

# COVID-19 Demonstration and Lessons of Multiple-Order Biosecurity Risks and Threats

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## Disclaimer

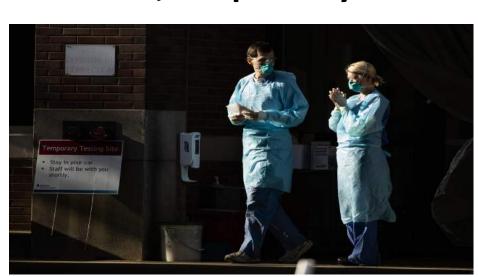
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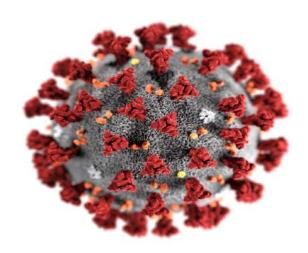
## COVID-19

NOT a bioweapon

#### Yet...

- Clear and present threat to biosecurity
- Current and latent multi-dimensional, reciprocally interactive effects
  - Biological
  - Psychological
  - Socio-economic
  - Political





## **Biorisk/Biosecurity Considerations and Concerns**

- While Mass Destruction is possible...
  - RDTE/Use in such ways constrained by current BTWC, CWC
- Mass <u>DISRUPTION</u> is likely...
  - RDTE not necessarily bounded by BTWC/CWC
  - Non-kinetic in articulation and effect
  - Incurs "ripple effects" on/across scales and levels

# **Demonstration of Biosecurity Vulnerability**

#### Preparedness Process

- Infrastructure and Coordinated Response Functions
- Surveillance
- Quantification
- Readiness: Review, Revision
- 2010 NATO Moldova Model
- Crimson Contagion Exercise
- 2019 Report to Senate Intelligence Committee

See: DeFranco JP, Giordano J. The dark side of delivery; The growing threat of bioweapon dissemination by drones. DefenceIQ 13(1): (2020).

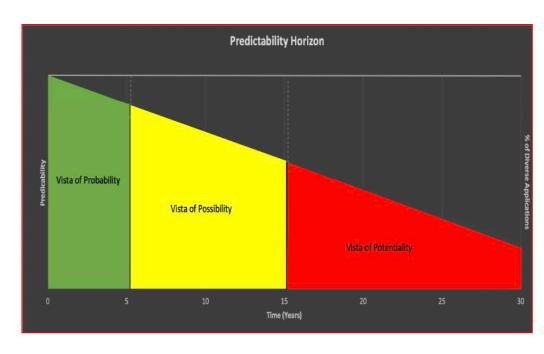
Giordano J, Snow JJ, DeFranco JP. Weaponized prions: Much ado about nothing, or big concerns about little proteins? *DefenceIQ*, 12(42): (2019).

Giordano J. Weaponizing the brain: Neuroscience advancements spark debate. Nat Def, 6: 17-19 (2017).

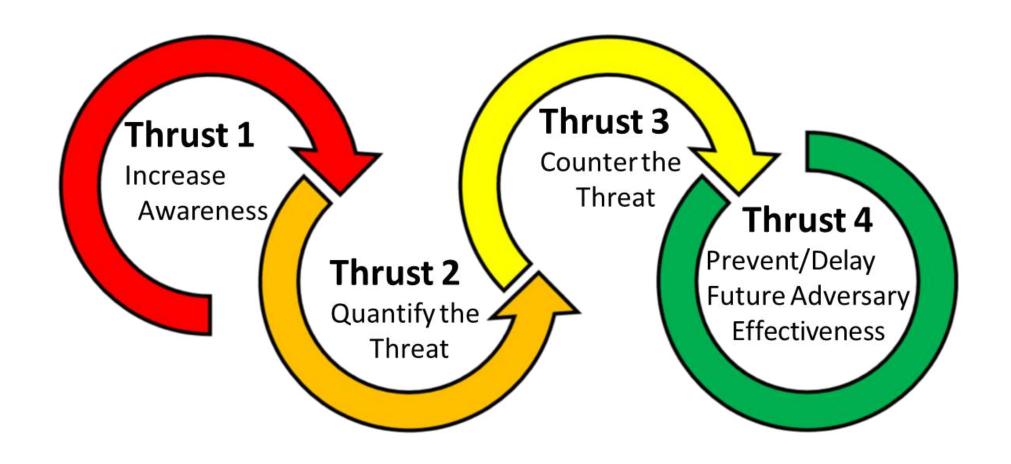
# Strategic Envisioning – and Engagement

#### Vista of:

- <u>Probability</u>: Present to 5 years "What exists now, and 'soon'..."
- <u>Possibility:</u> 5 to 10 years "Given probabilities, what might occur..."
- <u>Potentiality:</u> 10 to 25/30 years "Given possibilities, what could be done with them..."



# **Four Thrust Strategy**



Whole of Nation approach required to identify, characterize, counter, and exploit/prevent biosecurity risks and threats to United States' public health and socio-economic stability

# Thrust 1

Increase Awareness

#### Thrust 2

Quantify the Threat

#### Thrust 3

Counter the Threat



Prevent/Delay **Future Adversary** Effectiveness



Academic Institutions



Law Enforcement



Department of Defense



Research Centers







State Department



National Labs



Industry



# Summary

Biosecurity risks/threats are increasing: clear and present danger to U.S. national security and stability

# Establish PMO/POR <u>now</u>

- Fund research in technologies, innovations, countermeasures, and solutions
- Develop capabilities to address and defeat evolving biosecurity (natural, kinetic and non-kinetic) threats (ie- Strategic Plan and tactical flexibilities)
- Remain ahead of competitors abilities to exploit US weaknesses
- **Engage Whole of Nation approach leveraging all sectors of national power**

## **Additional Information**

- Snow JJ, Giordano J. Aerosolized nanobots: Parsing fact from fiction for health security a dialectical view. Health Security 17(1): 74-76 (2019).
- DiEuliis D, Lutes CD, Giordano J. Biodata risks and synthetic biology: A critical juncture. J Bioterrorism Biodef 9(1): 2-14 (2018).
- Snow JJ, Giordano J. Public safety and national security implications of the horsepox study. Health Security 16(2): 1-3 (2018).
- DiEuliis D, Giordano J. Gene editing using CRISPR/Cas9: implications for dual-use and biosecurity.
   Protein and Cell 15: 1-2 (2017).
- DiEuliis D, Giordano J. Why gene editors like CRISPR/Cas may be a game-changer for neuroweapons. Health Security 15(3): 296-302 (2017).
- Giordano J. Battlescape brain: Engaging neuroscience in defense operations. *HDIAC Journal* 3:4: 13-16 (2017).
- Palchik G, Chen C, Giordano J. Monkey business? Development, influence and ethics of potentially dual-use brain science on the world stage. *Neuroethics*, 10:1-4 (2017).
- Tennison M, Giordano J, Moreno J. Security threats vs aggregated truths: Ethical issues in the use
  of neuroscience and neurotechnology for national security. In: Illes J, Hossein J. (eds.) Neuroethics:
  Defining the Issues in Theory, Practice and Policy. Oxford, Oxford university Press, 2017.
- Giordano J. The neuroweapons threat. *Bull Atomic Sci* 72(3): 1-4 (2016).
- Giordano J, Forsythe C, Olds J. Neuroscience, neurotechnology and national security: The need for preparedness and an ethics of responsible action. *AJOB-Neuroscience* 1(2): 1-3 (2010).

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