**Research Question**

How can we remotely detect a country-level capability to develop and interest in using weapons of mass destruction (WMD)? What are the similarities and differences in how we detect capability and interest for chemical, biological, radiological, nuclear, and cyber (CBRN+) mass attacks?

**Objectives**

The overarching objective of this project is to develop the underlying scientific knowledge, theories, algorithms and models that contribute to remote detection and capability assessment of terrorists, insurgents, and hostile nations developing weapons of mass destruction (WMD).

The goals of the project are as follows:

1. Remotely identify changing expertise related to WMDs by region.
2. Remotely identify key individuals in a region that may be able to confirm buildup of WMD capability.
3. Remotely identify key individuals in terms of WMD expertise.
4. Remotely identify key individuals or groups in promoting the development of WMD capability.
5. Remotely identify changes in the expertise and promotional networks over time.
6. Remotely identify changes in pressure on a region to develop WMD capability due to changing capability in nearby regions or changes in pressure on an individual to develop WMD expertise.

Scientifically, we have two objectives. The first objective is to advance the state of network analysis through developing a probabilistic geo-temporal meta-network modeling and assessment capability. The second objective is to advance the science of digital signal processing by a investigating the extension of digital signal processing techniques to relational data and developing relevant geo-temporal detection algorithms.