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IARPA LAUNCHES NEW RESEARCH PROGRAM TO INCREASE UNDERSTANDING OF HOW THE HUMAN BRAIN INTERPRETS CONCEPTS

WASHINGTON – The Intelligence Advanced Research Projects Activity (IARPA), within the Office of the Director of National Intelligence (ODNI), announced today that it has embarked on a multi-year research effort to develop scientific understanding of how the human brain represents conceptual knowledge. Insights obtained from the Knowledge Representation in Neural Systems (KRNS) program may ultimately improve the ability of intelligence community analysts to draw accurate inferences from intelligence data.

"The unique focus of the KRNS program is on understanding how multiple types of conceptual knowledge are represented in our brains, because the ability of our intelligence analysts to tap into that knowledge is so essential for their work," said Brad Minnery, KRNS program manager at IARPA. "Understanding how the brain represents knowledge is an important step toward building new analysis tools that acquire, organize, and wield knowledge with unprecedented proficiency."

Decades of neuroscience research have shed light on how the brain represents various types of sensory and motor information. However, far less is known about the neural basis of conceptual knowledge. Conceptual knowledge refers to knowledge about the properties of an entity (e.g., an apple is edible) as well as its relationships to other entities (e.g., an apple is associated with orchards, grocery stores, pie). When making sense of intelligence-related data, analysts rely on their rich repertoires of conceptual knowledge to resolve ambiguities, make inferences, and draw conclusions. By increasing our understanding of how conceptual knowledge is structured and organized within the brain, KRNS research may lead not only to the development of new tools but also to novel techniques for training analysts and linguists.

"The long-term goal of KRNS research is to assist analysts in making sense of massive volumes of disparate data," remarked Minnery. "Any analysis tool built using insights from KRNS research will enhance the productivity of analysts in performing complex and difficult sensemaking activities."

Through a competitive Broad Agency Announcement (BAA) process, IARPA has awarded research contracts in support of KRNS to teams led by Carnegie Mellon University, Siemens Corporation, HRL Laboratories, and Teledyne Scientific and Imaging.

IARPA invests in high-risk, high-payoff research programs that have the potential to provide our nation with an overwhelming intelligence advantage over our future adversaries. Additional information on IARPA and their research may be found on their web site: www.iarpa.gov

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