AREAS OF RESEARCH SPECIALIZATION
(and Selected Research Topics)

Modeling and Simulation
- Developing Mathematical Models for Project Risk Management
- Distributed System Modeling
- Modeling and Simulation for Embedded Systems
- Complex Systems Modeling

Computational Intelligence
- Neural Networks, Fuzzy Logic
- Evolutionary Programming
- Swarm Optimization for Intelligent Systems
- Approximate Dynamic Programming and Reinforcement Learning Application
- Data Mining
- Time Series Forecasting
- Clustering Algorithms
- Computational Intelligence in Game Theory

Human System Integration
- Human-Centered Complex Systems Design
- Modeling of Human Performance
- Integrating Human Components to System of Systems

System of Systems Architecting
- System of Systems
- Architecture Frameworks
- Executable Architectures
- Smart Systems Engineering
- Design for Flexibility
- System Architecture Evaluation
- End-to-End System Security
- High Speed Networks
- Wireless Networks
- Wireless Ad Hoc and Sensor Networks
- Information Assurance
- Vulnerability Assessments
- Reliability Analysis
- Network-Centric Collaborative Design
- Sustainable Development of Network Centric Infrastructure Systems

Infrastructure Systems
- Health Monitoring of Infrastructure Systems
- Behavior of Infrastructure Systems Under Extreme Conditions
- Transportation Infrastructure Architecting
- Energy Infrastructure Systems
- Smart Grid Capacity Modeling and Analysis
- Renewable Systems Energy Reliability
- Structures

Recent Ph.D. Dissertation Titles


Assessing System Architectures: The Canonical Decomposition Fuzzy Comparative Methodology, Jason Dauby December 2010

Modeling Network Traffic on a Global Network-Centric System with Artificial Neural Networks, Douglas Keith Swift, December 2007