NATIONAL ACADEMIES *Sciences Engineering Medicine*

Division on Engineering and Physical Sciences
Army Research Laboratory Technical Assessment Board

Panel on Assessment of Military Information Sciences Meeting
Aberdeen Proving Grounds, Aberdeen, Maryland

September 6-8, 2023
Agenda

DAY 1: Wednesday, September 6, 2023

DATA GATHERING SESSION: OPEN TO THE PUBLIC
Location: CR1039, Bldg. 4600, Aberdeen Proving Ground, MD Tel 301-938-5402 (Dr. Rajneesh Singh)

1400	Dialogue Abstract Meaning Representations for Conversational Artificial Intelligence, **Dr. Claire Bonial**
1430	Linguistic Enhancements to Transformer-Based Architectures for Large Language Models, **Dr. Austin Blodgett**
1500	Strategy Adaptation of an AI Commander's Assistant via Quickest Change Detection with Uncertain Models, **Dr. Zach Hare**
1515	Poster Session

	Bldg. 4600 - Video/Hardware Poster Topics	Briefer
1	**Robust Concept Learning and Lifelong Adaptation Against Adversarial Attacks**	**Dr. Robert St. Amant**
2	**Bio-Inspired Reinforcement Learning Algorithms**	**Dr. Derya Cansever**
3	**A Framework for Universal Generalization via Memory Based Computation**	**Dr. MaryAnne Fields**
4	**Emergence of Information Structure**	**Dr. Robert Martin**
5	**Theory of the Mind: Preliminary Investigations and Vision**	**Mr. Prabhat Kumar**
6	**Meta Reasoning**	**Mr. John Richardson**
7	**Bi-directional Natural Language Processing**	**Dr. Felix Gervits**
8	**Neuro-Symbolic Programming**	**Dr. Lance Kaplan**
9	**Progressive Transformation Learning for Leveraging Virtual Images in Training**	**Dr. Hyungtee Lee**
10	**Information Saliency**	**Dr. Andre Harrison**
11	**Atmospheric Intelligence for Hybrid Power Advancements (AIHPA)**	**Ms. Gail Vaucher**

12	REALLM (Research & Experimentation Adapting Large Language Models)	Dr. Doug Summers-Stay

DATA GATHERING SESSION: OPEN TO THE PUBLIC (public distribution discussions only)
Location: Vandiver Inn, 301 South Union Avenue, Havre de Grace, MD, Tel: 202-263-9844

1830   Joint Working Dinner: Panel Members, Presenters, Competency Leads, and Senior ARL Management Engage in Discussions *(Public Distribution Discussions Only)*

2000   Adjourn

DAY 2: Thursday, September 7, 2023

DATA GATHERING SESSION: OPEN TO THE PUBLIC
Location: CR 1039, Building 4600, Aberdeen Proving Ground, MD, Tel: 301-938-5402 (Dr. Rajneesh Singh)

0915   Adaptive Planner Parameter Learning, **Dr. Garret Warnell**

0945   Game Theory for Multi-Agent Teaming**, Dr. Mike Dorothy**

1015   Break

1030   Synergistic Deception and Swarm Comprehension in Swarm/IADS Engagements, **Dr. Brian Reily**

1100   Terrain Perception for Autonomous Maneuver, **Mr. Phil Osteen**

1130   AI-Enabled Experimental Design for Accelerating the Development of Trustworthy and Explainable Autonomous Systems, **Mr. Jason Gregory**

DATA GATHERING SESSION: OPEN TO THE PUBLIC
Location: Conference Room, Robotic Research Collaboration Campus (R2C2), Graces Quarter, MD

1300 – 1350   Transport to R2C2

1350   Demo #1 - AIMM Offroad Autonomy. **Mr. Jason Gregory, Dr. Felix Sanchez, and Ms. Christa Robison.**

1420   Demo #2 - Autonomous Movement in Complex Terrain. **Mr. Joshua Wickwire**

1430   Demo #3 – Resilient and Distributed Multi-Robot Visual SLAM KIMERA-MULTI, TBD. **Dr. Carlos Nieto, Dr. John Rogers, and Mr. Nicholas Fung**

1450   Demo #4 - Energy Redistribution for Air (UAS) – Ground (UGV) Teaming and Battery Management System. **Mr. James Dotterweich**

1510   Demo #5 – Geospatial Data Integration Server. **Dr. Damon Conover**

1530   R2C2 Poster Session - Hosted in High Bay Lab Area

	R2C2 - Video/Hardware Poster Topics - In High Bay	Briefer
1	Dynamic Legged Locomotion on Deformable Terrain	**Mr. David Lynch, Mr. Jason Pusey**
2	Terrain-Aware Autonomous Ground Navigation in Unstructured Environments Informed by Human Demonstrations	**Mr. Christian Ellis**
3	Autonomous Robotic Decontamination	**Dr. Matthew Kaplan, Ms. Kristi Davis**
4	Air / Ground Collaborative Autonomy and Demo for 8th Army in Korea	**Mr. Mason Russell**
5	Information Recovery from Robotic Systems Under Communication Constraints	**Dr. Brad Woosley**
6	Electro-adhesion for Robotics	**Dr. Alex Langrock, Mr. Jeff Auletta**
7	Autonomous Self-Righting Behavior Development	**Mr. Rosario Scalise, Dr. Chad Kessens**
8	Inverse Reinforcement Learning and Filtering of Adversarial Agents	**Dr. Derya Cansever**
9	Digital Twins of Interacting Complex Systems	**Dr. Robert Martin**
10	Autonomous Deployment of Obscurants for Protection of Manned and Unmanned Systems	**Mr. David Booth**

Note: The data gathering sessions of this meeting to be held on 06 September 2023 from 0845-1045, 1300-1400 and 1730-1750; on 07 September 2023 from 0845-0915 and 1245-1300; and on 08 September 2023 from 1300-1430, will not be open to the public under Subsection 15(b)(3) of the Federal Advisory Committee Act, 5 U.S.C. App. The Academy has determined that to open these sessions to the public would disclose information described in 5 U.S.C. 552(b).