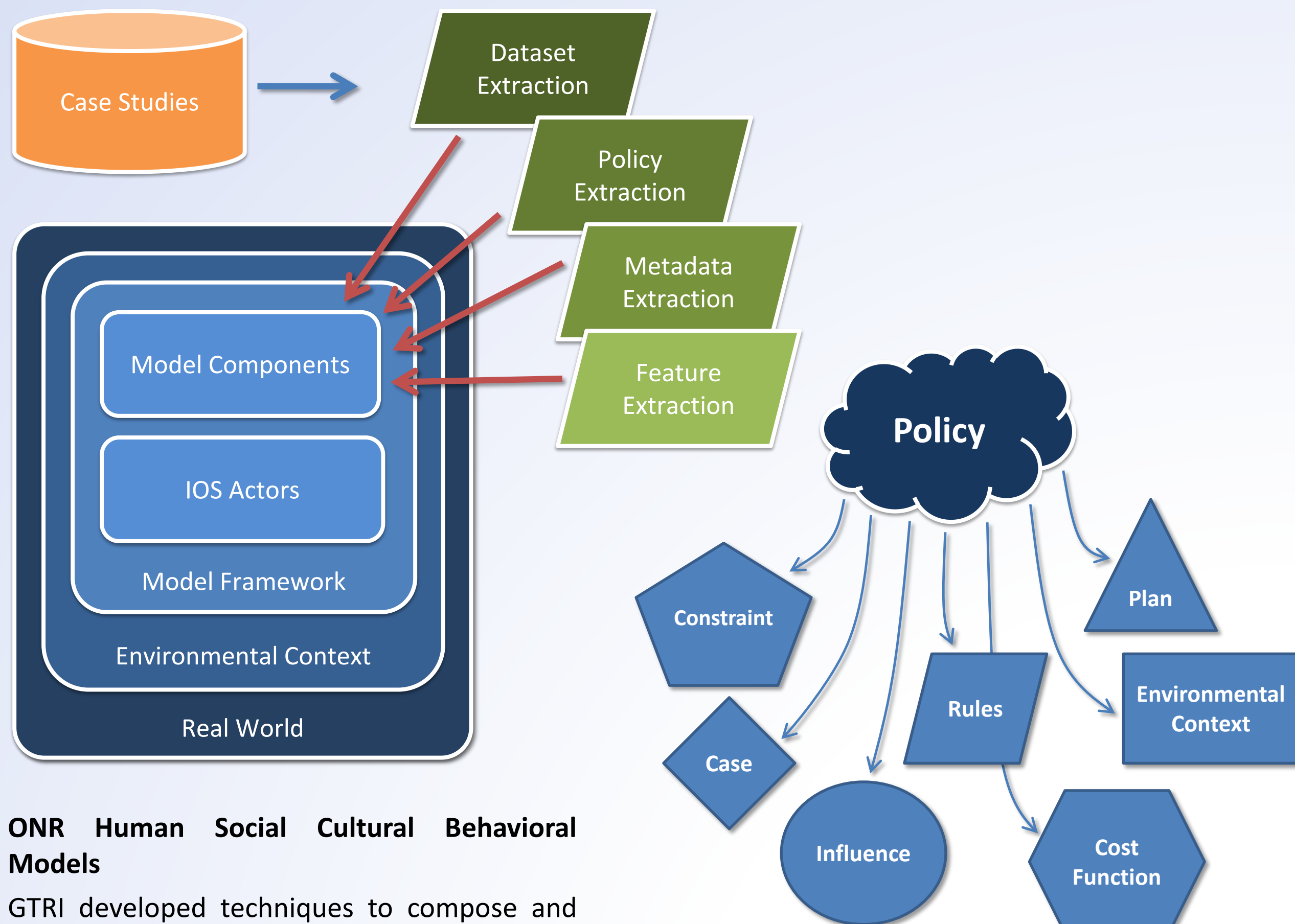


Lead Investigator
Elizabeth T. Whitaker, Ph.D.
With
Christopher R. Hale, Ph.D.

Research Areas of Interest

Qualifications and Capabilities

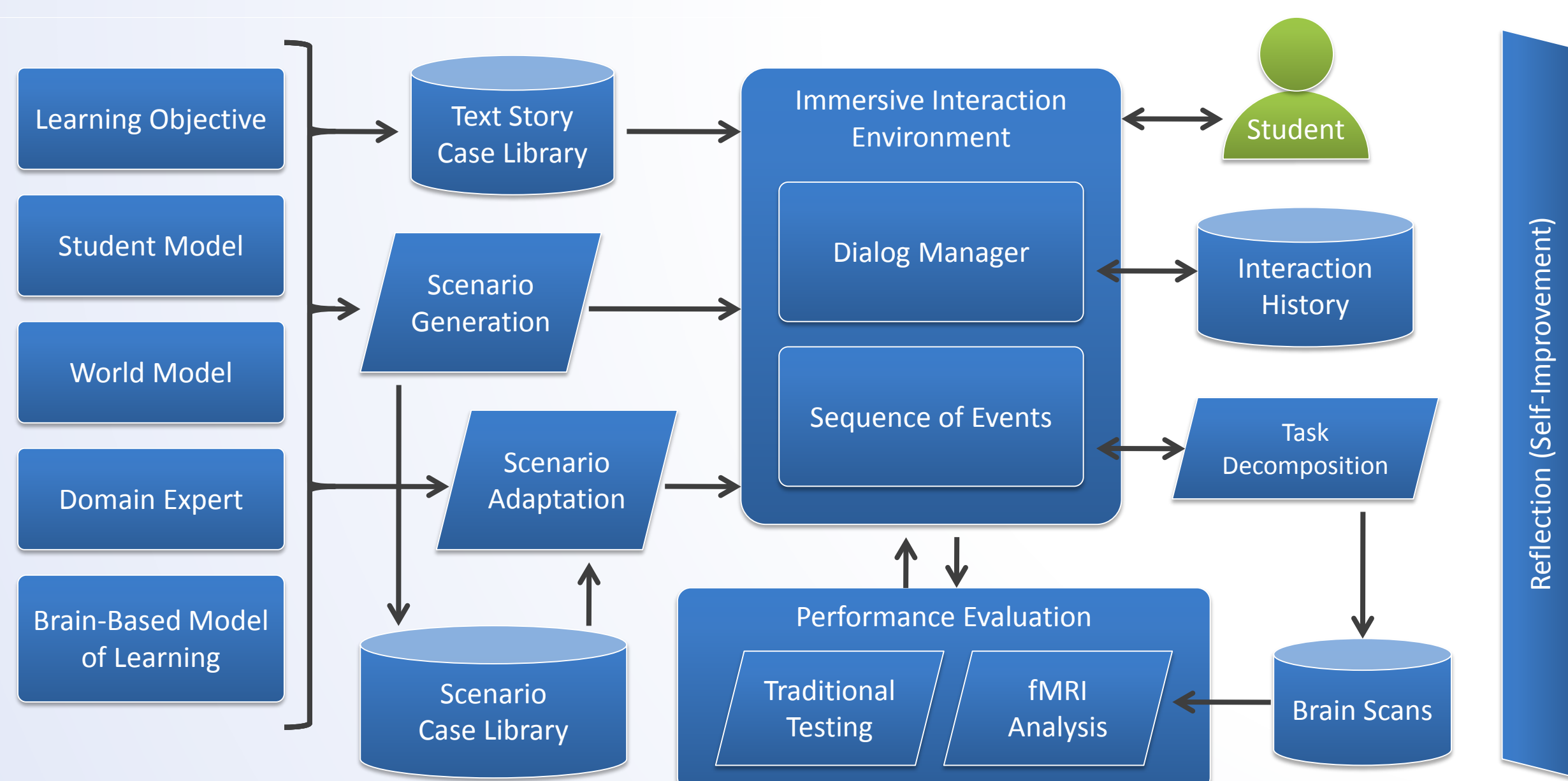


ONR Human Social Cultural Behavioral Models

GTRI developed techniques to compose and dock models of human behavior to enable more effective modeling of terrorist recruitment. These approaches included individual, organizational and societal levels of modeling.

Layers in Human Social Cultural and Behavioral Modeling

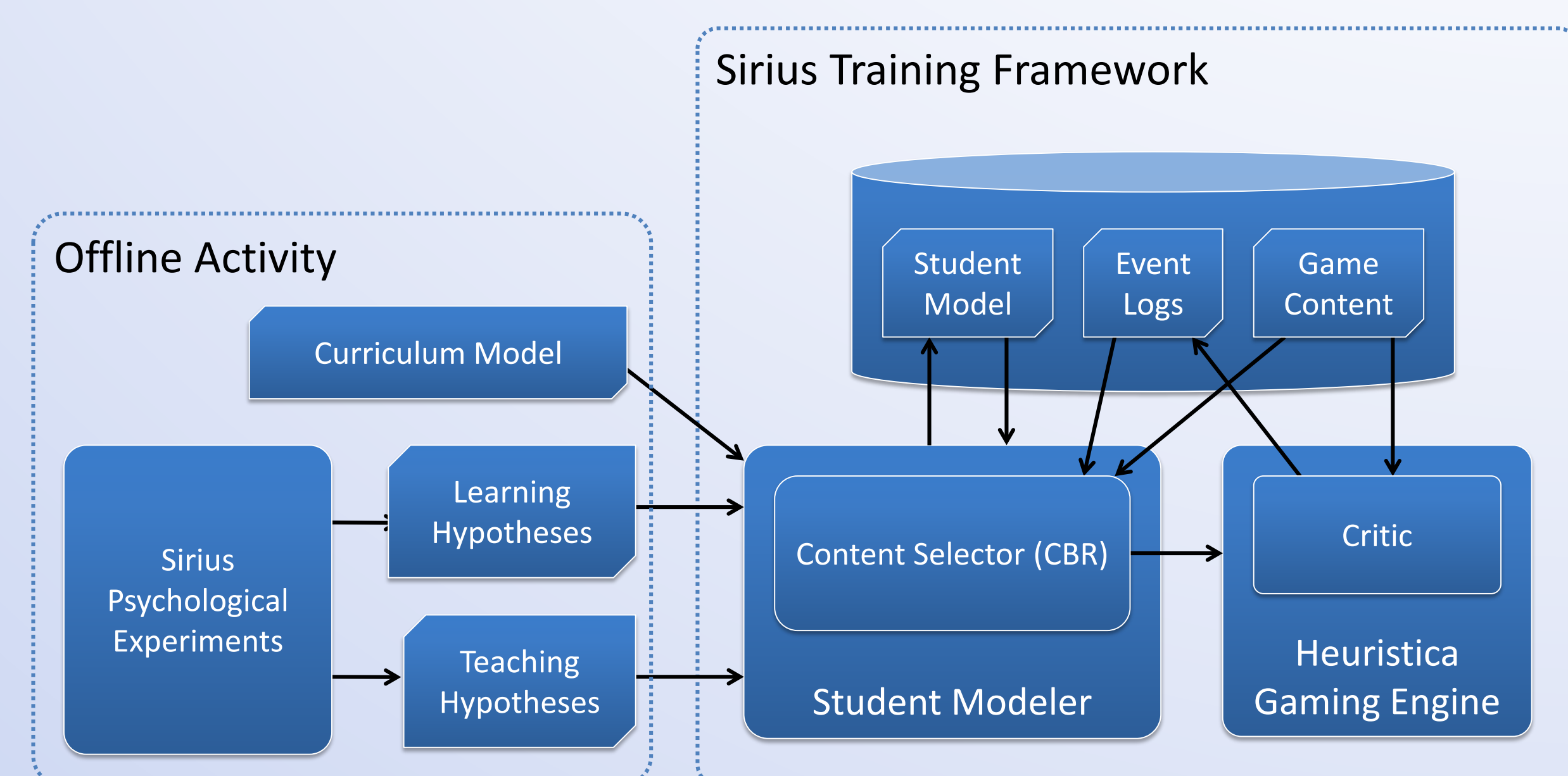
For the ONR HSCB program GTRI combined several modeling approaches and included effects of policies on behavior.



Brain-Based Cognitive Architecture for Training (BBCAT)

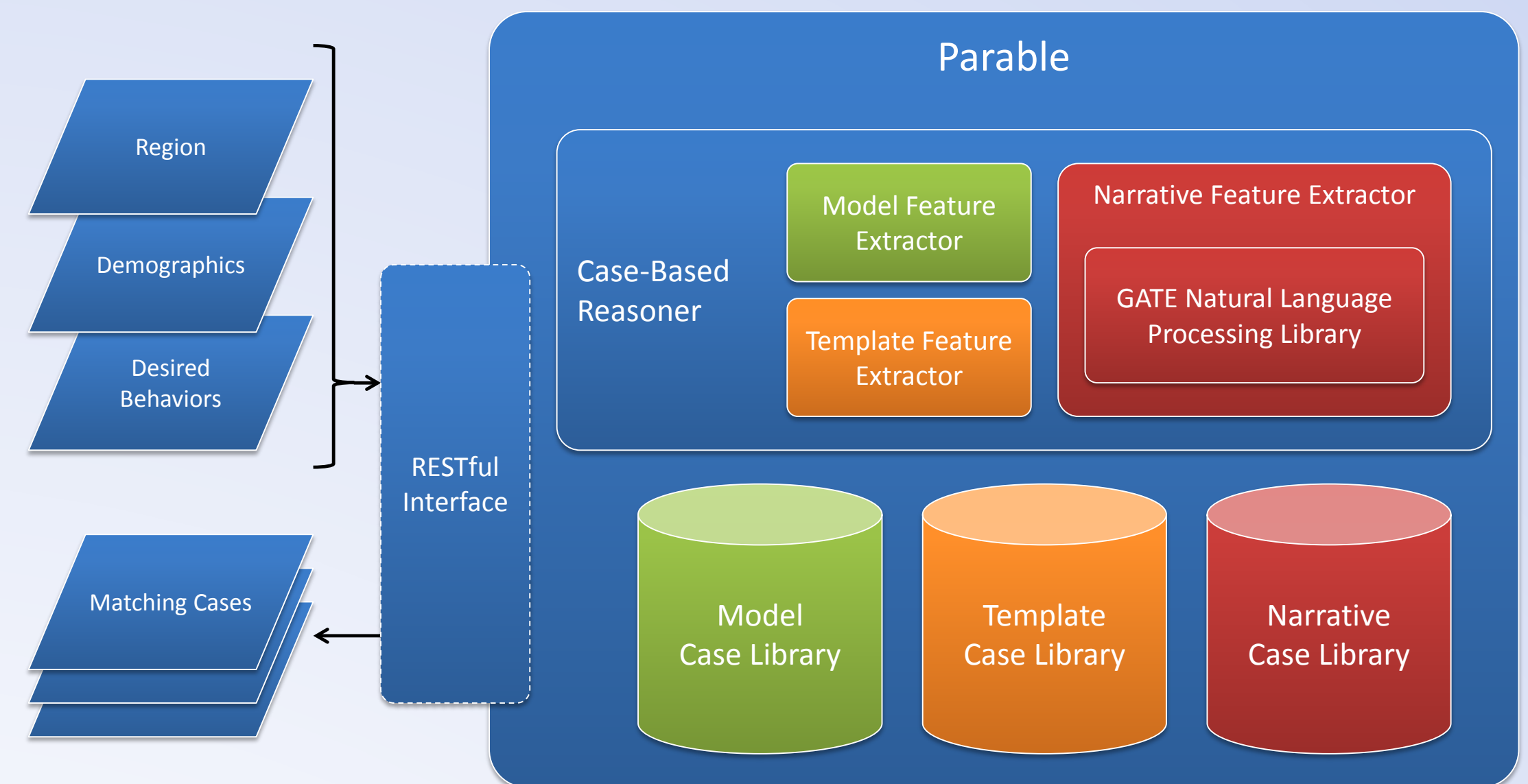
BBCAT is an architecture based on neuro-scientific models of student reasoning, learning, and emotion. It integrates lessons from brain-based models of human learning and reasoning with student modeling, teaching and learning theories, and scenario generation. The design of BBCAT can:

- Assess an individual's learning and emotion
- Dynamically adapt training activities to increase training effectiveness



IARPA SIRIUS

GTRI collaborated with Applied Research Associates on the Heuristica serious game, which was a research project aimed at training users to recognize and avoid their cognitive biases when performing analytical decision making tasks. GTRI supplied a student model and content selector capabilities to personalize and adapt gameplay and maximize the learning potential of each student.

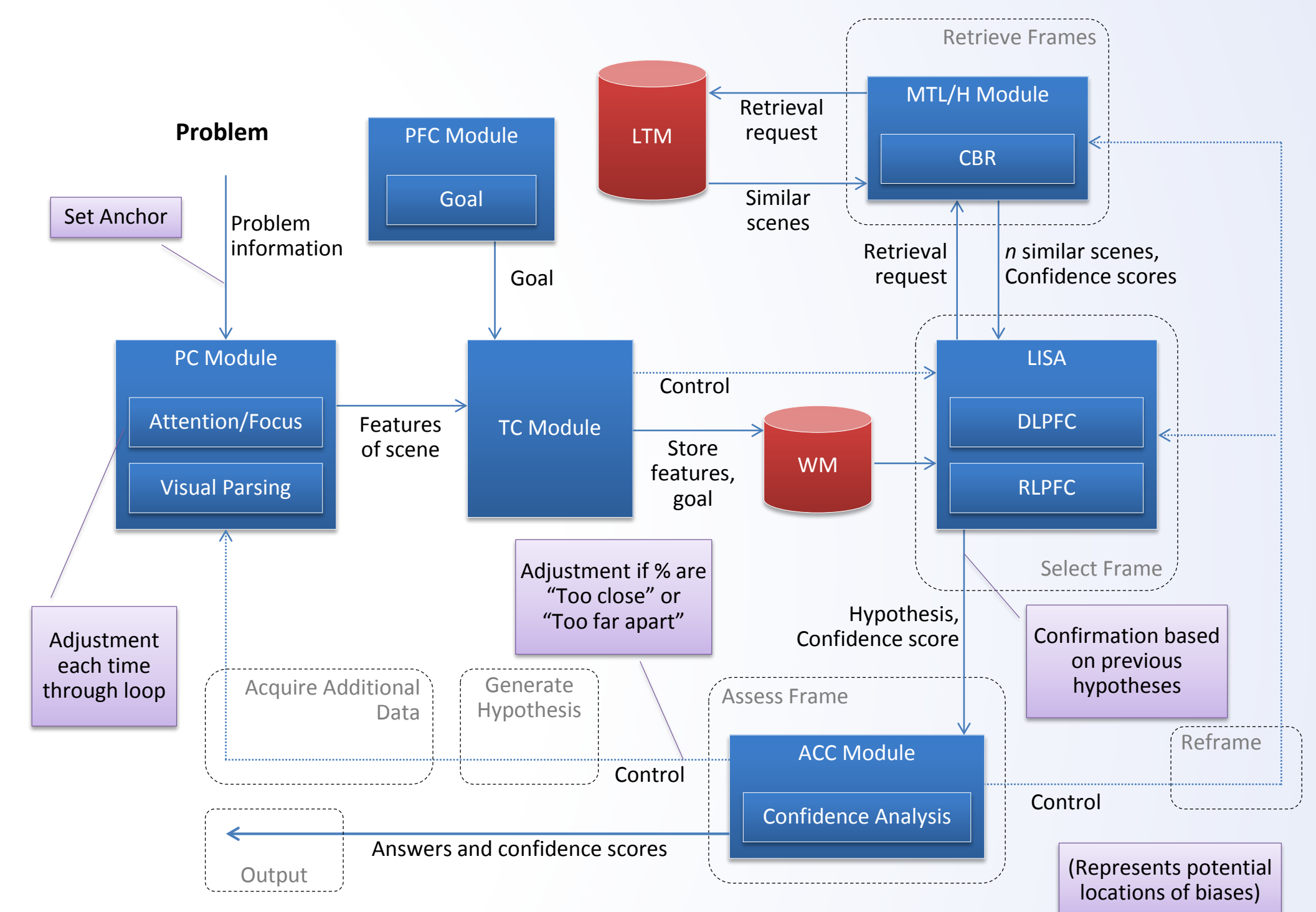


DARPA Narrative Networks

Our team is using fMRI analysis to explore human responses to narratives with particular characteristics. We designed a narrative composition prototype using case-based reasoning, learning and planning augmented by heuristics to provide domain knowledge, constraints and adaptation capabilities.

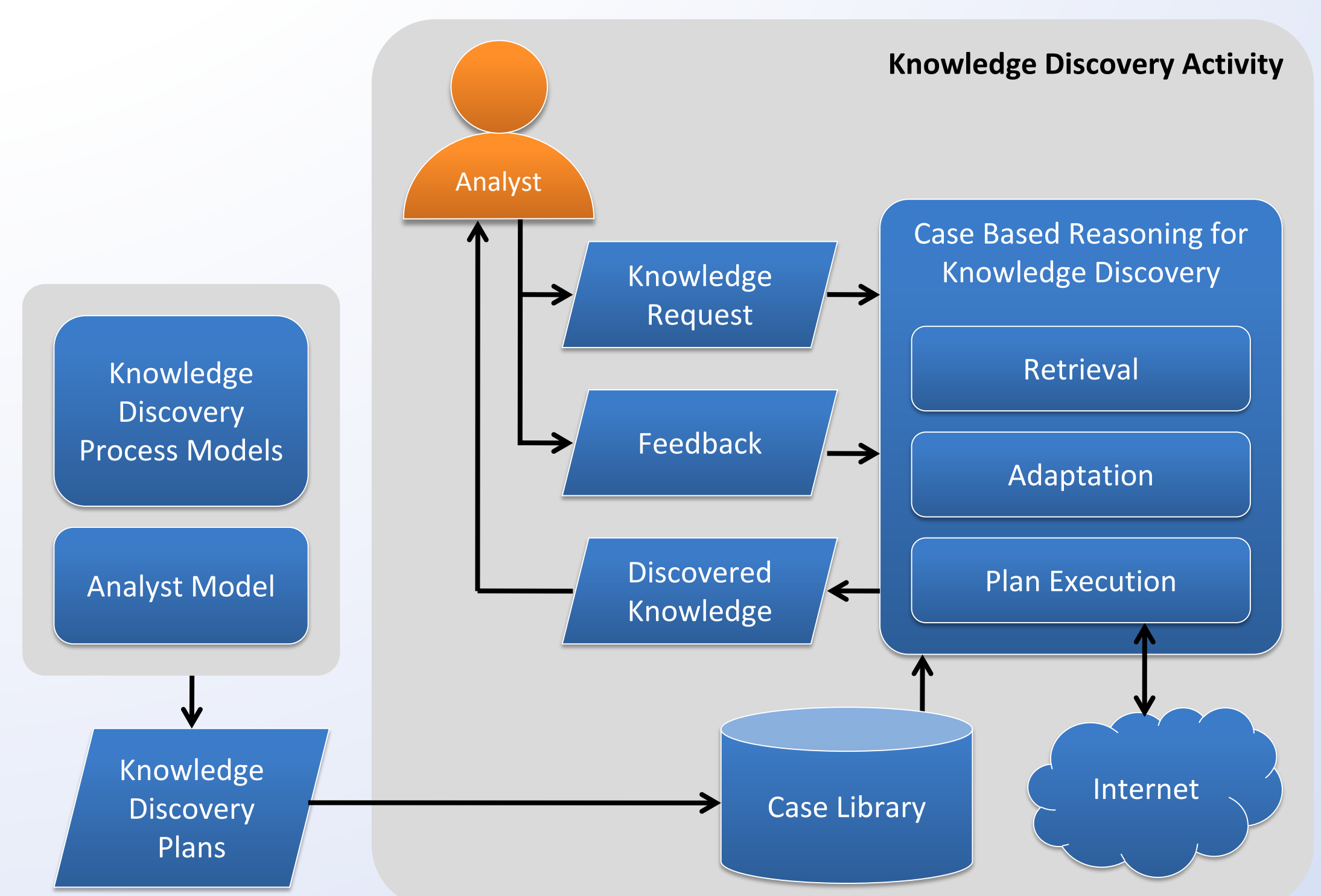
Sensor Suite: Physiological Monitoring System

GTRI has several sensors groups. One of them working with the Army to develop a suite of sensors that can be used to monitor the state of a soldier: heart rate, acceleration, galvanic skin response and skin temperature. GTRI has access to a large variety of sensors that can be explored for the MOSAIC project. These will be combined with GTRI's cognitive reasoning approaches and cognitive psychology task analysis for MOSAIC.



IARPA ICARUS

The objective of the ICARUS Program is to construct brain-based computational models of the process known as sensemaking. Sensemaking, a core human cognitive ability, underlies intelligence analysts' ability to recognize and explain relationships among sparse and ambiguous data. The GTRI team was part of a larger project team and contributed component models and neuroscience domain knowledge from the School of Psychology



Case-Based Reasoning for Knowledge Discovery (CBR for KD) Capabilities Cases

- Does the organization possess the technical capabilities?
- Does the organization have access to the raw materials?
- What manufacturing resources are available?
- Who are the experts in this area?
- Who have the experts collaborated with and what are their capabilities?
- What publications and education exist in this area?

The GTRI team will provide modeling and reasoning approaches, a personal sensor suite, task analysis approaches. We are looking for intelligence analyst evaluation and requirements.

Dr. Elizabeth T. Whitaker, Ph.D.
Principal Research Engineer
Georgia Tech Research Institute
elizabeth.whitaker@gtri.gatech.edu
(404) 407-6656
<http://www.gtri.org>