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Attribution

Use of Microbial Forensics in Cases Involving Illicit Programs and/or Use

Christopher A. Bidwell, JD
Federation of American Scientists

Dr. Randall S. Murch
Virginia Tech University

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FAS STUDIES ON USE OF MICROBIAL FORENSICS

- **Attribution Decision Making Regarding Biological Weapons Use: Exploring and Defining Cross-Domain Science-Legal-Policy-Response Frameworks**
- **Three Focused Studies To date;**
 - **Cultural Issues**
 - **Legal Issues**
 - **Microbial Forensics Capacities in the Middle East Region**

Sub Themes;

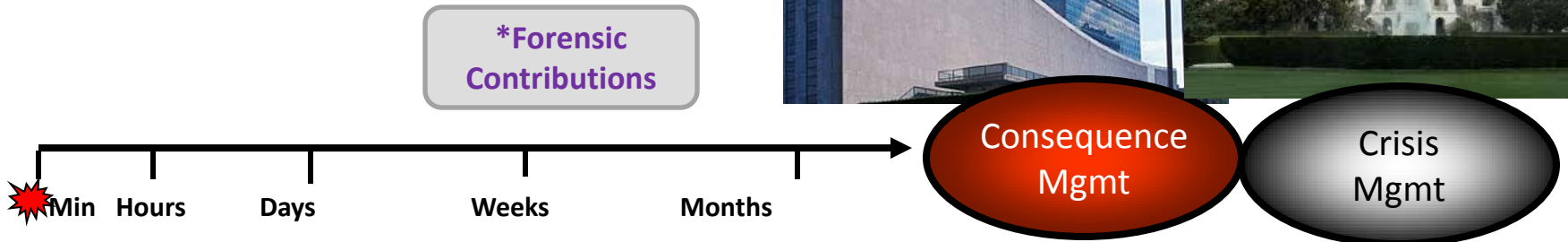
- **How is Microbial Forensics related to deterrence?**
- **Will Microbial Forensic evidence be trusted as legitimate?**
- **CBMs - Microbial Forensics and the sharing of best practices**

OPPORTUNITY TO PRESENT OUR WORK FOR DISCUSSION – We welcome feedback

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Global Leaders' Questions

- Are we dealing with a Bio issue?*
- How bad are the effects, and how much worse will it get?
- Who did it?*
- Did it come from a program or labs we know about?*
- Will there be more attacks?*
- What are the nations involved doing about it?*
- What can we know, by when, and with what confidence?*



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The Cacophony of Truths

- The Intelligence Community offers knowledge about “A”
- The Science Community knows and can explain “B”
- The Law Enforcement Community is focused on “C”
- The Military Community is able to do “D”
- Civil responders worry about resolving public health, safety, recovery and resiliency issues and can do “E”
- The Policy Community wants to know the answer to “F”

The nature of A,B,C,D,E and F
can change every 24 hour news cycle

What is Proof ?

It's a Matter of Degree

- **Criminal Context** - Justification for the state to imprison or take a life
 - Beyond reasonable doubt.
- **Civil Context** - Justification to take property or money
 - More likely than not (or “50%+1”)
- **Pretrial Context** - Justification to proceed with a civil or criminal trial
 - Plausible (solid story on its face)
- **Proffering of Evidence in Court Context** – Reliable source
 - Reliable as to its truthfulness and usefulness to the issues being debated
- **Political Context** - Justification to take an action, such as retribution
 - Nebulous depending on situation
 - Affected by economics, legal systems, culture and bias
 - Non factual assertions may effectively challenge evidentiary facts

- Compelling a nation (**friendly**, **unfriendly** or **neutral**) to change its behavior
- Gaining a nation's support (**friendly** or **neutral**) for military action
- Compelling a nation (**friendly**, **unfriendly** or **neutral**) not to interfere with another nation's military actions
- Gaining a nation's support (**friendly** or **neutral**) for political action or sanctions
- Compelling a nation (**friendly**, **unfriendly** or **neutral**) to take domestic police actions (**Arrest a Citizen?**)
- Compelling a nation (**friendly**, **unfriendly** or **neutral**) to take domestic regulatory actions

- Common Law System
- Code Law System
- Islamic Law System
- International Tribunal

- Sample source
 - Who took it?
 - Where did it come from
 - Where was it taken from?
 - Who else had access to it?
- Chain of custody
 - On misstep in the chain can invalidate a whole chain of 20 or more handoffs
- The Lab
 - Pre contamination/cleaning procedures
 - Each and every beaker, measuring device and countertop
 - Certification of personnel
 - Alleged biases/affiliations
 - Quality of training/education
 - Proper equipment
 - Calibration of equipment

- Examine the society you are trying to influence:
 - Hierarchical vs. Egalitarian
 - Individualist vs. Collectivist
 - Traditional vs. Secular rational
 - Poly-chronic vs. Mono-chronic
 - High context vs. Low context
- Match against influencee's cultural position in society:
 - Bureaucratic
 - Academic
 - Business
 - Civic

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A GREAT ATTRIBUTION CAPABILITY DOES THE FOLLOWING:

- Answers the policy question posed
- Is understandable by non-technical people
- Is understandable by scientists in other countries
 - Western and Non-Western
 - Has disclosable technical standards (discoverable)
- Is capable of satisfying Chain of Custody challenges
- Can help determine culpability as well as exonerate the accused

- Fear of what we can't sense
 - Microbes are not tangible like bullets
 - The less we can sense a threat the more we fear it
- Fear of the complex
(Exacerbated by the fact that we can't sense it)
 - Leads to irrational panic
 - Leads to denial of factual evidence
 - Leads to exaggeration of the threat/risks

- Microbial forensics is often treated as empirical science, but is actually more probabilistic math
 - Forensic science is science for the courtroom
- Transparency in the evidence gathering process matters greatly
- Challenges may not be to the use of science, but with interpreting what the science says
- Hard factual evidence may not move a hardened political position – questioning of the science can be a proxy for questioning policy
- All politics is local

- **The probative weight of scientific evidence (such as microbial forensics) should not be assumed**
- **Context in which evidence is presented is much more important than the scientific validity of the evidence**
- **Without a credible messenger there is no credible science (context)**
- **Strengthening the process (evidence acquisition) is as important as strengthening the science. Transparency will matter.**
- **There can be pressure by many interests to wish away evidence of a bio attack or bio threats**
- **Invest energy and money in disproving causal assertions by others**
- **Advance engagements can help overcome suspicion**

IN THE END ITS ALL ABOUT TRUST