SAFETY, ETHICS, AND RESPONSIBILITY IN THE AGE OF EMERGING & CONVERGENT TECHNOLOGIES

WORKSHOP 1

Outline

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AI Movies Application: Terminator, HER, WALLE

1-Learning Objectives

Define — Concerning technologies and potential **impact**

Articulate — Convergent cyber + AI + Quantum + Bio Risks

Practice — Coordinated Operational Decision-Making

Understand — Tools for reporting and regulating technologies

2-CONVERGENT & EMERGING TECHNOLOGIES

Biotechnology

- Application of living organisms, cells, or biological processes to develop products and technologies that benefit human life and the health of the planet.
- Essentially merges biology with technology to solve problems across various fields, including medicine.

Artificial Intelligence (AI)

- Branch of computer science focused on building machines capable of performing tasks that typically require human intelligence, such as learning, reasoning, problem-solving, perception, and understanding language.

Quantum Technology

- Emerging field of physics and engineering that harnesses the unusual properties of matter and energy at the atomic and subatomic level (e.g. quantum mechanics) to create powerful new tools and applications that surpass the capabilities of classical technology.

Cyber Technology

- Collection of tools, skills, and processes used to operate in and manage the interconnected digital environment

3 - INTERACTIVE QUIZ - STAKEHOLDERS

#1. Whose responsibility is it to think about the end use of a product, how it can be used for good, how it could be used for bad, and if there are any unforeseen consequences.

a) Researchers
b) Policy Makers
c) Lawmakers (Congress/Senate/World Stakeholders)
d) Scientists
e) Companies
f) General Public
g) All of The Above

4 - Case Study & Discussion

A. Biotechnology, Big Data, Privacy, Surveillance, Transparency & Human Rights

- In 2014, Shenzhen, China-- The European Patent Office issued patent to BGI for its independently researched non-invasive prenatal genetic test (NIPT) technology in 15 countries. (FBI)
    - BGI Dx, a subsidiary, provided NIFTY® tests to nearly 400,000 pregnant women worldwide.
    - NIFY were used to collect genetic data from then stored in China's government funded gene database. (Reuters)

<u>Discussion Questions</u>

1. Who did this technology / data collection effect?
2. Who should have sounded an alarm? Or asked questions?
3. What can be done in the future to prevent such cases?
4. Are there similar cases you can think of?

5-THE LIGHT SIDE OF TECHNOLOGY

Advanced , Personalized, & Regenerative Medicine

Adaptive Solutions to World Programs (i.e. end world hunger)

Uprecendented Economic advancements/

Time, Space, and Futuristic Travel

6-THE DARK SIDE OF TECHNOLOGY

Targeted diseases; can be based or avoid ethnicities

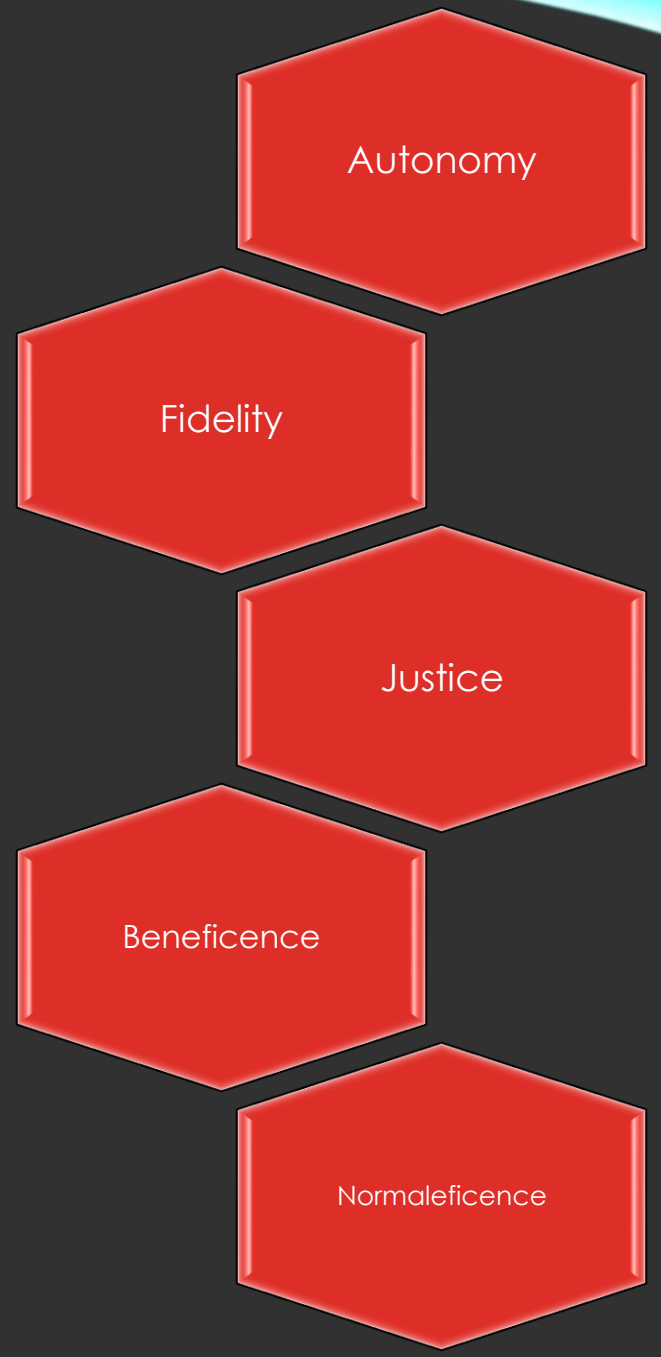
Cloning / and Genetic Modifications

Autonomous Robotics and Cyborg Technologies

Autonomous AI-Driven Factories

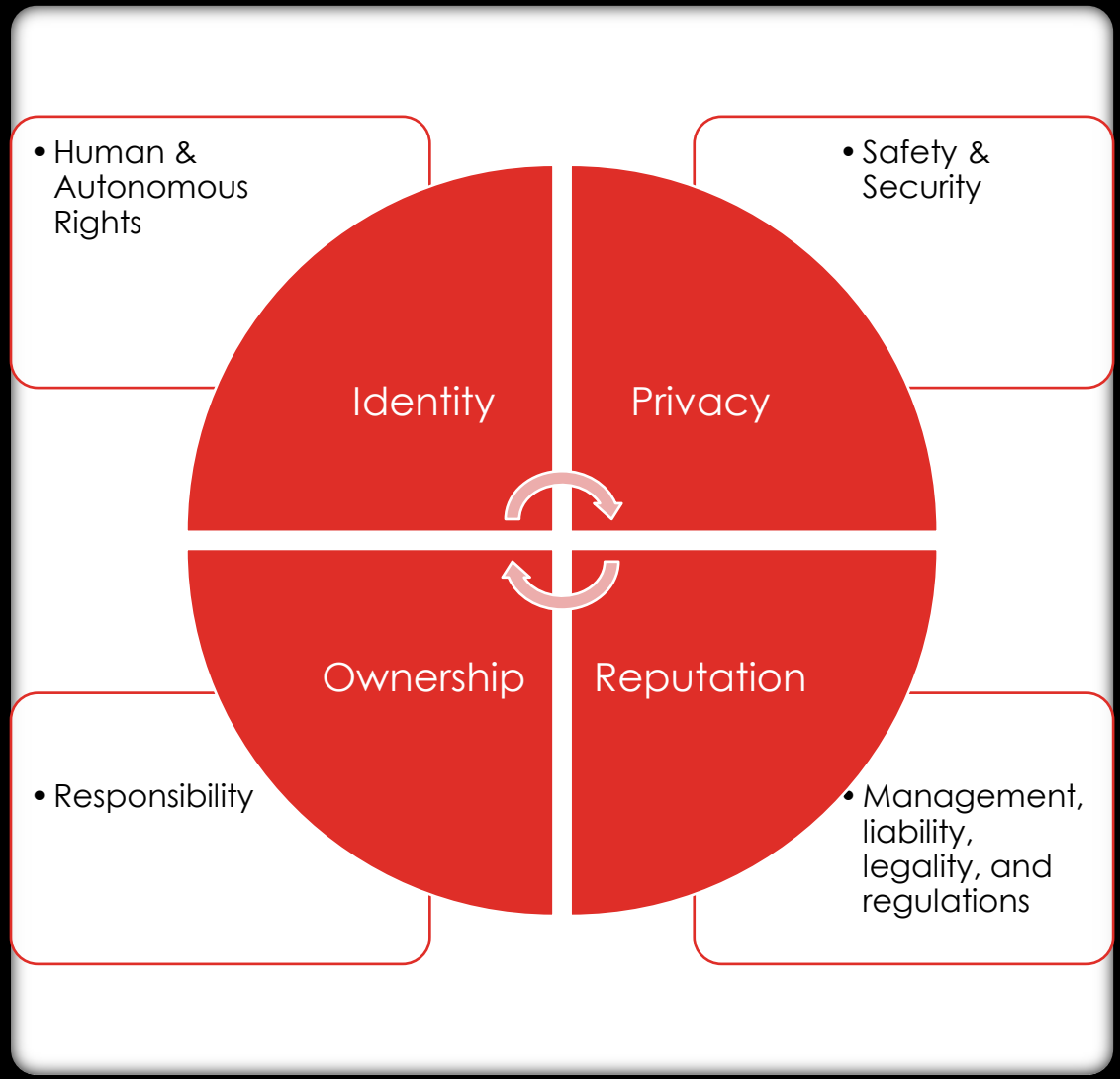
Ethical Considerations: Basic Questions to Consider

- Do you know the end use of your (research, science, product)?
- Does your technology impact other emerging technologies?
- Are there potential risks you should make others aware of? If so – who?
- Are there security concerns or potential risks if technology is misappropriated or misused whether intentionally or accidentilly?
- Could the technology be alive or replicated?
- Does the technology require human intervention?
- Who owns the technology or data?



7-REAL WORLD CONSIDERATIONS

- Using one of the technologies discussed:
  - Develop a realistic scenario that you may be exposed to in your line of work.
  - Outline the major concerns and/or considerations as it relates to the different stakeholders in the appropriate relevant categories (feel free to add additional considerations):
    - (1) identity, (2) privacy, (3) security, (4) human / autonomous rights, (5) ownership, (6) reputation, (7) legality & liability.

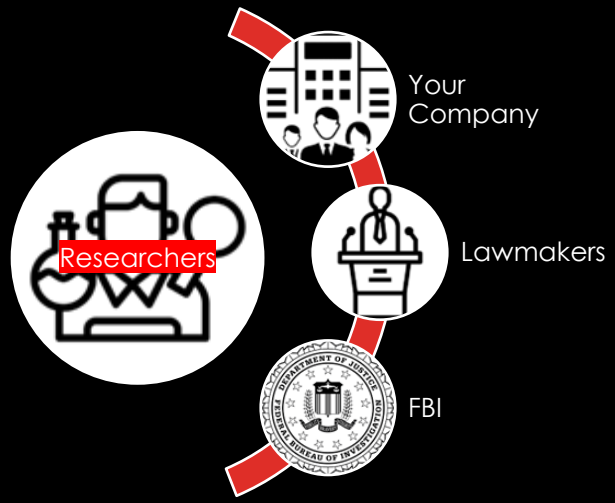


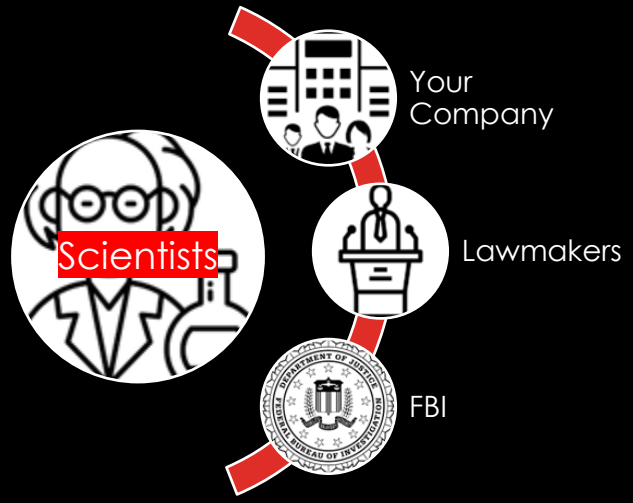
8 – INTERACTIVE QUIZ-RESPONSIBILITY

#2. Given the global dynamics and global reach of companies – who is responsible for oversight, management, and legal ramifications of concerning technologies? (Select All / Best Answers that Apply)

a) Researchers
b) Policy Makers
c) Lawmakers (Congress/Senate/World / International Stakeholders)
d) Scientists
e) Companies
f) General Public
g) Governments
h) No One
i) All of The Above

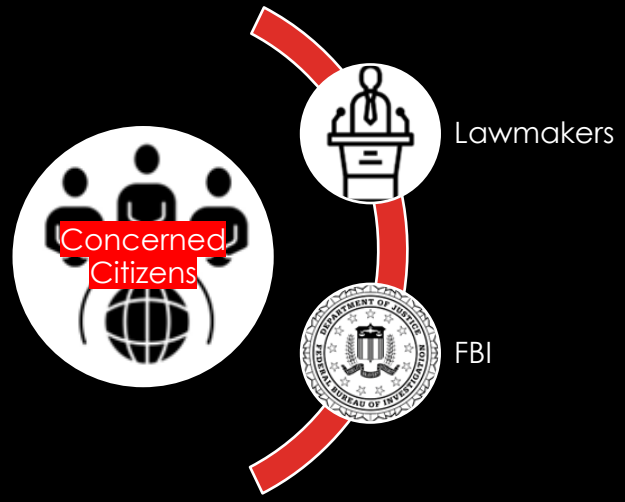
9-What Can You Do?





WHO YOU GONNA CALL?

For major security concerns call: 1-800-CALL-FBI (1-800-225-5324), or **tips.fbi.gov**



If you see something concerning—do something about it!

WRAP UP AND DISCUSSION

Wrap Up Points: You should be able to:

- Identify and define the basic 4 convergent emerging technologies.
- Explain some positive aspects of convergent and emerging technologies.
- Explain some negative aspects of convergent and emerging technologies.
- Explain the mixture (or lack thereof) of the responsibility for managing intersecting technologies.
- Identify several basic concepts or questions you should think about when considering emerging and convergent technologies.

Food For Thought:

- What most concerns you about convergent technologies?
- Is there a particularly technology you are most concerned with? Why?
- Do you see application of these technologies in your day-to-day life/career? What are your impressions of those technologies?

Trivia Homework

- Identify 10 movies with technology that were once considered science fiction but are now reality (or coming into reality)with emerging and convergent technologies.