



**U.S. Department of Energy**

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## **Correlates of Sensitive Technologies**

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**Program:** Blue Sky

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### **ABSTRACT**

This project builds on prior work of the PI and collaborators, within three distinct communities (academic nuclear engineering, academic political science, and the DOE complex) to build and apply tools to investigate the unit and system level variables that correlate with the decision and ability of states to acquire sensitive nuclear technologies (e.g., enrichment and reprocessing, ENR). Specific tasks are:

#### **Task 1 - *Leveraging Earlier Work toward Correlates of Sensitive Technologies***

In this task the three PIs will independently execute subtasks to apply the procedures and data that are most readily available to them individually, from prior work, toward questions related to determination of the correlates of sensitive technologies. In each subtask a second PI will collaborate, in order both to ensure a wide applicability of results and to facilitate development of a common mutual foundation of understanding between the three PIs.

#### **Task 2 - *Correlates of Sensitive Technologies: Data***

The data bases previously employed by the different investigators will be amalgamated into a single database that is augmented by further addition of metrics related to sensitive technologies.

#### **Task 3 - *Correlates of Sensitive Technologies: Model Construction***

This task will comprise development of a quantitative empirical model of state acquisition of ENR technology (Subtask 3.a) and an expert judgment model (Subtask 3.b) of the same phenomenon.

#### **Task 4 - *Correlates of Sensitive Technologies: Model Application***

In this task the (empirical and expert-based) models developed in Task 3 will be employed to address one or more significant policy-relevant questions. Examples of candidate questions include:

- Which states are most likely to pursue or acquire ENR technologies?
- To what extent, if any, does the development or pursuit of a commercial nuclear power program increase the probability that a state will pursue or acquire ENR or other sensitive technologies?