Strategy Conference tackles emerging technologies

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Dr. John A. Parmentola, Director for Research and Laboratory Management, U.S. Army, the keynote speaker for the Army War College 2009 Strategy Conference speaks in Bliss Hall April 15. The conference explored emerging technological developments and their potential implications for US strategic interests. *Photo by Lizzie Poster.*

April 16, 2009 -- Video games, bugs, geckos and nanotechnology were presented as options of the near-future during the first presentation of the all Army War College 2009 Strategy Conference, April 15 and 16 in Bliss Hall.

The conference is exploring emerging technological developments and potential implications for U.S. strategic interests, April 15 and 16. A unique gathering of scientists, academics, historians, ethicists and strategic analysts explored the future for and, potential issues about, biotechnology, nanotechnologies, robotics and artificial intelligence.

The future of physics, genetic technology, molecular biology: this is what world leaders need to know, according to Dr. Richard A. Muller, Univ. of California, Berkeley, who is one of 29 experts to bring 29 perspectives to the potential wonders and perils of technologies.

The stuff of sci-fi imagination is no longer limited to Hollywood movies. Transitioning rapidly from science fiction to science are robots, microbots, swarms of nanobots connected for intercommunication. They help sense the battlefield and hold the promise of achieving omniscience.

Tiny little flea-sized robots are powered by ambient light in the room, like sunlight or light bulbs. They're equipped with sensors so that they can fly where needed, get data, and return – reducing the fog of war.

Before strategists set aside Clausewitz, the annual Army War College Strategy Conference is considering the hope and the hype of emerging technologies – and consider the ethical deliberation, the choices ahead for investing money and effort, and the range of options that technology appears to make possible.

Harnessing the 'technology' of nature

The possibilities of harnessing these abilities have exciting applications for the military according to Dr. **John A. Parmentola**, Director for Research and Laboratory Management, U.S. Army, the keynote speaker for the conference.

"Why emulate biological systems?" he asked. "Because nature develops though evolution optimal solutions to practical problems, understanding these solutions can enable innovation."

Parmentola noted that insects' and animals' abilities could aid Soldiers in the field. Examples include insect flight control, moth sense and control systems and the biomechanics of gecko movements.

Analyzing moth sense, for example, has lead to advancements in explosives detection. Lessons have been applied to the detections systems on the FIDOPackBot, that's being used by Soldiers in the field today to detect explosives.

"Virtual humans" characterizes another technology breakthrough, said Parmentola. Virtual humans have been developed to incorporate dynamics of human thought process, communication and response into training experiences for Soldiers in situations like negotiations.Using a video game-like interface, users interact via microphone with virtual people in challenging situations.

"These situations allow the user to practice recognizing and responding to a variety of negotiation tactics, deal with shifting coalitions and [learn] how to build credibility in a cross-cultural negotiating situation," he said.