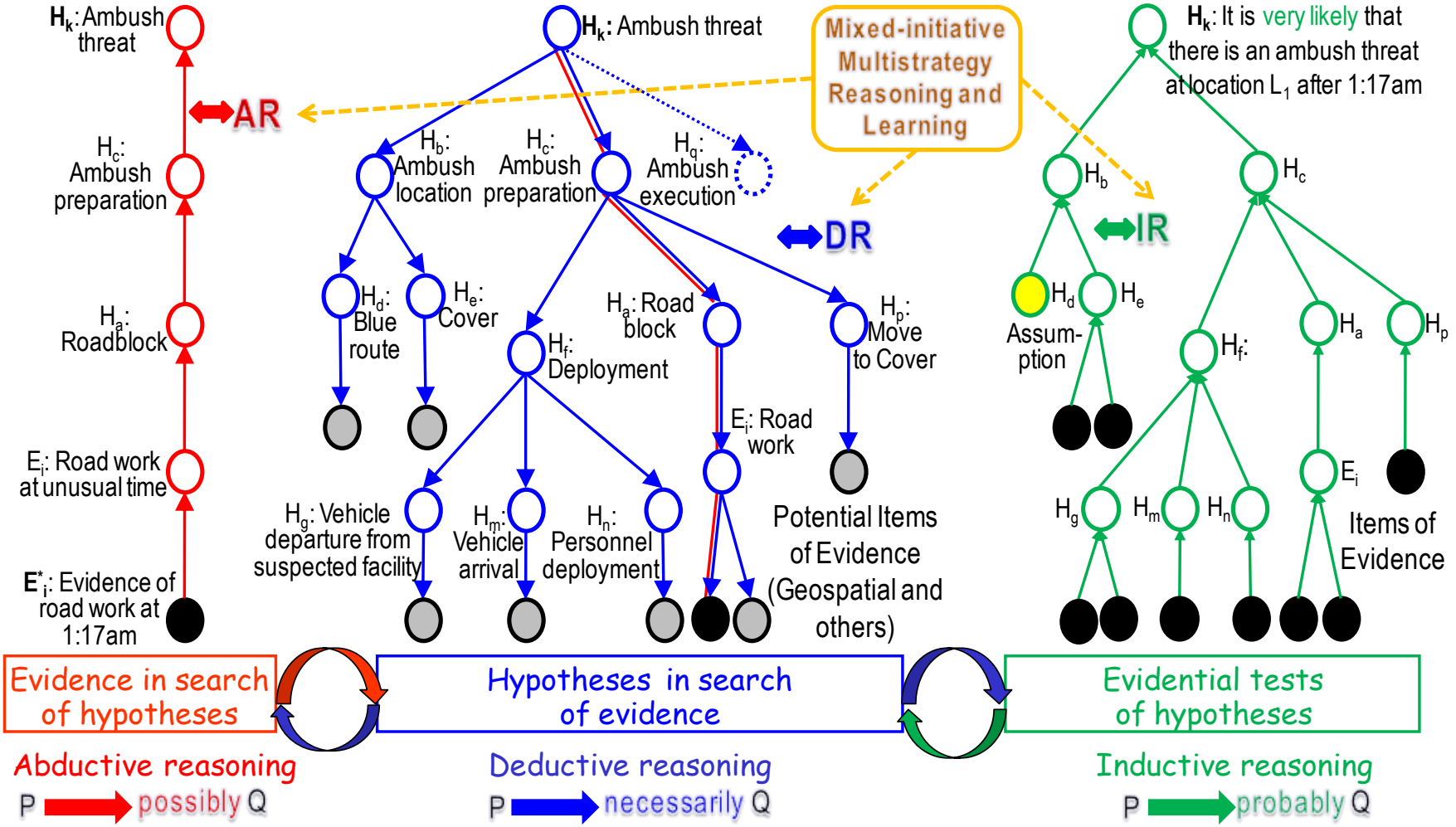
Team

- **Organization:** *Learning Agents Center (LAC)*, School of IT and Eng, George Mason Univ.
- **Lead Investigator:** *Dr. George Tecuci*, Computer Science Professor and LAC Director
- **Current Team Members:** *Dr. David Schum* (Prof. of Systems Engineering, Operations Research, Law, and Evidence Science) and *Dr. Mihai Boicu*, Assistant Professor of Applied Information Technology

Research Area

Computational approach to sensemaking and learning, viewed as ceaseless discovery in a non-stationary world through evidence in search of hypotheses, hypotheses in search of evidence, and evidential tests of hypotheses, all going on at the same time:



(see http://lac.gmu.edu/publications/2009/Tecuci-Overcoming_IA_Complexity.pdf)

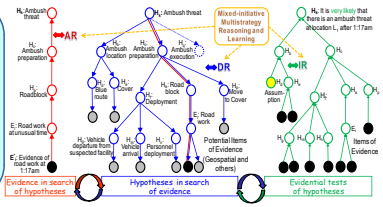
Capabilities

LAC researches the development of cognitive assistants for intelligence analysts that complement human sensemaking capabilities. They can: (1) learn complex expertise directly from the analysts, (2) support analysts in hypothesis generation and testing, collaboration and sharing of intelligence, and (3) can teach its analytic expertise to new analysts.

These cognitive assistants are based on:
the Science of Evidence,
Mixed-initiative reasoning,
Multi-strategy learning,
Collaborative analysis,
Assumption-based reasoning, etc.

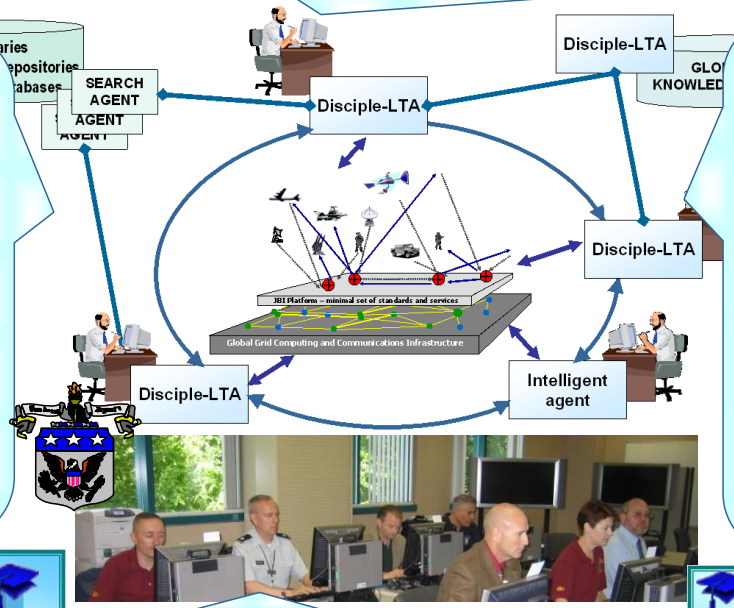
Analytic Assistance

Empowers the analysts through mixed-initiative reasoning for hypotheses generation and testing, collaboration with other analysts and experts, and sharing of information.



Learning

Rapid acquisition and maintenance of intelligence analysis expertise which currently takes years to establish, is lost when experts separate from service, and is costly to replace.



Tutoring

Helps new intelligence analysts learn the reasoning processes involved in making intelligence judgments and solving intelligence analysis problems.

Science of Evidence

(see http://lac.gmu.edu/publications/2008/Disciple-LTA08.pdf)

Teaming

Capabilities we are seeking:

- Cognitive Science approaches to Sensemaking,
- Neuroscience approaches to Sensemaking,

that complement and can be integrated with our computational approach to modeling sensemaking which is primarily based on Computer Science (intelligent agents, machine learning) and the emerging Science of Evidence (Wigmorean probabilistic inference networks for evidence-based reasoning).

Contact Information

- George Tecuci
- Professor of Computer Science and Director of the Learning Agents Center
- George Mason University
- tecuci@gmu.edu
- 703 993 1722
- http://lac.gmu.edu/
- http://lac.gmu.edu/members/tecuci.htm