Guest Editorial

This special issue of the Industrial and Systems Engineering Review (ISER) represents a collection of exemplary undergraduate research, engineering, and analysis. The Department of Systems Engineering at the United States Military Academy hosts an annual conference to showcase projects completed by graduating seniors. The best papers from this conference are invited to publish in this special issue, and the present collection, comprising entirely of defense related topics, represents eight outstanding papers that summarize project results. Three different themes emerge from these papers: future systems development, talent management, and threat analysis.

Design and acquisition of future systems is a prominent theme in this collection. In particular, the role of unmanned systems on the battlefield and human interaction with these systems remain an exciting research areas, as shown by Bearden et al. and Anderson et al. Human enhancement technologies represent another domain of high interest to militaries worldwide. Fairbrass et al. describe some of the trade-offs involved with human enhancement technology currently under development in the special operations community. Logistics technology advancements also present a significant interest to force developers, and Burrell et al. discuss the decades-old problem of logistics-over-the-shore operations.

Military leaders understand the significance of attracting and retaining the best talent possible, and two papers address specific talent management and talent awareness challenges. Stokes and Wisniewski present a very timely study focused on the integration of women in the infantry, using a system dynamics model to explore the many aspects of this problem. Amason et al. address a talent awareness related problem - projecting intellectual capital from non-operational and domestically based forces to support the needs of forward deployed forces.

Lastly, two papers detail specific threats to national security, a perennial topic for defense professionals. Cagney and Wong present a system dynamics tool that explores relations with North Korea. Ohl et al. examine the highly evolving and ubiquitous threat of the cyber domain through the development of a data analysis and visualization tool that focuses on insider threats.

Please join me in celebrating this outstanding collection of undergraduate research.

LTC Paul F. Evangelista
Director, Engineering Management Program Department of Systems Engineering, USMA
Mahan Hall, Bldg 752, Room 311
845-938-5181 (work)
845-857-8204 (cell)
paul.evangelista@usma.edu