terrorist group, equipped with adequate knowledge, should be in the position to peruse the potential of hazardous chemical substances sufficient for their purposes for use in an attack in Germany."





Source: https://indd.adobe.com/view/208fe9c9-1332-4af8-8eb6-86d257a87522



CBRNE FRAGMENTATION PROTECTION

External Fragmentation Protective Layer

Hotzone Solutions Group and Blücher have partnered to develop a new protective system for First Responders: the CBRNE Fragment Protection System.

The CBRNE Fragment Protective system leads to the reduction of life threatening wounds by protecting critical body areas thereby increasing survivability, lessens CBRN contamination and infection risk, and reduces long term disease risk and side effects. The CBRNE FPS does not impair the function of any Personal Protective Equipment (PPE).

The specific garment system is composed of modular elements, which provide for a quick and flexible increase in protection to the highly sensitive areas of the human body. The multifunctional, lightweight, compressible and flexible knit fabric is based on the UHMWPE fibre material. The fibres' unique characteristics produce a highly resistant and durable textile that is stable against most environmental influences. The protective performance remains stable over long-wear durations, under high moisture conditions, UV radiation and against alkaline and acidic chemicals (e.g. sweat, urine) without any loss in performance.



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The high strength and highly dense textile structure provides an ideal IED fragment protection. It prevents micro fragments such as dirt, sand and debris from penetration. The number of penetrating fragments is minimised and the penetration depth is reduced. The performance has been tested according to STANAG 2920, and with the Triple Impact Technique, a new ballistic testing technique, with velocities of up to 410m/sec (17) grain FSP).

The Fragment Protection System can be fully customised to end-user needs. It is sold either stand-alone or in combination with the SARATOGA® suit, providing an additional external fragmentation protective layer further enhancing the CBRN protection capability of the SARATOGA®

FOR WHO

First Responders, civilian or military, who deal with or run the risk of coming into contact with CBRN materials, mixed with explosives (also known as dirty bombs).

Sand & Grit Cannon test method

Test Results: Protected: no contamination Test Results: Unprotected: injury with contamination





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LIVE AGENT VALIDATION AND TESTING

CBRNE Equipment is Tested in Field Conditions with Live Agents

With stricter environmental regulations, as well as restricted budgets, CBRNE live agent validation/testing protocols of equipment and procedures are limited to indoor, laboratory conditions. BUT the systematic, controlled and safe validation and testing of CBRNE equipment under field conditions with live agents cannot be covered in a laboratory setting!

Hotzone Solutions offers live agent testing and validation under realistic field conditions.

For the CBRNE industry: our validation under realistic field conditions with live agents can confirm previous results of laboratory trials and will point to necessary improvements giving you detailed feedback on your equipment prior to any sales.

For end-users of CBRNE equipment: our live agent testing under realistic field conditions, tailored to your tactical and technical procedures can confirm producer-declared technical characteristics and confirm that the CBRNE equipment suits your needs, prior any potential procurement.







Technologies

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MIDAZOLAM: AN IMPROVED ANTICONVULSANT TREATMENT FOR NERVE AGENT-INDUCED SEIZURES

John H. McDonough, Ph.D.

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3100 Ricketts Point Rd., Aberdeen Proving Ground, MD 21010-5400 USA

ABSTRACT

The drug midazolam has been recommended to replace diazepam as the immediate anticonvulsant treatment for nerve agent-induced seizures. This recommendation marks the latest decision in an ongoing program to improve medical countermeasures to treat nerve agent poisoning. Extensive rodent screening studies first identified midazolam as the most promising compound to focus on for advanced testing. Midazolam was then evaluated directly with diazepam for the ability to terminate nerve agent seizures in a nonhuman primate model. In all animal tests midazolam was twice as potent and more rapidly acting than diazepam, thus minimizing the possibility of seizure-induced brain damage.

Source: http://www.dtic.mil/dtic/tr/fulltext/u2/a436040.pdf



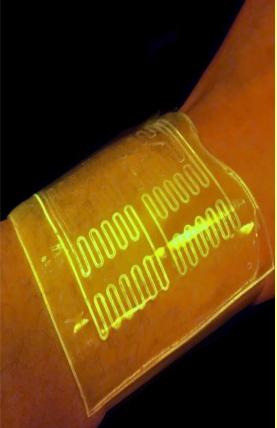
'Living' Gloves Glow When You Touch Certain Chemicals

Source: http://gizmodo.com/these-crazy-living-gloves-glow-when-you-touch-certain-c-1792435739

Imagine a near future when detectives looking for evidence in a murder investigation could slap on a pair of rubber gloves that would light up when the cop touched a certain chemicals. MIT scientists just created an early version of this technology, and it looks super cool.







The bioengineering behind this new "living sensor" material is actually simpler than you might think. In a new paper published in the *Proceedings of the National Academy of Science*, the MIT team describes a new "hydrogel," a material made up of 95 percent water that's bonded to a layer of porous rubber that lets in oxygen. The material is then injected with a strain of *E. coli* cells genetically programmed to react when they come in contact with certain chemicals. (Most *E. coli* strains are perfectly safe, despite the bad reputation the bacteria gets from food poisoning outbreaks.) The reaction causes the cells to glow, essentially becoming a dead simple indicator of the chemical's presence.

The group also developed a theoretical model that will guide others who are keen on manufacturing their own, stretchy, glowing, life-infused, chemical-sensing materials. Honestly, who isn't?

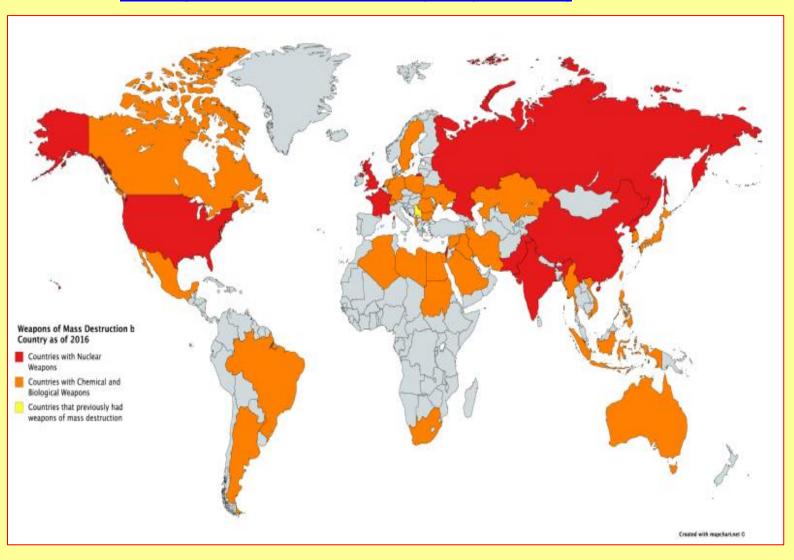
"The model helps us to design living devices more efficiently," Xuanhe Zhao, the MIT associate professor who led the research, said in a press release. "It tells you things like the thickness of the hydrogel layer you should use, the distance between channels, how to pattern the channels, and how much bacteria to use." Zhao is referring to narrow channels in the hydrogel, fabricated using 3D printing and "micromolding," that shelter the glowing bacteria.

Then things get really interesting. Because the new type of material is stretchy and resistant to cracking, it can be fashioned into gloves or bandages that could have myriad usages in fields from medicine to environmental protection to forensic science. Imagine how those gloves could help a Homer Simpson sort of nuclear engineer realize when he's touched toxic sludge, or a doctor to immediately see when a wound is becoming infected. Since the material is transparent and the bacteria can be injected in an endless array patterns, the implementation of technology like this could be wonderfully versatile.

Of course, the MIT scientists are still in the preliminary research stages of developing this new living sensor. Zhao says that the basic design will enable people to "put different types of bacteria in these devices to indicate toxins in the environment or disease on the skin." The team's work joins an array of other exciting innovations in materials science, from electronic sensor tattoos that can be printed on skin to synthetic skin that can change colors like an octopus.

Weapons of Mass Destruction by Country as of 2016

Source: https://en.wikipedia.org/wiki/File:Weapons of Mass Destruction by Country as of 2016.pnghttps://en.wikipedia.org/wiki/File:Weapons of Mass Destruction by Country as of 2016.pnghttps://en.wikipedia.org/wiki/File:Weapons of Mass Destruction by Country as of 2016.png



Denotes a map of countries showing the global prevalence of weapons of mass destruction (chemical, biological and nuclear weapons). Some data is gathered from the website www.procon.org while more recent updated data is gathered from various other sites.







Blood test can predict life or death outcome for patients with Ebola virus disease

Source: http://www.medicalnewstoday.com/releases/315384.php

Jan 23 – Scientists have identified a 'molecular barcode' in the blood of patients with Ebola virus disease that can predict whether they are likely to survive or die from the viral infection.

The results, published in *Genome Biology*, identified a small number of genes whose expression accurately predicts patient survival, independent of viral load.

A team at the University of Liverpool, in collaboration with Public Health England, Boston University School of Medicine (BUSM) and other international partners, used blood samples taken from infected and recovering patients during the 2013-2016 West Africa outbreak to identify gene products that act as strong predictors of patient outcome. The new research provides data on the underlying causes of Ebola virus infection and suggests that this type of blood analysis could be integrated into future outbreak responses as a diagnostic tool to help guide treatment strategies.

Since the Ebola outbreak in West Africa much research has been done to further understand the biology of the Ebola virus. In particular, the processes that lead to survival or a fatal infection are unknown, although the amount of virus present in the body (viral load) can be a key determinant.

However, while this premise worked well for predicting outcomes for people with extreme viral loads, it was less clear for people with midrange counts, the majority of cases, where the outcome prediction was approximately equal between survival and a fatal infection.

Blood samples collected by the European Mobile Laboratory in Guinea of Ebola patients who either went on to survive or die from the acute infection, were analysed using genomic techniques to identify and quantify messenger RNA (mRNA) expression. These results were

compared to blood samples from a separate group of survivors who had recovered from infection and were now free of the Ebola virus.

The analysis also provided some fundamental information on the host response to Ebola virus infection in humans, and found that an immediate robust immune response didn't affect whether people went on to live or die from the infection. The data also points to the virus causing significant liver damage.

John Connor, PhD, associate professor of microbiology, Boston University School of Medicine, added: "It is not just defining how much Ebola virus that is present in a patient that defines whether a patient will survive. How the patient fights the infection is also key.

Defining common aspects of how the immune system responds in individuals that survive opens a new window for studying how to keep Ebola virus infection from being a fatal infection."

Professor Julian Hiscox, a virologist at the University of Liverpool's Institute of Infection and Global Health, said: "Our study provides a benchmark of Ebola virus infection in humans, and suggests that rapid analysis of a patient's response to infection in an outbreak could provide valuable predictive information on disease outcome."

Professor Miles Carroll, Director of Research at Public Health England, added: "This study helps us to further our understanding of the human response to Ebola virus infection. This understanding should enable more effective patient care resulting in improved clinical outcomes in future outbreaks."

Funding for this study was provided by the National Institute for Health Research Health Protection Research Unit in Emerging and Zoonotic Infections and the United States Food and Drug Administration.

Article: <u>Transcriptomic signatures differentiate survival from fatal outcomes in humans infected with Ebola virus, John H. Connor, Julian A. Hiscox et al., Genome Biology, doi: 10.1186/s13059-016-1137-3, published 19 January 2017.</u>



World still "grossly underprepared" for infectious disease outbreaks

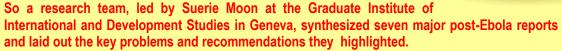
Source: http://www.homelandsecuritynewswire.com/dr20170127-world-still-grossly-underprepared-for-infectious-disease-outbreaks

Jan 27 – The world remains "grossly underprepared" for outbreaks of infectious disease, which are likely to become more frequent in the coming decades, warn a team of international experts in the *BMJ*.

They reviewed reports on the recent Ebola virus outbreak in West Africa and say better preparedness and a faster, more coordinated response could have prevented most of the 11,000 deaths directly attributed to Ebola and also the broader economic, social, and health crises that ensued.

In August 2014, the World Health Organization (WHO) declared the Ebola outbreak in West Africa a Public Health Emergency of International Concern (PHEIC), and the world scrambled to respond.

In the aftermath, a number of reports were published reviewing what went wrong and how we should better manage infectious disease outbreaks. However, the main priorities emerging from these reports and the extent to which action has been taken on the proposed reforms is unclear.



They also assessed progress to date and identified the biggest gaps between recommendations and action in each area of reform.

BMJ says that they found that, while the reports differed in scope and emphasis, their diagnosis of the key problems and recommendations for action converged in three critical areas: strengthening compliance with the International Health Regulations (IHR); improving outbreak-related research and knowledge sharing; and reforming the World Health Organization (WHO) and broader humanitarian response system.

They found significant efforts beginning to address these issues, but that progress has been mixed with many critical issues largely unaddressed.

For example, they point out that investments in country capacity building have been inadequate and difficult to track, arrangements for fair and timely sharing of patient samples remain weak, and reform efforts at WHO have focused on operational issues but have neglected to address deeper institutional shortcomings.

As the WHO Executive Board gathers this week to shortlist candidates in the running for the 2017 WHO Director-General election, the authors point out that "spearheading institutional reforms is likely to fall to the next director general."

"We found remarkable consensus on what went wrong with the Ebola response and what we need to do to address the deficiencies. Yet not nearly enough has been done," write the authors.

"Ebola, and more recently Zika and yellow fever, have demonstrated that we do not yet have a reliable or robust global system for preventing, detecting, and responding to disease outbreaks," they add.

And they urge the global community "to mobilize greater resources and put in place monitoring and accountability mechanisms to ensure we are better prepared for the next pandemic."

"We will not be ready for the next outbreak without deeper and more comprehensive change," they conclude.

— Read more in "Post-Ebola reforms: ample analysis, inadequate action," <u>BMJ</u> 356 (23 January 2017).



AGRICULTURE

SECURITY

WATCH ZONE

Suspicious Activity

Shall Be Reported

to the Police

Bioterrorism poses catastrophic threat to U.S. agriculture

Source: http://www.homelandsecuritynewswire.com/dr20170130-bioterrorism-poses-catastrophic-threatto-u-s-agriculture

Jan 30 - Members of the Blue Ribbon Study Panel on Biodefense last week hosted a forum on the campus of Kansas State University to better understand the threats to agriculture posed by biological agents which can inflict catastrophic consequences on the U.S. population and economy. Former U.S. Senate Majority Leader and Panel Member Tom Daschle and former presidential Homeland Security

Advisor Ken Wainstein chaired the meeting, which provided non-federal government and industry representatives an opportunity to offer the Panel their perspectives on agrodefense challenges and solutions.

"Recent events throughout the world clearly demonstrate that we need to strengthen our defenses against biological threats, including threats to agriculture," said Daschle. "We need to use a One Health approach and address animal, environmental and human health simultaneously. The Blue Ribbon Study Panel on Biodefense believes that a much higher priority must be placed on agrodefense. Our economy and way of life depend on it."

In an opinion editorial published recently in U.S. News & World Report, Daschle and General Richard Myers, former chairman of the Joint Chiefs of Staff and current president of Kansas State University, said that any threat to U.S. agricultural production and security would have devastating economic, societal 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. "A terrorist attack on our nation's agricultural sector could prove devastating to our economy and our sense of security," said Wainstein. "We need to take all possible steps to reduce our vulnerability and increase our capacity to respond to such an attack."

Among the key questions posed during today's discussion were:

- What is the current level of effectiveness across the spectrum of activities undertaken for and comprehensiveness of agrodefense?
- What are the major impediments to and opportunities for increasing situational awareness for agricultural threats, and accuracy of agricultural and zoonotic disease detection and clinical diagnosis?
- What can be done to strengthen and foster leadership in the agrodefense arena?

Last week's meeting follows the release of a new report from the Panel. The report, Biodefense Indicators



 One Year Later, Events Outpacing Federal Efforts to Defend the Nation, states that while the biological threat is real and continues to grow, our nation remains woefully under-prepared for dangerous biological incidents.

The Panel assessed biodefense efforts across the spectrum from prevention to recovery, and developed detailed recommendations for the federal government to increase the efficiency and effectiveness of these efforts. In its first report, the Panel put forward thirty-three recommendations and eighty-seven action items that, if implemented, would dramatically and quickly improve biodefense.

They addressed the need for enhanced federal coordination.

optimized collaboration with non-federal partners (particularly in the private sector), and timely adoption of innovative solutions for technological and governance challenges.



Report to the Committee on Armed Services, House of Representatives

DEFENSE CIVIL SUPPORT

DOD, HHS, and DHS Should Use Existing Coordination Mechanisms to Improve Their Pandemic Preparedness

Source: http://gao.gov/assets/690/682707.pdf

MAP: Find Out What New Viruses Are Emerging In Your Backyard

Source: http://www.npr.org/sections/goatsandsoda/2017/02/07/512634375/map-find-out-what-new-viruses-are-emerging-in-your-backyard

How a travel ban could worsen doctor shortages in US hospitals and threaten primary care



By John Burkhardt and Mahshid Abir

Source: http://www.homelandsecuritynewswire.com/dr20170213-how-a-travel-ban-could-worsen-doctor-shortages-in-us-hospitals-and-threaten-primary-care

Feb 13 – The Ninth Circuit Court of Appeals in San Francisco on Feb. 9 <u>upheld</u> the restraining order on President Trump's immigration ban. A key argument used by the States of Washington and Minnesota was the negative impact of the ban on <u>higher education</u>, but an important corollary is the impact on medical care in the U.S. While the world waits for a final decision on the matter, potentially from the Supreme Court, it's critical to look at the potential ramifications of the ban.

Regardless of the ultimate ruling, the travel ban has already had <u>significant consequences</u> for people from the seven targeted majority Muslim countries and American citizens. Doctors are among those people directly affected – and that has big implications for health care delivery in U.S. hospitals, particularly those in rural America and inner-city safety net hospitals.

Physicians who are citizens of these nations who were traveling outside the country at the time of the ban have been detained or refused access to the U.S.

Larger-scale, lasting effects of a ban on the graduate medical education system are likely to be even more severe and may further strain an already overstretched health care system and affect the care of communities across the U.S. Indeed, the president of the American Medical Association already has written a <u>letter to the Department of Homeland Security</u>, explaining how the ban could affect those who are already underserved by limiting doctors from other countries.

As physicians involved with educating and training the next generation of doctors, we see dire consequences for health care delivery in our country if the travel ban is reinstated.

A looming deadline

Even though the ban has been temporarily lifted, the timing could not be worse for international applicants hoping to train in the U.S. While new resident physicians typically



begin on July 1, the match process that allots positions occurs much sooner. On Feb. 22, residency program directors <u>must submit their rank list</u> of which applicants they would like to have in their program. Therefore, without clear signs that travel for foreign applicants will be possible by July, program directors who want to protect their training program from staffing shortages may decide against ranking these applicants. The loss of a single incoming class of international medical graduates will significantly decrease the number of residents in training and physician capacity in hospitals and health care systems across the U.S.

Graduates from outside the United States constitute <u>26 percent</u> of the U.S. graduate medical training. These foreign medical graduates <u>usually fill resident training positions</u> that are left vacant after medical schools match U.S.-based students to residency programs.

Therefore, foreign graduates typically do not take spots away from graduates of American medical schools, but instead provide medical care in hospitals that will otherwise be understaffed. These include rural hospitals around the country, where it is especially hard to recruit physicians, and safety net hospitals serving the poor.

Primary care could be threatened

Even if all current residency positions could be filled with U.S. medical school graduates and eliminate the need for any additional resident physicians from outside the U.S., the projected demand for physicians in the near future will still not be met.

Physicians in graduate medical education provide a significant proportion of all health care in the U.S., with teaching hospitals accounting for 40 percent of charity care (US\$8.4 billion annually) and 28 percent of Medicaid hospitalizations. Without sufficient residents to care for patients, teaching hospitals are illequipped to maintain this role for the poorest patients and may not continue to meet this critical societal need.

Physicians who are both foreign-born and U.S.-born and trained outside the country constitute <u>more than</u> a quarter of all practicing physicians in the U.S.

While the country of origin of these doctors is not often reported on a <u>country-by-country basis</u>, a recent interview with the Association of American Medical Colleges reported <u>260 physicians in training</u> were from the seven targeted nations last year.

Expanded travel bans could dramatically increase that number as, between 2008 and 2010, 16 percent of these international medical graduates taking a required licensing exam were from <u>Middle Eastern countries</u>.

A drop in primary care providers

These international physicians also disproportionately work in <u>primary care fields</u> that are the hardest hit by the ongoing U.S. physician shortage crisis.

Currently, primary care programs have 50 percent of their residency slots filled by <u>nonallopathic</u> <u>students and international medical graduates</u>, whose absence could cripple primary care capacity.

Having a primary care doctor leads to increased access to care, reduced emergency department visits, decreased hospitalizations and improved management of chronic conditions, and decreased acute care utilization can lower overall health care spending. Similarly, general surgery has seen a 13 percent decrease in U.S. graduates in the specialty; however, this shortcoming has been buffered by influxes of international medical graduates. Delays in scheduling operative cases have also been associated with increased health care costs, making adequate numbers of surgeons another cost containment strategy. Without international physicians entering the graduate medical education workforce, it would require substantial changes to maintain the current level of physician staffing in health care systems, such as replacing physicians with midlevel providers which may further inflate health care costs.

While physician shortage is a challenge for many communities across the U.S., the pain will not be distributed equally among all Americans.

Minority and low socioeconomic status patients are more likely to suffer from increased physician shortages, are most likely to be impacted by increased wait times to get care, and



stand to lose the benefit of having a primary care doctor that has also shown to confer <u>benefits to at-risk</u> populations.

President Trump's immigration ban has the potential for immediate ramifications for the hospital and health care system workforce in the U.S. Long term, decreases in the number of international medical graduates in training will result in fewer primary care physicians and general surgeons, just as the country is likely to need more.

This immigration policy can have significant adverse impacts on health care delivery and the health of Americans. These consequences should be critically considered in related immigration and travel ban policy decisions moving forward.

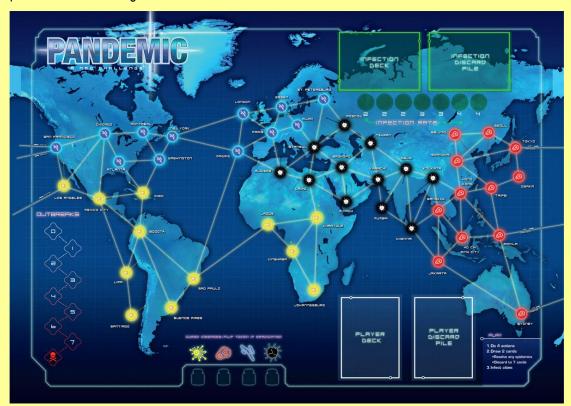
John Burkhardt is Lecturer, University of Michigan.

Mahshid Abir is Assistant Professor, Department of Emergency Medicine, Director of the Acute Care Research Unit, University of Michigan.

EDITOR'S COMMENT: President Trump recently spoke about the Obama mess he inherited. It seems that he was right. By the way, in Greece we have many unemployed good doctors that might help solving the problem!

Acting fast: Two months to stop pandemic X from taking hold

Source: http://www.homelandsecuritynewswire.com/dr20170215-acting-fast-two-months-to-stop-pandemic-x-from-taking-hold



Feb 15 – Over the past several years, <u>DARPA-funded researchers have pioneered RNA vaccine technology</u>, a medical countermeasure against infectious diseases that uses coded genetic constructs to stimulate production of viral proteins in the body, which in turn can

trigger a protective antibody response. As a follow-on effort, DARPA funded research into genetic constructs that can directly stimulate production of antibodies in the body. DARPA says that it is now



launching the Pandemic Prevention Platform (P3) program, aimed at developing that foundational work into an entire system capable of halting the spread of any viral disease outbreak before it can escalate to pandemic status. Such a capability would offer a stark contrast to the state of the art for developing and deploying traditional vaccines—a process that does not deliver treatments to patients until months, years, or even decades after a viral threat emerges.

"DARPA's goal is to create a technology platform that can place a protective treatment into health providers' hands within sixty days of a pathogen being identified, and have that treatment induce protection in patients within three days of administration. We need to be able to move at this speed considering how quickly outbreaks can get out of control," said Matt Hepburn, the P3 Program Manager. "The technology needs to work on any viral disease, whether it's one humans have faced before or not."

Recent outbreaks of viral infectious diseases such as Zika, H1N1 influenza, and Ebola have cast into sharp relief the inability of the global health system to rapidly contain the spread of a disease using existing tools and procedures. State-of-the-art medical countermeasures typically take many months or even years to develop, produce, distribute, and administer. These solutions often arrive too late — if at all — and in quantities too small to respond to emerging threats. In contrast, the envisioned P3 platform would cut response time to weeks and stay within the window of relevance for containing an outbreak.

Key to this undertaking are nucleic-acid-based technologies — those that are centered on DNA and RNA — including some developed under DARPA's <u>Autonomous Diagnostics to Enable Prevention and Therapeutics (ADEPT)</u> program. Using these tools, scientists can identify protective antibodies from recovering patients and then, through a biological version of reverse engineering, manufacture genetic constructs that, when delivered, can instruct an individual's body to produce similar protective antibodies. Significant quantities of these nucleic acid "blueprints" can be rapidly manufactured compared to state-of-the-art antibody production methods.

What is required now are breakthroughs in three other technology areas to bridge those past DARPA achievements and overcome the remaining bottlenecks that hinder rapid response to pandemic threats. The P3 program will pursue innovations in those three areas:

- Growing virus needed to support evaluation of therapies in laboratory tests;
- Subjecting antibodies to rapid rounds of evolution outside of the body to increase their potency beyond that of even the most effective antibodies obtained from infected patients; and
- Developing means of efficiently delivering nucleic-acid-based protective treatments, since the technologies used to administer conventional vaccines do not readily translate.

Achieving and integrating breakthroughs in all of these areas will require choreographed cooperation among researchers and engineers specializing in such areas as immunology, microbiology, virology, medical infectious diseases, molecular biology, and medical countermeasure product development and manufacturing.

DARPA-funded teams will be required to demonstrate their integrated platforms in five simulations during the planned four-year program; they will initially test their platforms using pathogens of their choice, but ultimately they will test using DARPA-selected pathogens, including two demonstrations in which the identity of the pathogen will remain opaque to the teams until the 60-day clock starts. To ensure the developed platforms can produce a quality product with a viable pathway for regulatory review, each team will be required to complete a Phase I clinical safety trial before the end of the program.

A benefit of the nucleic-acid-based approach to limiting the spread of infection is that the genetic constructs introduced to the body would be processed quickly and would not integrate into an individual's genome. Similarly, the antibodies produced in response to the treatment would only be present in the body for weeks

to months. This is consistent with DARPA's intent with P3, which is to safely deliver transient immunity to

a virus, halting the spread of disease by creating a firewall.

"Our country asks our military Service members to deploy globally and provide humanitarian assistance in all manner of high-risk environments. We owe it to them to develop the best protections possible," said Hepburn, a U.S.

Army physician who previously served as Director of Medical Preparedness on the White House National Security Staff. "If we're successful, DARPA could take viral infectious disease outbreaks off the table as a threat to U.S. troops and as a driver of global instability."

To further clarify the P3 program vision, answer questions from potential proposers, and facilitate teaming, DARPA is hosting two identical Proposers Days. The first will be at the Crown Plaza Tysons Corner McLean Hotel in McLean, Virginia, on 22 February 2017, and the second at the Doubletree by Hilton Hotel San Diego Downtown in San Diego on 2 March 2017. Full details of the P3 program are included in a Broad Agency Announcement, available at: http://go.usa.gov/x9FbG. Proposal abstracts are due by 12:00 PM ET on 13 March 2017. Full proposals are due by 5:00 PM ET on 1 May 2017.

— Read more in Karuppiah Muthumani et al., "Rapid and Long-Term Immunity Elicited by DNA-Encoded Antibody Prophylaxis and DNA Vaccination Against Chikungunya Virus," <u>Journal of Infectious Diseases</u> (21 March 2016): 369-378 (DOI: https://doi.org/10.1093/infdis/jiw111); and "CureVac Receives Broad Patent for RNAntibody <u>Technolog</u>," CureVac AG (8 November 2016).

BARDA and Project Bioshield Progress Report Details Core National Security Role

By Amesh A. Adalja, MD, FACP, FACEP, FIDSA

Source: http://www.upmc-cbn.org/report_archive/2017/cbnreport_02172017.html

Feb 17 – In order to further the national security of the United States and fortify it against an intentional attack using biological weapons--as occurred in 2001 with anthrax--Congress and President George W. Bush created Project Bioshield in 2004. Project Bioshield was tasked with facilitating the development, acquisition, and stockpiling of diagnostics, vaccines, and medications against chemical, biological, radiological, and nuclear (CBRN) threats. Initially funded with \$5.6 billion for a 10-year period and reauthorized in 2013, Project Bioshield, and the related Biomedical Advanced Research Development Authority (BARDA), recently published a 10-year progress report on their efforts in this field in *Clinical Infectious Diseases*.



6 CBRN Licensed Products

In the report, Larsen and Disbrow catalog the products BARDA and Project Bioshield have supported. Achievements that are highlighted include 80 candidate countermeasures, 21 stockpiled countermeasures, and 6 FDA approvals for CBRN indications.

Included in the FDA approval are 2 monoclonal antibodies for anthrax, which represent the first licensed monoclonal antibodies for a bacterial infectious disease, as well as the heptavalent botulism antitoxin and a postexposure prophylaxis dosing regimen for the existing anthrax vaccine. Additionally, several nonlicensed but important products have been developed and stockpiled and would be used under an emergency use authorization. These include a smallpox antiviral and a smallpox vaccine to be used in people for whom the standard vaccine is contraindicated.

Radiation countermeasures have also progressed under BARDA/Project Bioshield stewardship, with both biodosimetry devices and cytokines being supported. Stockpiling of an antimicrobial burn dressing, development of burn eschar dissolving agents, and development of skin growth/regeneration products have also occurred.

In the chemical realm, a midazolam auto-injector, to be used in the event of nerve gas poisoning, is in late stages of development.

Essential to National Security

Over a decade has passed since the anthrax attacks of 2001; preparedness has increased substantially since that time, and defense against CBRN threats has become melded into national security. Both BARDA and Project Bioshield are essential elements of national security, and, especially in light of a change in presidential administration, it is important to emphasize the critical role these agencies have had in fortifying the nation against intentional CBRN threats. Larsen and Disbrow note, however, that despite the reauthorization of Project Bioshield in 2013 with annual funding at \$2.8 billion (from 2014-2018), that funding is subject to annual congressional appropriations; as such, only a fraction of that funding has been appropriated.

If resilience to ever-present CBRN threats is to be maintained and expanded, BARDA and Project Bioshield should be recognized and adequately supported for the national security role they have played and will continue to play.

Reference

Larsen JC, Disbrow GL. Project Bioshield and the Biomedical Advanced Research Development Authority: a ten year progress report on meeting U.S. preparedness and objectives for threat agents. Clin Infect Dis 4 Feb 2017. https://academic.oup.com/cid/article/2967925/Project-BioShield-and-the-Biomedical-Advanced.

The Biotechnological Wild West: The Good, the Bad, and the Underknown of Synthetic Biology

By Yong-Bee Lim

Source: https://globalbiodefense.com/2017/02/14/biotechnological-wild-west-good-bad-underknown-synthetic-biology/?sthash.OV0kXvnf.mijo#sthash.OV0kXvnf.H6EexMsY.dpuf



Feb 14 – Amid the myriad panels and posters on Ebola and Zika, the 2017 American Society for Microbiology (ASM) Biothreats conference also featured a panel on emerging biotechnologies. A panel of three distinguished scientists and policy-makers provided an overview of the current state of synthetic biology, its applications in the health and defense domains, and the policy conundrums that need to be addressed.

Synthetic Biology – The Good...

The majority of the presentations focused on the current state of synthetic biology and the most promising applications of the technology in the fields of health, life sciences research, and national security. Dr. Christopher Voigt of the Synthetic Biology Center at MIT described synthetic biology as the application of engineering principles to biological systems. The end goal of this bioengineering framework is to leverage ever-increasing computer capabilities to simplify the designing and writing of genomic sequences. Further simplification of this process would then allow for the creation of more complex systems.

Dr. Chris Hassell, Deputy Assistant Secretary of Defense for Chemical and Biological Defense, and Dr. Diane DiEuliis, Senior Research fellow at National Defense University respectively, noted that applications of synthetic biology can be beneficial to many sectors. In his presentation, Dr. Hassell noted how governments can use synthetic biology to address bio-related issues facing both the military and civilian populations. Synthetic biology can be leveraged to address chem/bio threats through both external (including environmental detection, individual protection, collective protection, and decontamination) and internal (pre-treatments, diagnostics, therapeutics, and vaccines) mechanisms.

Dr. DiEuliis focused on how synthetic biology is a tool that allows for three major activities: discovery, the manufacture of products, and the fundamental alteration of organisms.

Discoveries in basic research from academia allow for greater programmability, manipulation, and scalability of synthetic biology. As a society, we have already been



reaping the benefits of synthetically-produced products from private industry; examples include soybean hulls used for surfactant manufacturing, synthetic spider silk used for clothing, and synthetically-derived artemisinin to address raw plant material shortages for malaria treatment. In addition, the military has also leveraged synthetic biology to create biosensors, next-generation medical countermeasures (MCMs) and enhance force health protection through changing the characteristics (and thus, the functionality) of microbes

Dr. Christopher Voigt of the Synthetic Biology Center at MIT described a promising new development that has the potential to accelerate the achievement of the benefits outlined by his fellow panelists. A promising application of this framework is the software known as Cello. Requiring over a decade of work, Cello utilizes engineering principles to allow academic researchers to customize functionality for living cells. Cello then takes the cellular requirements and provides a logical design template for a genomic sequence. This template can then be sent to a gene synthesis company such as Addgene to be synthesized. Once the researcher has received the synthesized genomic sequence, introduction of the sequence into a cell will provide researchers with a fully tailored cell. While current capabilities are limited to Escherichia coli, future projects include expanding so that genomic sequence circuits will work in other bacteria and yeast cells.

Synthetic Biology – The Bad...

While the benefits derived from synthetic biology are great, presenters noted that it suffers from the dual-use dilemma: the same information applied to beneficial uses could also be repurposed for nefarious purposes. Dr. Hassell noted that synthetic biology increases biologically-derived risks through three mechanisms. First, synthetic biology can be used to enhance existing microbial threats; synthetic biology allows actors to more easily manipulate the characteristics of microbes. including increasing environmental stability and introducing hypervirulence. Secondly, traditional methods of restricting access to biological select agents and toxins (BSATs) may be less effective

in an age where synthetic biology can be used to construct microbes de novo. Finally, synthetic biology can be used to construct novel threats that are meant to subvert countermeasures.

Dr. DiEuliis noted that traditional threats may be revisited as synthetic biology allows actors to more easily engage in research that run contrary to the guidelines of the seminal 2004 Fink Report. However, DiEuliis also remarked that microbial manipulation and creation through synthetic biology may not only be used to inflict direct human casualties. The misuse of synthetic biology can be leveraged for strategic effect, such as economic damage due to industrial sabotage. Rather than the traditional paradigm of considering biological weapons as weapons of mass destruction, DiEuliis highlighted that synthetic biology may be leveraged as a weapon of mass disruption.

And the Underknown

All three presenters offered salient insights into the current state of synthetic biology from academic, private industry, and governmental perspectives. However, there was no mention of how actors from nontraditional backgrounds are changing the risk-benefit analysis of the life sciences. Specifically, the erosion technological and knowledge barriers to life sciences engagement have enabled greater participation from the civilian population to engage in life science research in a way that had been limited to traditional institutions such as the government, academia, and private industry. These civilian actors, often referred to as being part of the Do-It-Yourself (DIY) Biology movement, are characterized by their wide range of professions (from artists and retirees to life sciences students and professionals), widely varying motivations for engaging in DIY Biology projects (from curiosity to a desire to create useful tools and commercial products), and differing objectives (from manipulating yeast to developing new types of biofuels and biosensors).

DIY Biology practitioners have been heralded as a paradigm-challenging source of innovation and a welcome demonstration of the

public's interest in the life sciences. They have also raised concerns for biosecurity experts and law enforcement officials as an



underknown variable engaging in life sciences activities. As synthetic biology continues to be become more powerful and available to a broader audience of actors, it is important to note the impact that nontraditional actors such as DIY Biology practitioners will have on contributing to the promise and perils of synthetic biology. Therefore, future discussions

on synthetic biology and emerging biotechnologies should place a greater emphasis on not only the characterization and implications of the introduction of this new actor outside the traditional life sciences, but should also engage the DIY Biology community in helping navigate the biotechnological wild west.

Yong-Bee Lim is a PhD biodefense candidate at George Mason University, focusing on the implementation of an ethnographic study of the do-it-yourself biology (DIYBio) community to see how this group fits into the ever-changing landscape of risks and benefits in areas of biosecurity, biosafety, etc. He is currently a Predoc at Lawrence Livermore National Laboratory, where he works on topics ranging from leveraging high-performance computer model and strategic forecasting of biotechnology to reconceptualize models of risk for emerging and democratized technologies.

Bill Gates Warns Of Epidemic That Will Kill Over 30 Million People

Source: http://www.forbes.com/sites/brucelee/2017/02/19/bill-gates-warns-of-epidemic-that-will-kill-over-30-million-people/#322750413b19

Feb 19 – Bill Gates is a smart guy, who knows something about global health. So when he gives a grave warning about a potential catastrophe, it's a good idea to listen. Yesterday, at the Munich Security Conference in Germany, the man who tops the FORBES richest person in the world list and is Co-Chair

of the Bill and Melinda Gates Foundation said:



Whether it occurs by a quirk of nature or at the hand of a terrorist, epidemiologists say a fast-moving airborne pathogen could kill more than 30 million people in less than a year. And they say there is a reasonable probability the world will experience such an outbreak in the next 10 to 15 years.

Notice that this was at a security conference and not a health meeting. Therefore, he could have focused on some other issue such as nuclear weapons or climate change. But Gates chose to focus on infectious disease threats (whether starting naturally or used as a bioterrorist weapon) for good reason. Our society is in need of a good wake up call and slap in the face.

Our society is woefully under-prepared for a bad pandemic. This was obvious in 2009 when I and Shawn Brown, PhD, Director of Public Health Applications at the Pittsburgh Supercomputing Center (PSC), were embedded in the Department of Health and Human Services (HHS) to use our computational models to help with the national response to the H1N1 influenza pandemic. People in HHS were working very hard each day to mobilize the national response. However, the external resistance that they encountered was troubling. Many external parties put their own individual or business interests in front of national security and were reluctant to share information. Some of the general public questioned whether the pandemic existed and even raised a number of conspiracy theories. Fortunately, the virus was not as harmful as initially thought and the world was spared real disaster. Was the H1N1 pandemic a wake-up call for society? Not really.

Maybe a slower progressing epidemic that resulted in more deaths and disability would do the trick? After the H1N1 pandemic ran its course, more attention focused on the continuing epidemics of methicillin-resistant *Staphylococcus aureus* (MRSA) and other antibiotic-

resistant bacteria. The Centers for Disease Control and Prevention (CDC), with efforts led by <u>John Jernigan</u>, <u>MD</u>, <u>MS</u> and <u>Rachel Slayton</u>, <u>PhD</u>, and other public health agencies have been working to combat the MRSA epidemic with health care facilities and researchers such as our <u>RHEA</u> (<u>Regional Healthcare Analyst</u>) <u>computational modeling team</u> that includes <u>Susan Huang</u>, <u>MD</u>, <u>MPH</u> of the University of California-Irvine, <u>Sarah Bartsch</u>, <u>MPH</u> of the Johns Hopkins Bloomberg School of Public Health (JHSPH), Dr. Brown, <u>Kim Wong</u>, <u>PhD</u> of the University of Pittsburgh Center for Simulation and Modeling, and <u>Loren Miller</u>, <u>MD</u> and <u>Jamie McKinnell</u>, <u>MD</u> of UCLA. Has the MRSA epidemic, which is still continuing, prompted all the major changes in infection control and antibiotic development necessary to combat a pandemic? Again, no. While some advances have been made, lack of resources for infection control practice and research remains a challenge, antibiotic overuse has continued, and relatively few antibiotics are under development. <u>As I have stated previously</u>, this continues to be a crisis as our society may eventually run out of antibiotics that work against bacteria.

Surely then an epidemic in which the pathogen is highly and rapidly fatal would spur people to more action. Well, it did result in a new version of the song "Do They Know It's Christmas?"...but, to sound like a broken record, no, it did not deliver the needed kick in the behind. The 2014-2016 Ebola outbreaks in West Africa involved a virus that killed around half the people it infected. Seemingly suddenly, Ebola jumped into the headlines (even though it had been around for years) when the number of deaths in Liberia, Sierra Leone, and Guinea surged, raising concerns that the pathogen may spread elsewhere, including the U.S. Suddenly, people were saying, "quick, we need a vaccine" without giving the world much lead time to deliver and prepare accordingly as stated in our *Lancet* piece. I recall during the Paul G Allen Family Foundation Ebola Innovation Summit seeing many people around the room who had not even heard of Ebola a year prior, saying that we needed to eliminate this disease, naively underestimating the effort required to do so. As I tried to explain to a founder of a major dot.com at the meeting, creating a successful website is not the same as combating an infectious disease. Fortunately for the rest of the world, the Ebola epidemic eventually subsided without any vaccines or new technologies. As Gates mentioned during his Munich speech, "we would be wise to consider the social and economic turmoil that might ensue if something like Ebola made its way into urban centers."

How much did the activity around the Ebola outbreaks change the world? The refrain: not nearly enough. <u>As David Peters, MD, DrPH</u>, Chair of International Health at JHSPH explains in the following video, many major systems problems in West Africa contributing to the Ebola epidemic still remain and could easily lead to future epidemics:

Indeed, many health systems around the world remain broken. For example, our <u>HERMES Logistics</u> computational modeling team, coordinated by <u>Leila Haidari</u>, <u>MPH</u> and working with <u>Raja Rao at the Bill and Melinda Gates Foundation</u>, has found that <u>numerous countries have major problems in their vaccine supply chains</u> that could benefit from significant re-design. Even if the proper technology such as vaccines and medications are available during an epidemic, effective and efficient supply chains and health systems would be necessary to get them to where they need to go. <u>Progress has occurred with vaccine supply chains</u> but not as much in other types of supply chains and other aspects of health systems. As before, the Ebola outbreaks resulted in some changes but not nearly enough.

CDC halts work in its highest security laboratories over equipment concern

Source: http://www.usatoday.com/story/news/2017/02/17/cdc-halts-work-in-bsl4-labs-over-equipment-issue/98065184/

Feb 17 – The Centers for Disease Control and Prevention has temporarily suspended work in its highest security laboratories because of concerns about critical air supply hoses that attach to full-body suits that protect

scientists against exposure to the world's most deadly viruses

The air hoses, which have been used by about 100 workers inside CDC's biosafety level 4 labs in Atlanta since they opened in 2008,



may never have been intended to be used for carrying breathable air, the agency announced Friday. The CDC said it learned of the potential issue on Monday, as the agency was in the process of ordering replacement air hoses for the first time since the maximum containment labs went "hot" nearly a decade ago inside its \$214 million Emerging Infectious Diseases Laboratory building.

Steve Monroe, CDC's associate director for laboratory science and safety, said the action is being taken out of an abundance of caution. "There is no reason to suspect these hoses contained any toxic material," Monroe said in an interview. He said CDC will be testing the air coming out of the hoses to see if it meets federal standards for breathable air. Results are expected next week.

USA TODAY revealed

last month that these same air hoses have a history of disconnecting from CDC lab workers' suits as they do experiments with lethal and often untreatable pathogens such as the Ebola virus

"The air hose connector on my suit came off while I was working in [redacted] again," a CDC scientist wrote in a May 2013 email to other agency staff. The email was among dozens of heavily redacted lab accident reports the CDC took nearly two years to release in response to a federal Freedom of Information Act request filed by USA TODAY in January 2015.

The scientist wrote that a colleague helped them "get out safely, reattaching my hose as best he could ... I live to work another day!" The CDC sent out a mass email to about 40 lab workers the same day reminding them to make sure that their protective suits are in working order and to "be sure to pay attention to your breathing air hose" and ensure connections are tight, the records obtained by USA TODAY showed.

In response to USA TODAY's report, leadership of the House Energy and Commerce Committee has asked CDC to provide a full accounting of all lab incidents at the agency since 2012.

Monroe said Friday he didn't know why CDC facilities staff had recently decided it was time to replace the air hoses, but that he didn't think it had to do with disconnection issues. When facilities staff contacted the company that now

owns the firm that made the hoses, they were told that the hoses were not certified for use with breathable air. The CDC and Monroe would not name the company.

The CDC is contacting other operators of biosafety level 4 (BSL-4) labs that may use similar hoses. But so far, Monroe said, they have not found other labs that have been using the same hoses. About 80 to 100 air hoses dangle from the ceiling in the CDC's BSL-4 labs. Lab workers, connect to the nearest hoses as they work in various locations in the labs. The hoses supply purified air that is used for both breathing and creating positive pressure inside

the moonsuit-like protective gear.

Monroe said the CDC expected to get a small shipment of hoses on Friday night, which will allow the agency to do critical work until additional hoses are obtained. He said the reporting of the issue to his office and the agency's transparency about it with staff and the public is an example of safety improvements at the embattled agency. "To me this is a success of our efforts over the last two years to enhance the culture of safety with laboratory staff," Monroe said.

Lab safety at the CDC has been under intense scrutiny since 2014 when the agency had a series of high-profile lab incidents involving anthrax, Ebola and a deadly strain of avian influenza. An ongoing USA TODAY investigation has revealed that the CDC's labs have faced secret federal sanctions,

and it has also found hundreds of safety accidents at other public and private research facilities nationwide.





FEMA countererrorism training center suspected lethal toxin mix-up years ago

Source: http://www.usatoday.com/story/news/2017/02/20/fema-center-for-domestic-preparedness-ricin-foia-documents/98173336/

Feb 20 – Officials at a federal training facility that mistakenly exposed thousands of first responders to deadly ricin toxin were worried five years ago that their vendor had shipped the wrong type of powder, records obtained by USA TODAY show.

The vial of powder contained ricin "greater than 90% pure," according to its certificate of analysis. The certificate also warned: "Extremely toxic! ... May be lethal if injected, inhaled, or ingested — use caution when handling." Ricin, made from castor beans, is regulated as a potential bioterror agent. There is no antidote for ricin poisoning.

But the vendor assured staff at the Federal Emergency Management Agency's Center for Domestic Preparedness that the powder was a safer, inactivated form of the poison, according to a December 2011 email.

So FEMA went ahead and used the powder in its training programs – and for five years kept buying more of it for use in classes -- despite the vials continuing to arrive with certificates declaring that the powder was lethal, nearly pure ricin, the records show.

FEMA has blamed its vendor for the mix-up – the latest known high-profile mishandling of bioterror pathogens and toxins by a federal agency. But the newly released documents raise questions about why FEMA didn't catch the problem sooner.

The agency and the Department of Homeland Security Office of Inspector General are investigating the incident, which was revealed last fall by The Anniston Star.

"The FEMA review and OIG investigation are ongoing," the agency said in a statement to USA TODAY. FEMA said it is taking actions improve how it procures and verifies biological materials in the future. In the meantime, since Nov. 8, the agency has suspended use of biological and chemical agents in training programs at its Center for Domestic Preparedness facility in Anniston, Ala., until sometime in March.

FEMA has refused to identify its vendor and blacked out the vendor's name from the newly-

released documents. USA TODAY has previously reported it was Toxin Technology in Sarasota, Fla. Company officials could not be reached Monday, but have previously said all of its ricin products were accurately labeled as "RCA60" — a scientific name for the whole ricin toxin, which can be deadly.

Nearly 10,000 firefighters, paramedics and other responders participated in simulated bioterrorism response sessions where the deadly form of ricin was used in detection equipment classes instead of the safer form that FEMA thought it had purchased. All of the trainees were protective equipment and nobody was sickened, FEMA has said.

The FEMA mistakes follow several other highprofile safety lapses at federal biodefense facilities that have prompted ongoing congressional investigations. In 2015, the Pentagon discovered that an Army lab had been mistakenly shipping specimens of live anthrax – labeled as killed – to labs and defense contractors around the world for a decade. In 2014, the Centers for Disease Control and Prevention potentially exposed workers to live anthrax and the Ebola virus.

The newly released documents indicate that the FEMA mix-up began with an email exchange in December 2011 – after the training center had made some initial purchases of what it thought was the inactivated form of ricin, called "chain A" because it contained only one of the two parts of the whole ricin toxin.

"Can you please confirm that you shipped Ricin chain A and not Ricin. The question has arose that there is a possibility we could have received Ricin instead of the chain A," a training center employee wrote to the vendor that supplied the powder in a Dec. 6, 2011 email. FEMA blacked out the employee's name from the records.

The next morning, a representative from the

supply company replied: "The only Ricin we have is chain A. So yes, the product we shipped you is Ricin chain A." The company and



employee's name were also redacted.

An October 31, 2011 invoice sent by the company to the training center showed that the item shipped was catalog item "RCA-1" and "LOT#20510RCA" and it was described as "Ricin Toxin (RCA 60)." RCA60 is the scientific name for the lethal whole ricin toxin. And the "Certificate of Analysis" for the specific lot that was shipped also stated that it was Ricin (RCA60) "greater than 90% pure" and it warned that it was extremely toxic.

Over the next five years, the records show that FEMA placed several more orders with the company that indicate the training center intended to buy inactivated, chain A ricin. FEMA repeatedly submitted "Intended Use Declaration" forms to the vendor that state the agency was requesting "Ricin chain A" and not the more highly regulated whole toxin.

Yet repeatedly over the years, the company sent back to FEMA invoices and certificates of analyses that said the vials being shipped were "RCA60" -- the lethal form of ricin, the records show. Despite the conflicting documentation coming in from the vendor, when the vials would arrive at the Alabama training center, FEMA staff would log the product received as Ricin Chain A – the inactivated form.

FEMA has said the ricin mix-up was discovered in November after training center staff "recognized a discrepancy in the documentation related to the type of ricin being provided."

According to the newly released records, a training center staffer was seeking an updated price quote in October 2016 to purchase the vendor's catalog item "RCA-1" and during the discussions had specified that the center wanted just the "chain A" form of ricin. The request raised concerns from a worker at the supply company, who in an email told the FEMA worker to note "that RCA-1 is both 'chain A & B. [Redacted] mentioned that you were referring to 'chain A' only?"

Unsaid in the email is that when both chains are present, the ricin is a whole toxin – and capable of being fully lethal, unlike the partial toxin FEMA thought it had been ordering.

In a statement to USA TODAY, FEMA said the supply firm told the training center biologist requesting the price quote that the company only sold ricin holotoxin. "This response was the opposite from what the vendor had originally told (the training center) in 2011 (that they only sold ricin A-chain)."

Next-gen antibiotics might defend against bioterrorism, study shows

Source: shows/

https://knowridge.com/2017/02/next-gen-antibiotics-might-defend-against-bioterrorism-study-



Feb 22 – The compounds target ribosomes in the translation phase of the bacteria's genetic process, he adds.

For bacteria to grow and proliferate, protein-generating ribosomes, like engines rolling down a track, must travel down the messenger RNA (mRNA) to translate additional proteins.

However, when the ribosomes become stuck, the bacteria dispatches ribosome rescue factors —tmRNA, ArfA and ArfB—to free the ribosome.

Keiler says that KKL-10 and KKL-40 were able to halt this rescue operation in the bacteria without damaging host cells.

Nasty biological weapon

"At the beginning of the study, we identified compounds that block rescue of ribosomes that are stuck on mRNA, and these have antibiotic activity against a number of pathogens that we can test in the lab," says Keiler.



CBRNE-TERRORISM NEWSLETTER - February 2017

"In this study, first, we wanted to test the compounds against a pathogen that is important for biodefense and we also wanted to make sure that these compounds would work inside eukaryotic cells."

Franscisella tularensis can cause fatalities in up to 60 percent of the cases if left untreated, says Girish Kirimanjeswara, assistant professor of veterinary and biomedical sciences at Penn State, who worked with Keiler. It was also stockpiled as a biowarfare agent during the Cold War.

"In today's world of terrorism, it is essential that we are well-prepared to defend ourselves and our military personnel against biowarfare agents," says Kirimanjeswara.

"In that regard, finding new targets and antibiotics against these agents is critical and our research shows that these compounds may be very."

Bacteria can't resist them

After decades of using antibiotics to kill pathogens, more and more diseases have become resistant to conventional drugs and treatments, according to the researchers, who report their findings in Antimicrobial Agents and Chemotherapy.

This has increased the urgency to find new drugs and new ways of stopping pathogens.

"There are many pathogens that are resistant to all existing antibiotics—if you are infected with one of these totally resistant strains and show up in the clinic there's nothing the doctors can do for you," says Keiler.

"If your immune system can fight off the infection, you'll survive and if it can't, you die. It's back to pre-1940s-era medicine."

"If we don't develop new drugs and the resistant genes are going to continue to spread, more and more diseases will become untreatable."

He suggests that because the researchers are using a new compound and targeting a new pathway, Franscisella tularensis—and possibly other pathogens—may struggle to adapt resistance to the treatment.

"One of the good things about our compounds is this is a new chemical, so it's unrelated to any of the existing drugs, which means maybe there may not be enzymes out there to modify those drugs and inactivate them," says Keiler. "Although we won't know that until we get into the clinic."

Kirimanjeswara says that Franscisella tularensis is difficult to stop because it can survive both outside and inside the cell, as well as in different compartments of host cells.

"This strategy allows bacteria to survive and escape from host immune responses, for example, within the host cells, and there are not many antibiotics that can target a bacterium in all these compartments," says Kirimanjeswara.

"In that regard, these compounds were effective outside the cells, in the various stages of endocytic vesicles, and in the cytoplasm, making it a very attractive way to treat bacterial diseases."

The next steps for the research will be to experiment on delivery designs and to test the compounds in animals. The National Institutes of Health supported this work.

From Zika to Dengue, a Warming Europe Faces New Disease Threats

Source:http://www.medscape.com/viewarticle/875603?src=mkm_ret_170223_mscpmrk_eumonthly_int &uac=82598DG&implD=1295362&faf=1

Feb 10 – Europe is facing a growing risk of new disease outbreaks - which may prove difficult to quickly detect and stop - as rising temperatures make the region more vulnerable to illnesses brought in by travelers and trade, a leading health expert warns.

Lyme disease, for instance, is gaining ground from Russia to Britain to Croatia as temperatures rise, while dengue fever - carried in by travelers - risks gaining a foothold in southern European countries such as Italy and Greece.

West Nile virus and malaria are also growing concerns, as is Zika, scientists say.



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"The European Union is a hot spot for the emergence of communicable diseases, and is highly connected to other hotspots," said Jan Semenza, who heads scientific assessment for the European Centre for Disease Prevention and Control (ECDC), based in Sweden.

With 590 million people arriving at European Union airports in 2015 - one of the busiest airspaces in the world - and changing climatic conditions in many parts of Europe making it easier for arriving diseases to survive and spread, the threat of one becoming established is growing, Semenza said.

Today 61 percent of public health outbreak threats tracked in Europe are driven by globalization - including travel and trade - and environmental change, he said during a discussion at the Grantham Institute at Imperial College London this week.

What is particularly worrying is that only a few European countries - including Britain and Spain - say they feel their disease surveillance systems are up to the task of tracking the new threats, he added.

"Most European surveillance systems said they can't handle climate change," Semenza said.

Predicting outbreaks

The ECDC, established in 2005 in the wake of concerns about the spread of Asian flu and SARS (severe acute respiratory syndrome), is getting better at tracking and predicting disease outbreaks "that could overrun the system - catastrophic events, things we can't cope with," the researcher said.

Scientists, for instance, have combined information on where dengue mosquitoes could survive in Europe, and during which months, with data on where and when passengers from dengue-outbreak countries are arriving in Europe.

That has led to airports in Milan and Rome, for instance, receiving alerts when the risk of dengue transmission is highest, to help them step up surveillance of arrivals during that period, Semenza said. Scientists at the Swedish center - the European counterpart of the U.S. Centers for Disease Control and Prevention (CDC) - also were able to predict outbreaks of West Nile fever in 2014, with 87 percent accuracy, based on summer temperatures, the location of wetlands and the migration paths of birds that can host the disease, he said.

An outbreak of malaria in Greece in 2011 also was effectively contained after health experts looked for other areas like the outbreak region - with warm temperatures, low elevation and irrigated fields - and created a map used to target mosquito spraying campaigns, Semenza said.

The disease threat that now keeps him up at night, the public health expert said, is Zika.

Warming conditions in Europe could make transmission of the virus easier as mosquitoes spread, he said

A surge of Zika in Latin America has coincided with thousands of cases of microcephaly - a severe birth defect associated with small head size - in children born to women exposed to the virus.

With the CDC estimating the cost of lifetime care for children born with microcephaly at \$1 million to \$10 million each, the disease is one Europe cannot afford to acquire, Semenza said. "Zika is the one that's so scary," he said.

Disease "superspreaders" were driving cause of 2014 Ebola epidemic

Source: http://www.medicalnewstoday.com/releases/315853.php

Feb 15 – A new study about the overwhelming importance of "superspreaders" in some infectious disease epidemics has shown that in the catastrophic 2014-15 Ebola epidemic in West Africa, about 3 percent of the people infected were ultimately responsible for infecting 61 percent of all cases.

The issue of superspreaders is so significant, scientists say, that it's important to put a better face on just who these people are. It might then be possible to better reach them with public health measures designed to control the spread of infectious disease during epidemics.

Findings were reported in *Proceedings of the National Academy of Sciences*.

The researchers concluded that Ebola superspreaders often fit into certain age groups and were based more in the community than in health care facilities. They also continued to



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spread the disease after many of the people first infected had been placed in care facilities, where transmission was much better controlled.

If superspreading had been completely controlled, almost two thirds of the infections might have been prevented, scientists said in the study. The researchers also noted that their findings were conservative, since they only focused on people who had been buried safely.

This suggests that the role of superspreaders may have been even more profound than this research indicates.

The research was led by Princeton University, in collaboration with scientists from Oregon State University, the London School of Hygiene and Tropical Medicine, the International Federation of Red Cross and Red Crescent Societies, the Imperial College London, and the National Institutes of Health.

The concept of superspreaders is not new, researchers say, and it has evolved during the 2000s as scientists increasingly appreciate that not all individuals play an equal role in spreading an infectious disease.

Superspreaders, for instance, have also been implicated in the spread of <u>severe acute respiratory syndrome</u>, or <u>SARS</u>, in 2003; and the more recent Middle East respiratory syndrome in 2012.

But there's less understanding of who and how important these superspreaders are.

"In the recent Ebola outbreak it's now clear that superspreaders were an important component in driving the epidemic," said Benjamin Dalziel, an assistant professor of population biology in two departments of the College of Science at Oregon State University, and co-author of the study.

"We now see the role of superspreaders as larger than initially suspected. There wasn't a lot of transmission once people reached hospitals and care centers. Because case counts during the epidemic relied heavily on hospital data, those hospitalized cases tended to be the cases we 'saw.'

"However, it was the cases you didn't see that really drove the epidemic, particularly people who died at home, without making it to a care center. In our analysis we were able to see a web of transmission that would often track back to a community-based superspreader."

Superspreading has already been cited in many first-hand narratives of Ebola transmission. This study, however, created a new statistical framework that allowed scientists to measure how important the phenomenon was in driving the epidemic. It also allowed them to measure how superspreading changed over time, as the epidemic progressed, and as control measures were implemented.

The outbreak size of the 2014 Ebola epidemic in Africa was unprecedented, and early control measures failed. Scientists believe that a better understanding of superspreading might allow more targeted and effective interventions instead of focusing on whole populations.

"As we can learn more about these infection pathways, we should be better able to focus on the types of individual behavior and demographics that are at highest risk for becoming infected, and transmitting infection," Dalziel said.

Researchers pointed out, for instance, that millions of dollars were spent implementing message strategies about Ebola prevention and control across entire countries. They suggest that messages tailored to individuals with higher risk and certain types of behavior may have been more successful, and prevented the epidemic from being so persistent.

Lead author on the study was Max Lau, a postdoctoral research associate at Princeton University focused on applying statistical methodology in epidemiological and ecological modelling. at Princeton University. Support and funding was provided by the Bill and Melinda Gates Foundation, the National Institutes of Health, and the UK Medical Research Council.

Article: Spatial and temporal dynamics of superspreading events in the 2014-2015 West Africa Ebola epidemic, Benjamin Douglas Dalziel et al., Proceedings of the National Academy of Sciences, doi: 10.1073/pnas.1614595114, published online 13 February 2017.

