



# Department of Systems Engineering Facts and Stats



**Vision:** We are 'The Army's Systems Engineering Department' educating cadets and developing faculty to lead teams that develop and implement high value solutions to future problems in a dynamic, uncertain, technologically complex world.

## What We Do

- Examine, design & re-engineer large-scale, high tech systems or processes
  - System design, modeling and simulation
  - Generate feasible and acceptable alternatives to make systems last longer, cost less, and perform more efficiently
  - Lead multi-disciplinary teams
  - Analysis of Alternatives
  - Research relevant to all branches of the Army
  - 3 Course Systems Engineering Sequence
  - Instruct cadets enrolled in our five program majors
    - Systems Engineering\*
    - Engineering Management\*
    - Systems Management
    - Operations Research
    - Information Engineering\*\*
- \*ABET Accredited Program  
\*\*Offered to Class of 2008 and 2009 only

## Cadet Enrollment

- Over 100 majors per year group
- An additional 200 cadets per year group take the Systems Engineering Sequence

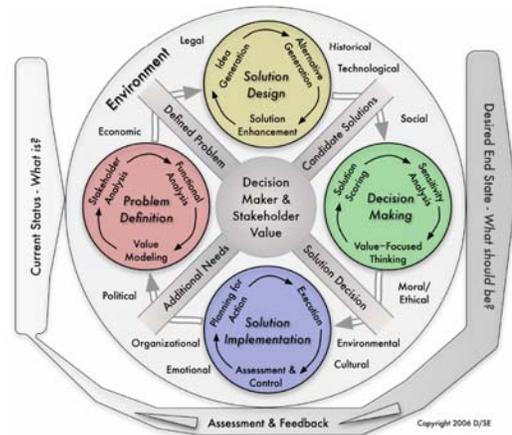
## Research Program AY 08

Department of Systems Engineering cadets and faculty support leaders for our Army and the nation by developing innovative solutions to complex problems.

- Army casualty assistance process and system improvement
- Operational effectiveness of counter-IED strategies
- Soldier weapons reliability analysis
- Ammunitions supply point resource allocation
- Operational concept for IED defeat laser system
- Methodology for cataloging space debris



## The Systems Decision Process (SDP)



## Cadet Chapter Professional Societies

- American Society for Engineering Management (ASEM)
- International Council of Systems Engineering (INCOSE)
- Institute For Operations Research and Management Science (INFORMS)
- Military Operations Research Society (MORS)
- Approximately 35 Cadets participate annually
- Participation in these professional societies allows cadets to observe and learn more about systems engineering, operations research and management science professionals, research, students, educators, and managers, as well as the institutions they serve



## Nationally Recognized Academic and Research Programs

- Rist Prize Winners (MORS)
- Barchi Prize Winners (MORS)
- ASEM Academic Leadership Award
- Best Engineering Management Program in US in '05 and '06
  - Thomas Laurete (MORS)
  - Koopman Prize (INFORMS)
  - Wilber Payne Award (Army)
    - US Patent #7010463

### **Academic Individual Advanced Development (AIAD)**

- Cadet's gain valuable experience working 3 to 4 weeks as summer interns on systems engineering related problems
- Some AIAD's are aligned with yearlong capstone projects that cadets will work their senior year
- 36 AIADs in many places including: D.C., California, Hawaii, Florida, Central America, Germany, Australia as well as other US locations
- Partners and clients include Congress, Pentagon, Lockheed Martin, NSA, Army Science Board and civilian universities
- Possible long-term research relationship with industry and government agencies.



### **Technology for System Modeling, Simulation and Analysis**

- DSE offers education and training compatible with the same technology utilized in the Army and industry inside the Lifecycle Acquisition Management Institute (LAMI). LAMI is comprised of the following Laboratories:
- Combat Simulation Lab (CSL) features force-on-force computer simulations for education and research.
- Visual Modeling and Simulation Lab (VMSL) features a virtual, 3-D immersion environment for studying primitive behaviors of objects in synthetic environments, human in the loop, information engineering for battle commanders, and analysis of system functionality.
- Systems Methodology and Design Lab (SMDL) provides a group meeting environment that supports multi-disciplinary engineering and design teams with a collaborative, electronic meeting facility.
- Information Visualization Laboratory (IVL) is a state-of-the-art, integrated knowledge engineering environment for depicting information and data taxonomies, ontologies, and metrics.

Additional technological capabilities include:

- Computer Aided Systems Engineering Lab (CASE) provides state of the art engineering software applications to facilitate the Systems Engineering process.
- Secure Systems Engineering Lab (SeSEL) allows access, processing and analysis of classified information and data as well as secure VTC.



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### **Current and Former Faculty Including Extended Reach**

- 31 Faculty (26 military, 7 civilian)
- 18 PhDs
- 3 ABD
- 23 MS
- 5 MBA
- Degrees awarded from various academic institutions:
  - Air Force Institute of Technology
  - Colorado School of Mines
  - Columbia University
  - Cornell University
  - Duke University
  - George Mason
  - Georgia Institute of Technology
  - Kansas State University
  - Massachusetts Institute of Technology
  - Mississippi State University
  - Naval Postgraduate School
  - North Carolina State University
  - Rensselaer Polytechnic University
  - Rutgers University
  - Stanford University
  - Stevens Institute of Technology
  - Texas A&M University
  - The Pennsylvania State University
  - University of Arizona
  - University of Virginia
  - University of Texas
  - Virginia Polytechnic University
- 4 White House Fellows
- Many military career fields represented
- 3 members of Tau Beta Pi
- 11 member of Omega Rho
- 2 members of Epsilon Mu Eta
- 7 members Alpha Pi Mu
- 3 members Phi Kappa Phi

### **Former Faculty Members:**

- 4 General Officers and Senior Executive Service
- 7 O-6 and above equivalent Commanders
- 24 O-5 and above equivalent Commanders
- Field Grade officers at all levels represented through out the operational Army
- Analysts & Researchers throughout the Army:
  - Army Recruiting Command
  - Army Accessions Command
  - Army Test & Evaluation Command
  - Concept Analysis Agency
  - Pentagon
  - Personnel Command
  - TRADOC Analysis Centers