The Engineering Management, Information, and Systems Department

Would like to announce….

Ph.D. in Applied Science Defense

"Development of Leading Indicator Methodology of University Research Project Performance"

Presented by

Rodman P. Abbott

Advisor: Dr. Jerrell Stracener

Thursday, November 17, 2016

Noon - 1:30 PM

HUITT-ZOLLARS PAVILLION

Embrey Building, Room 115

Abstract: University research administration leadership currently lacks adequate visibility into the well-being and fitness of its research program elements (research projects, research groups, research centers, research institute, research systems, and research system of systems) required to make time-sensitive decisions regarding research program risks and develop possible mitigation strategies and plans.

Modern-day university research projects are increasingly dependent on results tied to national security, economic prosperity, and competitiveness of the United States. We have developed a new quantitative leading indicator methodology to provide research administration leadership with a proactive capability to view critical research program failure elements before failure occur. Utilizing a systems engineering (SE)-based approach, derived from ISO/IEC 15939, the INCOSE Systems Engineering Leading Indicators Guide, and other SE documentation, we conducted a prototype requirements analysis for a leading indicator system which includes modeling of research program data. From this analysis, a university-specific architecture was developed that includes an initial data strategy integration model. A conceptual proof-of-concept methodology for the leading indicator methodology was produced along with accompanying high level cost estimating method.

Our research shows that there is a requirement to incorporate further selected leading indicator processes and methodologies into university research administration structures, but that such incorporation should be managed carefully as the concept is still in its infancy and requires evolution. The significant results of this leading indicator research are: (1): the identification of the specific total cost system(s), by magnitude and degree, which impact research output(s); and (2) the assessment of and possible forecasting of future research unit success based upon calculated standard deviation value boundaries for the total system costs.

Bio: Rodman Abbott received his B.A degree in physics from the University of Minnesota, Morris; M.S degree in physics from the University of Minnesota; and M.S. degree in international business from St. Mary's College of Moraga, CA. He is currently a Ph.D. candidate with a major in Applied Science at the Bobby B. Lyle School of Engineering, SMU. He is a candidate for the Ph.D. with a major in Applied Science from the Bobby B. Lyle School of Engineering. Rodman is currently the program manager for the Naval Research Program at the Navy Post Graduate School in Monterey, CA. His current research interests include research organization performance metrics, complex systems management and program management. He is currently a member of INCOSE,

Program Management Institute (PMI), and the Society of Research Administrators International (SRAI). His current research findings have been presented in conference proceedings of *the 18th Annual NDIA SE Conference. A research journal article dealing with his Ph.D. research is set to appear in Journal of Research Administration.*

Everyone invited and welcome!