

# Global Threat Reduction and Preparedness: Strategic Tools for Contemporary Warfare

Carleton J. Phillips  
Texas Tech University



# Texas Tech Projects

---

- Zoonotic disease surveillance in Central Asia and elsewhere. (UK/MOD, ISTC)
- Redirection of weapons scientists and dismantlement of nuclear weapons facilities in Iraq. (DoS/ISN)
- Strategic planning for disablement and dismantlement of DPRK Yongbyon Nuclear Facility (US NAS & NSC)

# Threat Reduction & Preparedness

---

Threat reduction is the action(s) intended to make nonproliferation a reality rather than just a political concept. Ultimately, a way to 'shape' future battlefields.

Preparedness is the activity that directly supports force protection and 'enables' the war fighter to function with adequate situational awareness.

# United States National Security Priorities

- Undetected or intentionally hidden outbreaks of unknown disease
- State sponsored weaponization of biological agents
- Transnational terrorism with infectious agents, radiological dispersion devices, or nuclear weapons
- Force protection: forecast military operations
- Forensics capability (attribution)
- Forecasting (element of preparedness, situational awareness)
- Mechanisms for elimination of nuclear facilities (disablement/dismantlement)

# National Security: What do we need?

---

- Basic scientific/technical fieldwork is essential (active rather than passive defense).
- Multinational coalitions (including science diplomacy partnerships with traditional 'enemies')
- Within the USG, diplomacy (DoS) must be integrated with acquisition of technical capacity to support DoD priorities.



Science Diplomacy  
Amman, Jordan, February 2006

Texas Tech, Department of State, US CRDF, Royal Scientific Society, MoST,  
MoEn

# Nuclear Facilities

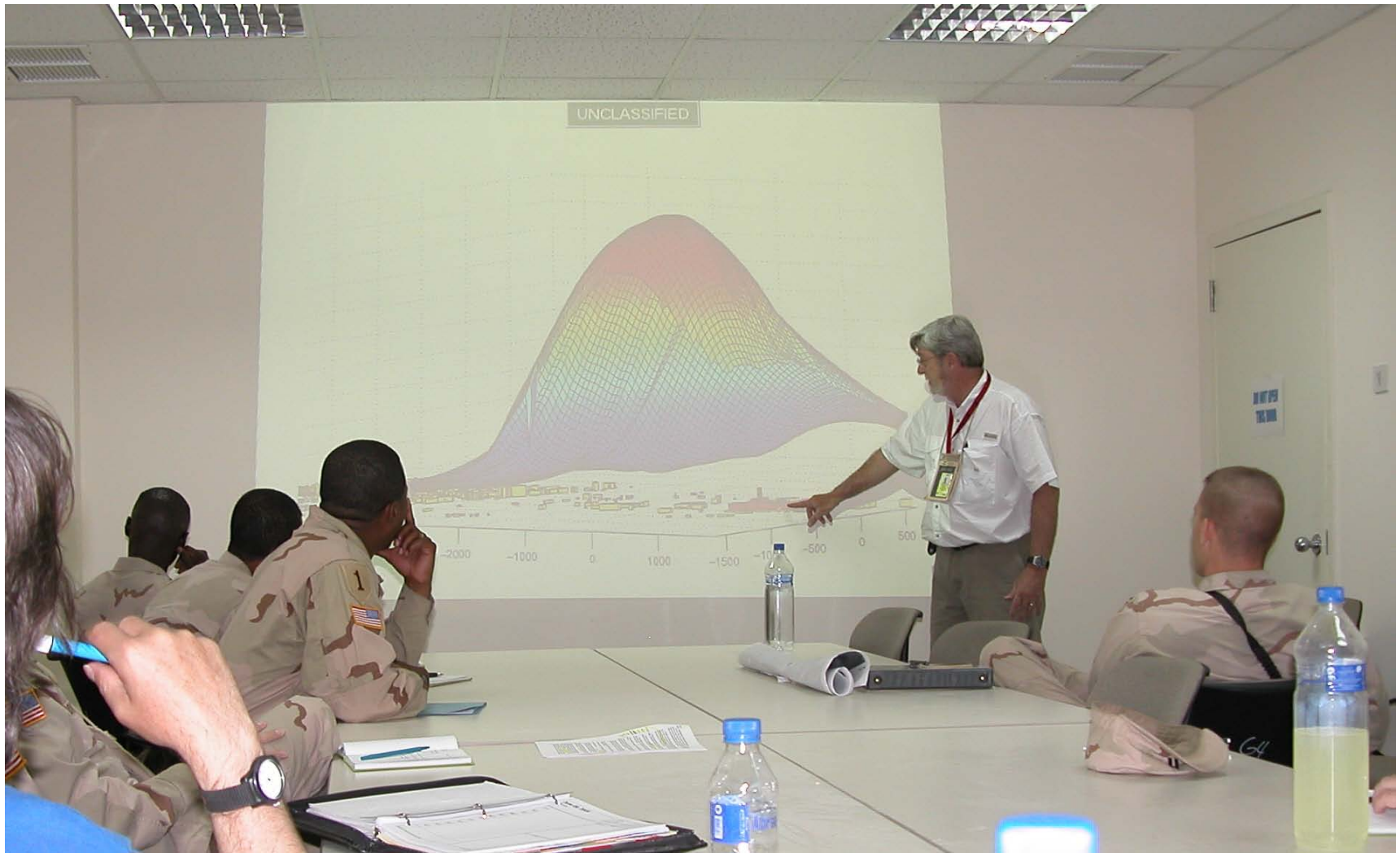
---

- Disable and dismantle facilities in Iraq
- Preparedness and strategic planning for other opportunities, such as DPRK
- Lessons from Iraq
  - TTU project conducted under combat conditions—thus valuable to long-term preparedness
  - War fighter & chain of command decision making
  - Situational awareness
  - Time-frame for dismantlement with international supervision and application of standards
  - Multinational cooperation (Ukraine and Russia)
  - Application to DPRK, Iran



Civilian-Military team work is critical: Iraq 2005-present.  
TTU-CENTCOM-CBRNe-Department of State (ISN)-EMB (Pol-Mil)





c.j.phillips photo

Training seminar at Camp Victory, Iraq: Prof Chesser explaining radiation dispersion model based on research in the city of Pripjat, near Chernobyl, Ukraine.



TTU Iraq nuclear weapons facility project: 2005-present.  
Typical logistical support.





Russian IRT-5000 Reactor at Tuwaitha



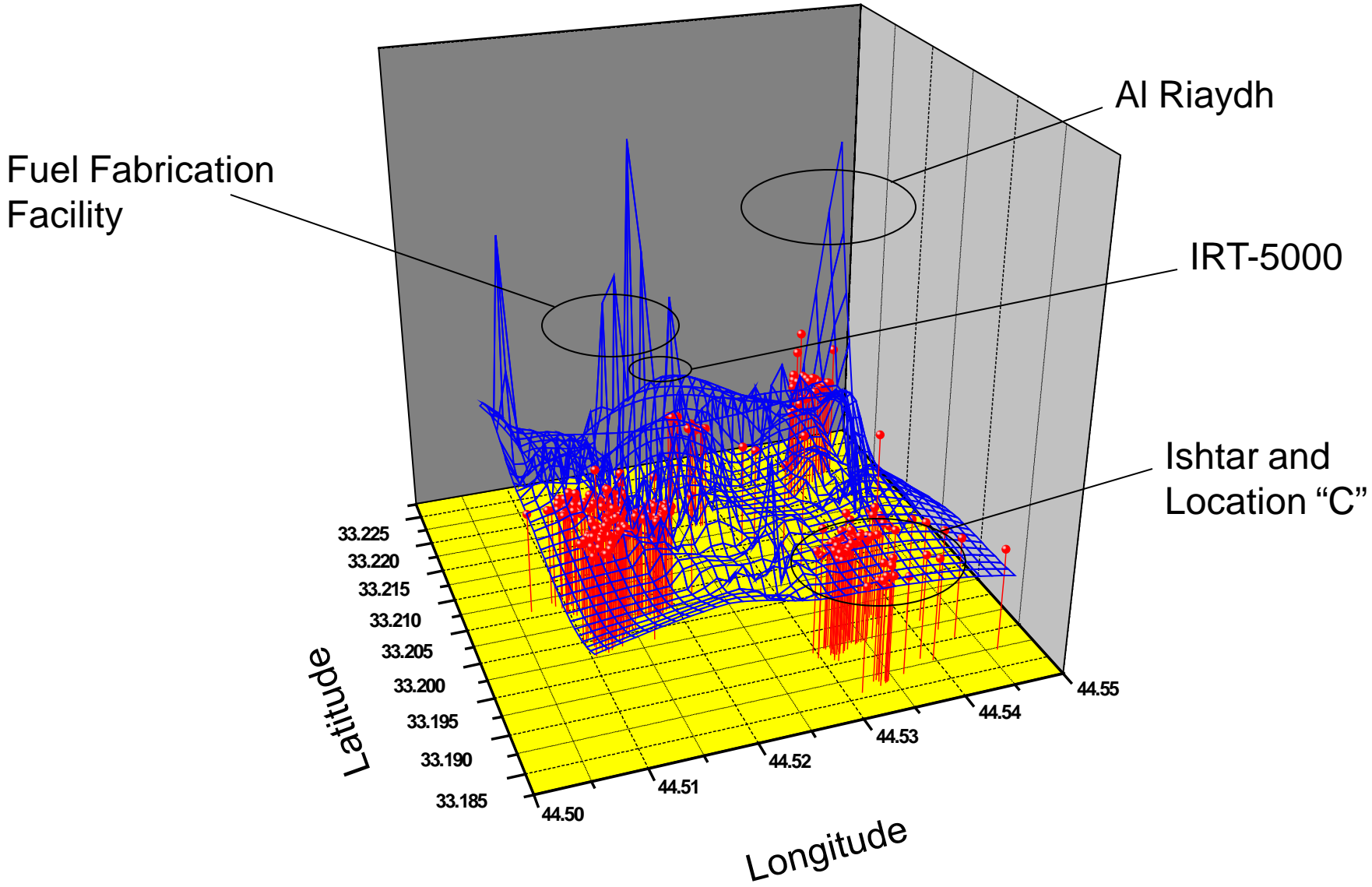
Atop the cooling tower (IRT 5000)

C.J. Phillips photos



Soil sampling at Al-Tuwaitha: more than 390 samples collected by the team.

# Graphical Representation of Uranium contamination at Al-Tuwaitha



# Bio-warfare and Bio-security

---

- Precedent set by Soviet weaponization of zoonotic agents and legitimate research.
- Force protection, detection, forecast, forensics, chain of command are issues with national security and DoD priorities.
- Preparedness on geospatial distributions, molecular genetics of agents, vectors, and reservoir species is essential.
- Multinational coalitions and technical collaborations are essential pathways to stabilization, creating stakeholders, & preparedness.

# Iraq: ODS 1991, OIF 2003

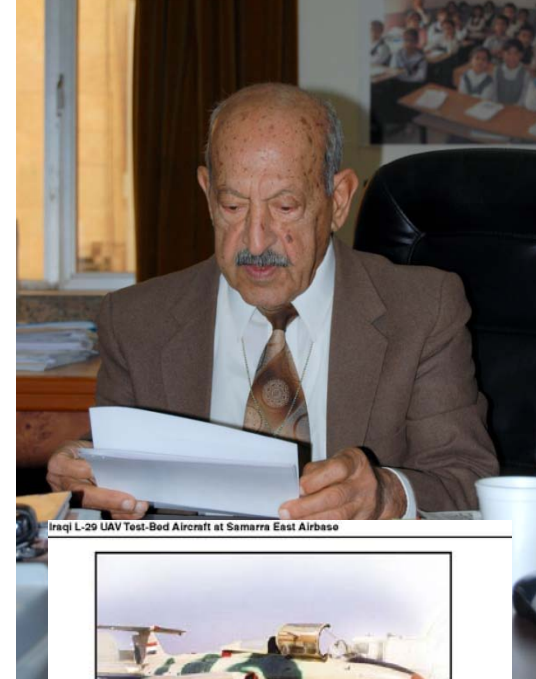


ODS: 1991 concern about Iraqi use of CBN

Gulf War Syndrome: natural or intentional or accidental? Solved in 2009 (18 years later)

OIF, 2003, would (could) Iraqis use BW—such as weaponized anthrax? Anticipation & rush to vaccine

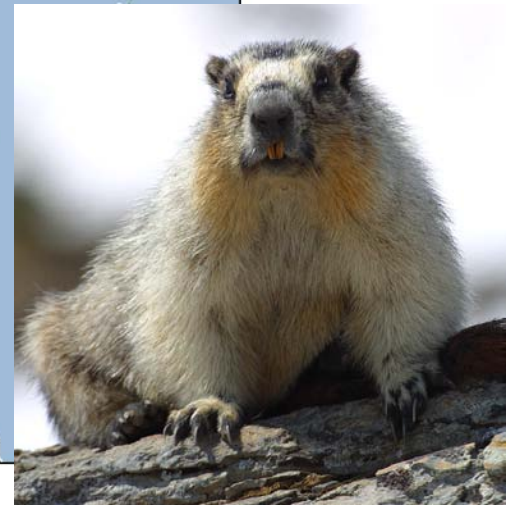
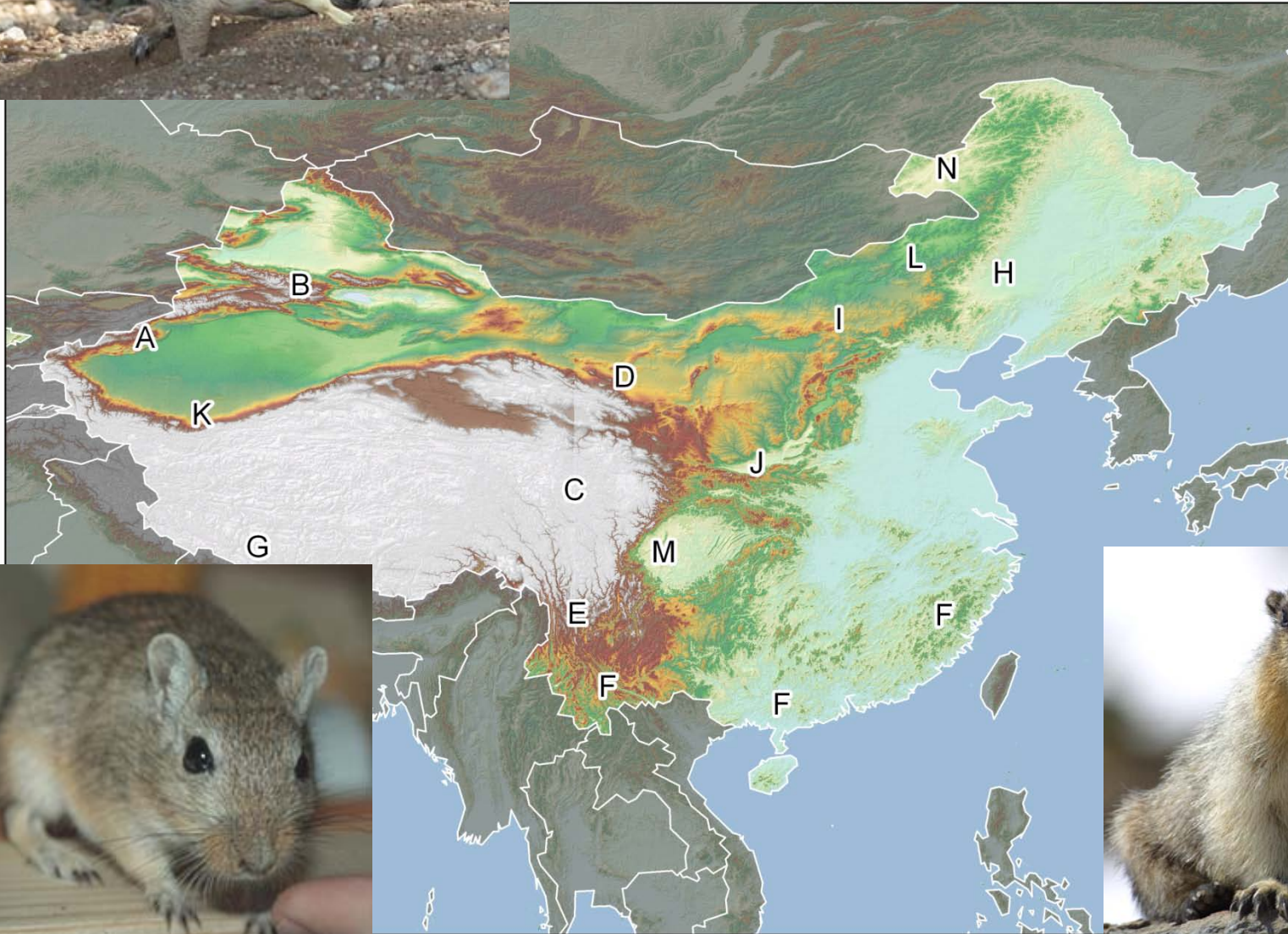
What about viruses? What about ‘engineered’ pathogens? Concern about molecular genetic capabilities and smallpox—all Soviet influenced



Iraqi L-29 UAV Test-Bed Aircraft at Samarra East Airbase



# Preparedness: Chinese Army Medical Research on Plague Foci, Vectors, Mammal Reservoir Species, and Rapid Diagnostic Systems





# Multinational Partnership in Central Asia: Kyrgyz Republic

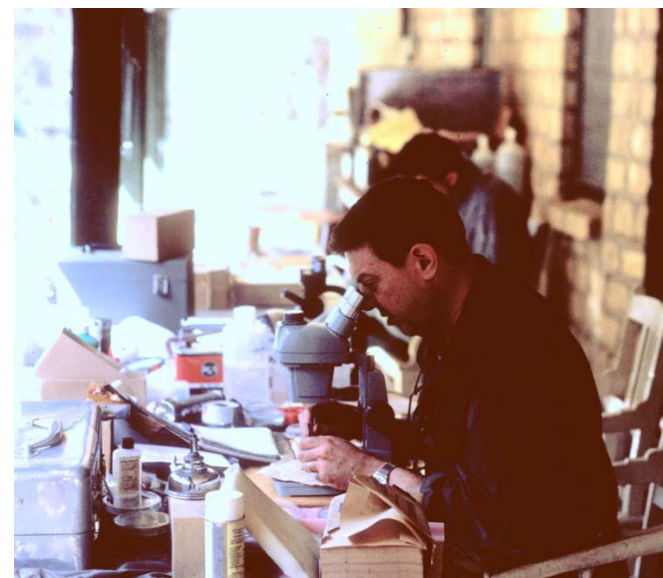
Teamwork in former Soviet BW lab



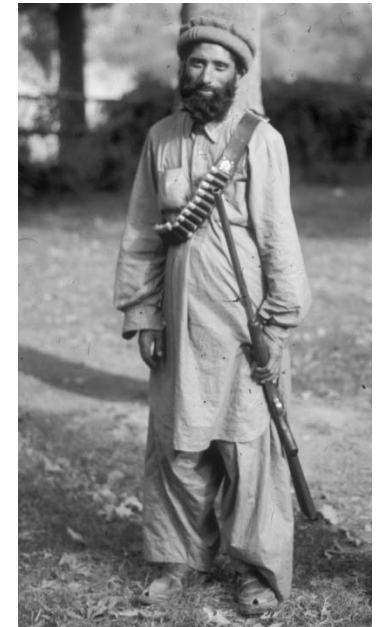
# SUMMARY

---

- TTU is involved in 3 national security-related projects relevant to contemporary warfare.
- Active preparedness is essential, especially in nuclear and biological arenas.
- Civilian scientific teams, science diplomacy, and coordination with military (CNRNe), DTRA, and DIA are required.
- Multinational coalitions in Central Asia and the Middle East could shape the potential battlefield.



Col. Robert Traub



BW countermeasures fieldwork in NW Pakistan, 1966.