

On the Impact of Scientists and Engineers on Global Nuclear Security



Rodney K. Wilson

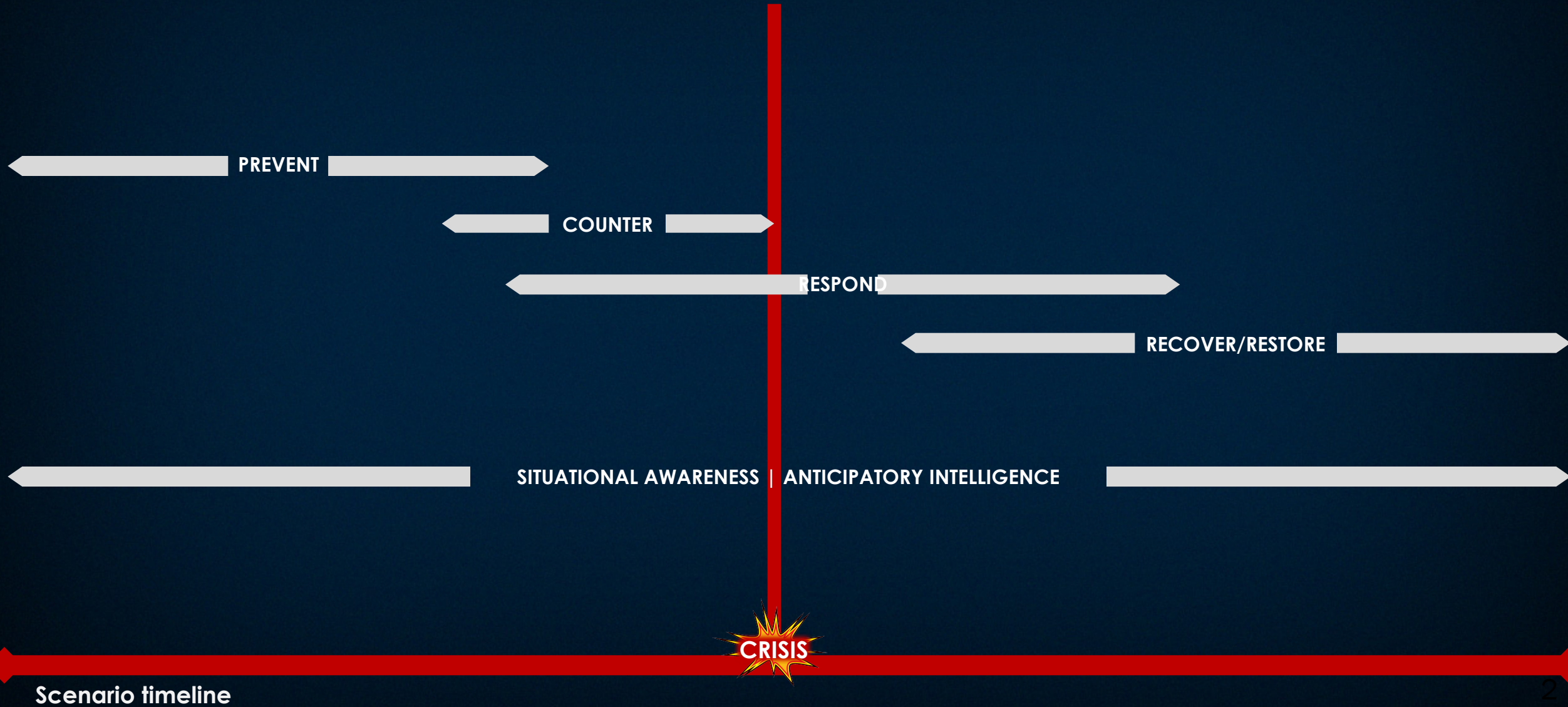
Director, Center for Global
Security and Cooperation

Sandia National Laboratories

rkwilso@sandia.gov

505.844.5269

Our view of Global Nuclear Security looks across time...



...and the degree of cooperation and transparency...

Cooperative / Transparent

Non-cooperative / Opaque

CRISIS

Scenario timeline

...to create a space for exploring scenarios and solutions.

Cooperative / Transparent

PREVENT

COUNTER

RESPOND

RECOVER/RESTORE

SITUATIONAL AWARENESS | ANTICIPATORY INTELLIGENCE

Non-cooperative / Opaque

CRISIS

Scenario timeline

ENDURING PARTNERSHIPS
POLICY ENGAGEMENT
SYSTEM SOLUTIONS

Within that space,
our approach is
focused on having
impact, utilizing
technical expertise
at Sandia...



ENGINEERED SYSTEMS SOLUTIONS
SYSTEMS MODELING, ANALYSIS, and EVALUATION
RESEARCH and DEVELOPMENT

... resulting in a range of systems and solutions.

Studies...

Consequence

Likelihood

■ Rad scenario
▲ Nuclear scenario

Alt. technology (e.g. X-Ray)

Enhanced Security

(Adversary Intent & Capability, Material Availability & Vulnerability, Device Difficulty)

...Technologies...

...Capacity Building

INTERNATIONAL TRAINING COURSE
on the Physical Protection of Nuclear Facilities and Materials
SHARE.SANDIA.GOV/ITC

But the future remains dynamic and our planning focuses on a number of factors ...

Domestic

- Changes in Administration and Congressional Priorities
- Degree of private sector participation / buy-in"
- Ability to integrate across USG agencies with similar missions

Global

- Strength / weakness of international Institutions
- Global and regional stability
- Cooperation between states
- Proliferation, terrorism, accidents

Technical

- Emerging threat capabilities (e.g., cyber, UAS)
- Tech surprise (e.g., advanced manufacturing)
- Open source information
- Long-term sustainability

... So we must remain flexible and strengthen our capabilities and partnerships to be able to respond ...

... which requires science and technology to ...

- improve the Physical Security of our materials, facilities, transportation systems, and border crossings
- integrate Cyber Security into our security system architectures
- improve safeguards to Detect Diversion
- improve Data Analytics to improve situational awareness and anticipate future events
- support Cooperative Threat/Risk Reduction Activities and Confidence Building Measures
- improve our National Technical Means

Thank you