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Department of Information Sciences   Information Sciences Department Newsletter

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Information Sciences Department Newsletter

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Sponsor: Dan Boger
Editor: Mark Nissen

Publications

Books

None this quarter

Articles in Refereed Journals

None this quarter

Chapters in Books

Bekatoros, N., **Koons**, J.L., and **Nissen**, M.E., "Diagnosing Misfits, Inducing Requirements, and Delineating Transformations within Computer Network Operations Organizations" in: K. Knapp (Ed.), *Cyber Security and Global Information Assurance: Threat Analysis and Response Solutions* Hershey, PA: IGI Global (April 2009).

Oros, C.L. and **Nissen**, M.E., "Designing Complex organizations Computationally," Handbook of Research on Complex Dynamic Process Management: Techniques for Adaptability in Turbulent Environments, ISBN: 978-1-60566-669-3; 689 pp; July 2009.

Articles in Conference Proceedings

Eugene A. **Bourakov**, Oleg A. **Yakimenko**, Nathan J. **Slegers**, "Exploiting a GSM Network for Precise Payload Delivery", *Proceedings* 20th AIAA Aerodynamic Decelerator Systems Technology Conference and Seminar, Seattle, Washington, May 7th, 2009.

Eugene A. **Bourakov**, Alex B. **Bordetsky**, "Voice-on-Target: A New Approach to Tactical Networking and Unmanned Systems Control via the Voice Interface to the SA Environment", *Proceedings* 14th International Command and Control Research and Technology Symposium (ICCRTS), C2 and Agility, Washington DC, June 17-th 2009.

Clement, M.R., **Bourakov**, E., Jones, K.D., and Dobrokhodov, D., "Exploring Network-Centric Information Architectures for Unmanned Systems Control and Data Dissemination," *Proceedings* 2009 AIAA Infotech@Aerospace Conference, Seattle, WA, April 6-9, 2009.

Freeman, J., **Gallup**, S.P., and **MacKinnon**, D.J., "Human Interoperability: Initial Theory and Research," Proceedings of the Human Behavior-Computational Intelligence Modeling Conference, Oak Ridge, TN, 23-24 June 2009.

Hutchins, S. G., and **Kendall**, T. (2009). Analysis of Team Collaboration across Decision-Making Domains to Empirically Evaluate a Model of Team Collaboration. In *Proceedings of the 14th International Command and Control Research & Technology Symposium* (ICCRTS), June 2009. Washington, DC.

Hutchins, S.G., **Kemple**, W.G., **Kleinman,** D.L., **Miller**, S., **Pfeiffer**, K.D., Weil, S., Horn, Z., Puglisi, M. and Entin, E., "Maritime Headquarters with Maritime Operations Center: A Research Agenda for Experimentation,"

Proceedings 14th Annual International Command and Control Research and Technology Symposium, Washington, D.C., June 2009.

Hutchins, S., **MacKinnon**, D., **Freeman**, J., **Gallup**, S., "Maritime Domain Awareness: Assessment of Current Status," 14th International Command and Control Research & Technology Symposium (ICCRTS), June 2009.

Kendall, T. and **Hutchins**, S. G., (2009). Use of a Team Collaboration Model to Identify Candidate Knowledge Management and Collaboration Technologies. In *Proceedings of the 9th Bi-annual International Conference on Naturalistic Decision Making*. British Computer Society, London, UK. 23-26 June 2009.

An, W., Park, C., Pattipati, K.R., **Kleinman**, D.L. and **Kemple**, W.G., "HMM and Auction-based Formulations of ISR Coordination Mechanisms for the Expeditionary Strike Group Missions," *Proceedings* 14th Annual International Command and Control Research and Technology Symposium, Washington, D.C., June 2009; Best Student Paper.

Powley, E.H. and **Nissen**, M.E., "Trust-Mistrust as a Design Contingency: Laboratory Experimentation in a Counterterrorism Context," *Proceedings* International Command & Control Research & Technology Symposium, Washington, DC (June 2009); recommended for Best Paper Award.

Robey, J., **Odell**, C., "Facilitating Decision-making, Re-use and Collaboration: a Knowledge Management Approach to Acquisition Program Self-awareness," 6th Annual Acquisition Research Symposium Presentation and Paper, 13-14 May 2009, (Graduate students advised by **Zhao**, Y., **Gallup**, S.P., and **MacKinnon**, D.J.) .

Rodgers, W. and **Housel**, T.J., "TRANSPARENCY: KNOWLEDGE-BASED MEASURES FOR SMALL BUSINESS & ENTREPRENEURS*,*" *Proceedings* Fifth World Conference on Intellectual Capital, Paris, France (May 2009).

Other Publications

Nissen, M.E., "NAVAL POSTGRAD SCHOOL SEEKS TO DECENTRALIZE DECISION-MAKING," quoted by Dan Taylor in *Inside the Navy Magazine* 22:14, Article #17 (13 April 2009).

Powley, E.H. and **Nissen**, M.E., "Responding to Counterterrorism Threats: Effects of Coalition Trust and Mistrust on Organizational Design," Naval Postgraduate School Technical Report NPS-GSBPP-09-001 (February 2009).

"University Team Tapped to Test and Evaluate Revolutionary Reconnaissance System," Barbara Honegger. Idea and original article submitted by **Wood**, B.P. on the Joint Multi-Mission Electro-Optic System (JMMES) and its Joint Capabilities Technology Demonstration (JCTD) data collection efforts. Published on Naval Postgraduate School Intranet, 16 June 2009 and in the Naval Postgraduate School Outlook Newspaper, June 2009.

Presentations (not included in conference proceedings above)

Hayes-Roth, F. (2009). <u>Testing Evolutionary Development: Top 10 Good and Bad Ways to Evolve</u>. DISA Customer Participation Conference, JITC Track, DISA JITC. April 20, 2009, Anaheim, CA.

Housel, T.J., "Knowledge Value Added: Implications for Movement of Knowledge from Employees to Information Technology," Fifth World Conference on Intellectual Capital, Paris, France (May 2009).

Huynh, T.V., **Osmundson**, **J. S.** and Xuan-Linh Tran, "Architecting of Systems of Systems for Delivery of Sustainable Value", MIT Engineering Systems Symposium, Cambridge, MA (June 17, 2009).

Kendall, A and **Hutchins**, S.G "Use of a Team Collaboration Model to Identify Candidate Knowledge Management and Collaboration Technologies" presented at the 2009 Naturalistic Decision Making (NDM) conference (London), 25 June 2009.

Koons, J. L. Invited presentation on Managing Manned-Unmanned System Networking and Collaboration to the 10th International Conference on Telecommunication Systems, Modeling and Analysis (ICTSM 2009), Monterey, CA. July 10th 2009.

MacKinnon, D.J., and **Gallup**, S.P., "DISE Research: DHS Relevant Research," invited presentation at Naval Postgraduate School to the Under Secretary for the Department of Homeland Security, 9 April 2009.

MacKinnon, D.J., "MOC Issues: Architecture and Other Issues," invited presentation at Naval Postgraduate School to the "Policies and Problems in C4I" JC4I Capstone Course (CC 4913) for Information Science at the request of Professor Dan Boger, 8 April 2009.

MacKinnon, D.J.,, **Utschig**, J, **Garza**, R, and **McClain**, B, "DISE Capabilities and Accomplishments," given at Naval Postgraduate School in support of the Centennial Celebration, 25 May 2009.

Nissen, M.E., "ELICIT Research Opportunities at the Army Research Laboratory," invited presentation, US Army Research Laboratory, Adelphi, MD (June 2009).

Nissen, M.E., "ELICIT Research Experience at the Naval Postgraduate School," invited plenary presentation, International Command & Control Research & Technology Symposium, Washington, DC (June 2009).

Nissen, M.E., "ELICIT (Experimental Laboratory for Investigating Collaboration, Information-sharing and Trust) Experimentation in a Virtual Environment: Some Preliminary Design Thoughts," invited presentation, MOVES Institute Seminar, Naval Postgraduate School, Monterey, CA (May 2009).

Nissen, M.E., "Research centres and knowledge: the good, the bad and the ugly," invited presentation, Monieson Centre, Queens University, Kingston, ON, Canada (May 2009).

Grants and Funding

MacKinnon, D.J., **Gallup**, S.P. and **Kennedy**, Q., "Improving Healthcare Delivery for PTSD: An Interrelated Approach Leveraging Systems Engineering and Organizational Design," proposal submitted to National Center for PTSD, VA Palo Alto Health Care System, Jun 2009.

Carl **Oros**, continues collaborative research with Denis **Volpano** (CS Dept.) and Rex **Buddenberg** in support of the Marine Corps Warfighting Laboratory (MCWL) Distributed Operations Tactical C2 (DOTC2) research project, $150,000.00

John **Osmundson** and Thomas Huynh, "JTRS AMF Systems Engineering Independent Assessment," US Army AMF JTRS, $65,000.

John **Osmundson,** Thomas Huynh and Renee Rendon, "Systems of Systems Acquisition: System-of-Systems Systems Engineering and Contracting Processes and Structures," US Army AMF JTRS, $100,000.

Roeting, W. H., **Garza**, R.V, **Das**, A.J., Boeing CRADA Task designed to develop a bi-directional Cross Domain Solution and associated filters to support ISR data transfer at the tactical edge between US and Coalition Forces. The Boeing Secure Network Server was successfully tested during Empire Challenge 09 at NAWC China Lake between four (4) enclaves with different classifications.

Awards

Hayes-Roth, F. (2009). Hook-up Assistant. US Patent 7,552,393 B2. June 23, 2009.
A hook-up assistant (HUA) capable of assisting people in hooking up with other people, in various business and social settings, and of achieving decision-making, planning, and commitment activities asynchronously, thereby advantageously off-loading an event requester's tedious tasks of communicating with multiple potential participants and resource/service providers for an intended event/activity. The HUA effectively eliminates "phone tag" problems and beyond, by enabling a user to simply "make a wish," e.g., "make an event happen." The HUA takes appropriate actions to "make the wish a reality," *i.e.,* contacting all parties involved, determining mutually agreeable dates, times, arranging necessary devices, resources, and services, securing reservations, purchasing admission tickets, etc., to ensure all parties involved can actually participate in the event at the planned time and place. The HUA can communicate with animate/inanimate entities as well as other HUAs regardless of virtual/physical boundaries such as platforms, protocols, systems, networks, and the like.

O'Dell, C., LCDR, USN and **Robey**, J., CDR, USN, "Facilitating Decision Making, Re-use and Collaboration: A Knowledge Management Approach to Acquisition Program Self-Awareness," M.S. in Information Sciences, Naval Postgraduate School, June 2009. (Received Distinguished Thesis Award by Information Science Department of Naval Postgraduate School. Advised by **Gallup**, S.P. and **MacKinnon**, D.J.).

Significant Professional Activities

Bordetsky, A., **Looney**, J.P., **Bourakov**, E., and **Clement**, M.R. from the Center for Network Innovation and Experimentation (CENETIX) conducted the semi-annual Tactical Network Topology Maritime Interdiction Operations (TNT MIO 09-2) experiment during April in support of DHS, USSOCOM, and ONR research objectives. Primary activities of this complex field experiment were conducted in both San Francisco Bay and in the James River area of Virginia, and included manned and unmanned assets from many organizations including the USCG and USCG Auxiliary, USSOCOM and Naval Special Warfare, Naval Expeditionary Combat Command, Naval Surface Warfare Development Center-Small Boat Division, US Army Divers, and the Department of Transportation Maritime Administration. Additional activities were conducted by international partners in Sweden and Germany.

Gallup, S. P. and various participants in DISE activities accomplished numerous planning conferences and like events for Trident Warrior 09, Empire Challenge 09, PACOM J3 with J2 interoperability analysis, Joint Multi-Mission Electro-Optic System (JMMES) Joint Capabilities Technology Demonstration (JCTD) Operational Demonstration #1.

Koons, J.L. Served as panel member on Counter IED Networking and Situational Sensing (Problem Presentation) to the 10th International Conference on Telecommunication Systems, Modeling and Analysis (ICTSM 2009), Monterey, CA. July 10th 2009.

Looney, John supported the Operations Research (OR) Department's Maritime Operational Planner research program by leading the participation and evaluation of two optimization-based Decision Support Systems--Global Fleet Station Mission Planner (GFSMP) and Combat Logistics Force (CLF) Planner--at the Naval Warfare Development Command's Operational Level Command and Control (OLC2) experiment to explore Maritime Operations Center (MOC) development. This experiment was conducted in association with the Navy's Trident Warrior 2009 experiment.

PhD Student Accomplishments

Alicemary **Adams** was admitted to the Information Sciences PhD Program as its inaugural National Security Institute Scholarship recipient.

Jack **Koons** successfully completed his written and oral qualifying exams.