AFIT/EN/TR-05-01
TECHNICAL REPORT
MARCH 2005

Air Force Institute of Technology
Research Report 2004

Period of Report: 1 October 2003 to 30 September 2004

Graduate School of Engineering and Management

GRADUATE SCHOOL OF ENGINEERING AND MANAGEMENT
AIR FORCE INSTITUTE OF TECHNOLOGY
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

AIR FORCE INSTITUTE OF TECHNOLOGY

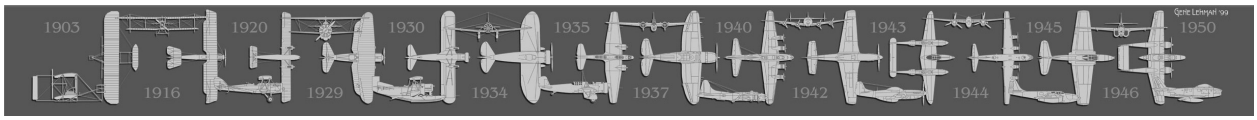
Wright-Patterson Air Force Base, Ohio

This report was edited and produced by the Office of Research and Consulting, Graduate School of Engineering and Management, Air Force Institute of Technology. The Department of Defense, other federal government, and non-government agencies supported the work reported herein, but have not reviewed or endorsed the contents of this report.

For additional information, please call or email:

937-255-3633
DSN 785-3633
research@afit.edu

or visit the AFIT website: www.afit.edu



Air Force Institute of Technology
Research Report 2004
Foreword

Research is the cornerstone of the dramatic advances in air and space defense technology that are necessary to address today's international and homeland security issues, and will be critical to the nation's ability to meet the challenges of tomorrow. Research is also an integral part of graduate education, providing graduates with in-depth knowledge, critical thinking skills, and problem solving abilities. At the Air Force Institute of Technology (AFIT), our faculty and students engage in research with the goal of sustaining the technological supremacy of the United States Air Force (USAF).

AFIT maintains active partnerships with our Air Force's organizations and operational communities as well as the Department of Defense (DoD) and other federal agencies to maximize the contributions of our research programs to national needs. Our faculty and students also engage in collaborations with researchers at universities throughout the nation to advance the state-of-the-art in a variety of disciplines. AFIT cooperates with commercial enterprises to ensure timely transfer of new technology to US industry through Cooperative Research and Development Agreements (CRADAs) whenever appropriate.

This Research Report is prepared annually to report on the significant contributions of this institution, to solicit continued involvement and support from our Air Force, DoD, and other federal partners, and to encourage new sponsors to participate in AFIT's research programs. AFIT welcomes new opportunities to engage in research projects that are of mutual interest to our customers, faculty, and students.

ROBERT A. CALICO, JR.
Dean, Graduate School of Engineering and Management

DAVID W. EIDSAUNE, Brig Gen, USAF
Commandant
Air Force Institute of Technology

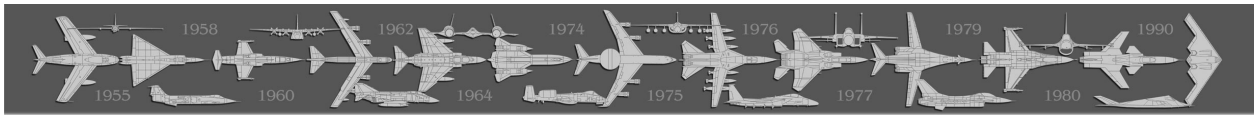


Table of Contents

1. INTRODUCTION

1.1 OVERVIEW

This Research Report presents the FY04 research statistics and contributions of the Graduate School of Engineering and Management (EN) at AFIT. AFIT research interests and faculty expertise cover a broad spectrum of technical areas related to USAF needs, as reflected by the range of topics addressed in the faculty and student publications listed in this report. In most cases, the research work reported herein is directly sponsored by one or more USAF or DoD agencies.

AFIT welcomes the opportunity to conduct research on additional topics of interest to the USAF and other DoD organizations, when adequate manpower and financial resources are available and/or provided by a sponsor. In addition, AFIT provides research collaboration and technology transfer benefits to the public through Cooperative Research and Development Agreements (CRADAs). Interested individuals may discuss ideas for new research collaborations, potential CRADAs, or research proposals with individual faculty using the contact information in Appendix A.

Additional information on the research programs at AFIT may also be found on the research web home page at http://en.afit.edu/enr/. The Office of Research and Consulting, Graduate School of Engineering and Management can be reached at 937-255-3633, (DSN 785-3633) or by email: research@afit.edu. The primary points of contact are Mrs. Pamela A. Vargas, Director of Sponsored Programs, 937-255-3636 x4729, DSN 785-3636 x4729 and Dr. Heidi R. Ries, PhD, the Associate Dean for Research, 937-255-3636 x4544, DSN 785-3636 x4544.

1.2 THE GRADUATE SCHOOL OF ENGINEERING AND MANAGEMENT RESEARCH COLLABORATION

As detailed in the 2004-2005 catalog at http://www.afit.edu/information/catalogs.cfm, AFIT offers Master's and Doctoral programs in a variety of disciplines through six departments: the Department of Mathematics and Statistics (ENC), the Department of Electrical and Computer Engineering (ENG), the Department of Engineering Physics (ENP), the Department of Operational Sciences (ENS), the Department of Systems and Engineering Management (ENV), and the Department of Aeronautics and Astronautics (ENY). In all of these disciplines, research is an integral component of graduate education, developing an individual student's skills and providing new knowledge of interest to many.

AFIT distributes annual Research Activities Brochures (http://en.afit.edu/enr/resactivities.html) in an effort to involve sponsor organizations in research and education. A brief listing of each department's research areas of emphasis appear below. Please contact the faculty, relevant departmental office, or the Office of Research and Consulting for further information (see Appendices A & C).

The **Department of Aeronautics and Astronautics** invites research topic proposals and collaborative suggestions for the Aeronautical, Astronautical and Systems Engineering programs. The following list highlights the Department's research specialties:

Aeroelasticity and Design Optimization
Aerospace Structures and Materials
Analysis of Computer Turbine Aerdynamics
Computational Fluid Dynamics
Control of High Performance Aircraft
Dynamic Flight Simulation
Experimental Fluid Dynamics
Inflatable Space Structures
Materials and Structural Analysis
Rotocraft Aeromechanics
Satellite Cluster Dynamics, Navigation, & Control
Systems Engineering

The **Department of Electrical and Computer Engineering** invites research topic proposals and collaborative suggestions for the Electrical Engineering, Computer Engineering and Computer Science programs. The following list highlights the Department's research specialties:

Artificial Intelligence
Center for Information Security Education and Research
Communications/Radar
Computer Communication Networks
Electromagnetics/Low Observables
Evolutionary Algorithms
Guidance, Navigation and Control
Microsystems
Parallel and Distributed Processing
Signal and Image Processing
Software Engineering, Information Visualization, Information Engineering, Exploitation, and Dissemination

The **Department of Engineering Physics** invites research topic proposals and collaborative suggestions for the Applied Physics, Nuclear Engineering, Electro-Optics (jointly operated with the Department of Electrical and Computer Engineering) Materials Science (jointly operated with the Department of Aeronautics and Astronautics) programs. The following list highlights the Department's research specialties within these programs:

Center for Directed Energy (CDE)
Center for MASINT Studies and Research (CMSR)
Computational Physics
Counterproliferation
Electronic and Photonic Materials
Lasers and Electro-Optics
Nuclear Weapons and Effects
Remote Sensing & Signature Analysis
Space Weather

The **Department of Mathematics and Statistics** invites research topic proposals and collaborative suggestions for the following research specialties:

Applied Analysis
Applied Statistics
Numerical Analysis

The **Department of Operational Sciences** invites research topic proposals and collaborative suggestions within the areas of Operations Research and Logistics Management. The following list highlights the Department's research specialties:

Center for Operational Analysis (COA)
Decision and Risk Analysis
Engineering Design Optimization
Global En Route Infrastructure Strategies for Strategic Airlift
Information Operations/Information Warfare
Neural Classification and Sensor/Classifier Fusion
Operational Modeling and Simulation
Operational Problems and Heuristic Modeling
Stochastic Systems Analysis

The **Department of Systems and Engineering Management** is seeking research topic proposals and collaborative suggestions for the Cost Analysis, Engineering Management, Environmental Engineering and Science, Information Resource Management, and Research and Development Management programs. The following list highlights the Department's research specialties:

Applied Environmental Sciences
Cost Analysis in Acquisition Community
Defense Product Development
Facility and Infrastructure Management
Information Assurance and Security
Knowledge&Strategic Information Management
Leadership and Management
Organizational Change and Theory
Quantitative Economics
Sustainable Development
System Dynamics Modeling
Technology Development and Application

Another avenue for educational and research collaboration with the Graduate School of Engineering and Management is through association with one or more of **AFIT's Research Centers and Laboratories**. A brief listing of each Center's or Laboratory's educational or research areas of emphasis appears below. Please contact the Centers or Laboratories directly (see Appendix C), or contact the Office of Research and Consulting for further information (937-255-3633, DSN 785-3633).

The **Center for Directed Energy (CDE)** supports Air Force and Department of Defense agencies in transitioning high energy lasers and high power microwaves to the battlefield through vigorous scientific and engineering research, graduate education programs, and diverse consulting activities.

The **Center for Information Security Education and Research (CISER)** is one of the National Security Agency (NSA) designated Centers of Academic Excellence in Information Assurance Education (CAE/IAE). CISER's objective is to increase the number of Information Assurance (IA) professionals through graduate-level education, degrees, and certificates in IA.

The **Center for MASINT Studies and Research (CMSR)** is focused on Air Force and Department of Defense MASINT (Measurement and Signature Intelligence) scientific, technical, and operational activities through graduate research programs. CMSR is a national resource for educating a new generation of MASINT professionals.

The **Center for Operational Analysis (COA)** is dedicated to research and education in operational analysis with an emphasis on enhancing warfighter efficiency and effectiveness at all levels through applications of advanced modeling techniques, algorithms and technology.

The **Center for Systems Engineering (CSE)** strives to be the nationally recognized Center of Excellence for Systems Engineering, accommodating the complete spectrum of Systems Engineering from theory to practice as it applies to Department of Defense weapon systems. Center personnel support education programs, conduct research and sponsored projects, and provide consultation services in all areas of Systems Engineering to include Systems Architecture, Evolutionary Acquisition, Risk Management, and Project Management. We educate the workforce (Capability definers, System Architects, Engineers and Program Managers) in how Systems Engineering both benefits them and is appropriately applied throughout a System lifecycle from Identification of a Need, to Alternative Concept Analysis, to Concept Refinement, to System Definition and Design through Qualification, Modification and Sustainment.

1.3 RESEARCH ASSESSMENT QUESTIONNAIRE RESULTS

An AFIT Research Assessment Questionnaire, shown on the following page, was sent to each sponsor of a Master's thesis and doctoral dissertation project during FY 2004 to determine the project's contribution, significance and cost avoidance. Detailed results of the questions asked are shown in Table 1.1. The data in this table are based on 78 questionnaires returned out of the 218 questionnaires mailed.

Table 1.1: Sponsor Assessment of AFIT Research

QUESTION	EN
Did this research contribute to a current Air Force/DoD project? (Yes answers)	97%
The thesis work was:	
Highly significant	45%
Significant	45%
Slightly significant	10%
Not significant	0%
Average man-years of effort saved by the sponsors.*	.73
Average cost avoided per thesis/dissertation by the sponsors.*	$118,283
Total cost avoided for all theses and dissertations sponsored (estimated).*	$29.6 M
Rank of respondents	
Colonel (GM-15)	13%
Lt Col (GM-14)	64%
Major (GM-13)	14%
Captain (GS-12)	6%
Other	3%

* Excludes information on one dissertation valued at $20 M cost avoided and 15 man years of effort saved. Including this information, the average man years of effort saved would increase to .92, the average cost avoided per thesis/dissertation would increase to $373,177, and the total cost avoided for all theses and dissertations sponsored would be estimated at $49.6 M.

RESEARCH ASSESSMENT QUESTIONNAIRE

TO:

Thank you for sponsoring the AFIT thesis or dissertation listed below. AFIT is working hard to keep its research focused on defense technologies of interest to the Air Force and to the nation.

Title:

Student Author: Designator:

Faculty Advisor:

Please help us determine the value and contribution of this research to your organization's mission by answering the questions below:

1. Did this research contribute to a current task or goal of interest to your organization? Y / N
2. Would you have completed this work if AFIT had not done it? Y / N
3. Regardless of your answers above, how would you rate this work?
   Highly significant
   Significant
   Slightly significant
   No significance
4. If AFIT had not done this work, please estimate what it would have cost your organization to perform it, either by using in-house resources or by contract. *Man-Years ____ $_____

   **Please note that typically an MS thesis requires 0.5MY of the student's time and one month of the faculty advisor's time. For a PhD dissertation the numbers are 2MY for the student and 4 months for the advisor*.

5. Would you like to make any remarks? (These will be shared with the academic department and the faculty chairperson.) (If necessary, please continue on reverse side.)

You may mail this to AFIT/ENR, 2950 Hobson Way, Wright-Patterson AFB OH 45433-7765, or fax it to 937-656-7139 (DSN 986-7139), or just e-mail your answers (only) to 1 to 5 to research@afit.edu
If you use e-mail, please include the designator above so that we might identify the project.

Thank you.

_____ _____
Name of Evaluator Office Symbol

_____
Grade/Rank of Evaluator

2. RESEARCH STATISTICS

2.1 RESEARCH AND CONSULTING OUTPUT MEASURES

Technology sharing and transfer are critical to the timely development of new operational capabilities. There are measurable indicators of AFIT's contribution to the engineering and scientific community and AFIT's success in staying well informed of technical possibilities and scientific opportunities. They include the number and quality of technical publications accepted by the editors of journals, the number of presentations accepted for regional, national and international conferences, the number of research projects conducted, the number of consultations performed for Air Force and DoD customers, and finally the number of student MS theses and PhD dissertations that are completed and submitted to the Defense Technical Information Center. For FY04, these output measures are shown in Table 2.1 and in Figure 2.1.

Table 2.1: Faculty Research and Consulting Output

Graduate School Department	Number of Faculty (FTE) *	Refereed Publi-cations	Other Publi-cations	Presen-tations	Funded Research Projects	Substantial Consul-tations	Master's Theses Advised	Doctoral Dissertations Advised
Math (ENC)	14	13	15	27	8	6	5	0
Elec (ENG)	27	16	76	38	48	12	54	6
Phys (ENP)	17	8	9	47	25	7	27	2
Op Sc (ENS)	22	23	19	44	16	3	37	3
Sys & Eng Man (ENV)	19	8	10	13	5	7	69	0
Aero (ENY)	19	23	31	35	45	12	43	5
Total	118	91	160	205	144	47	235	16

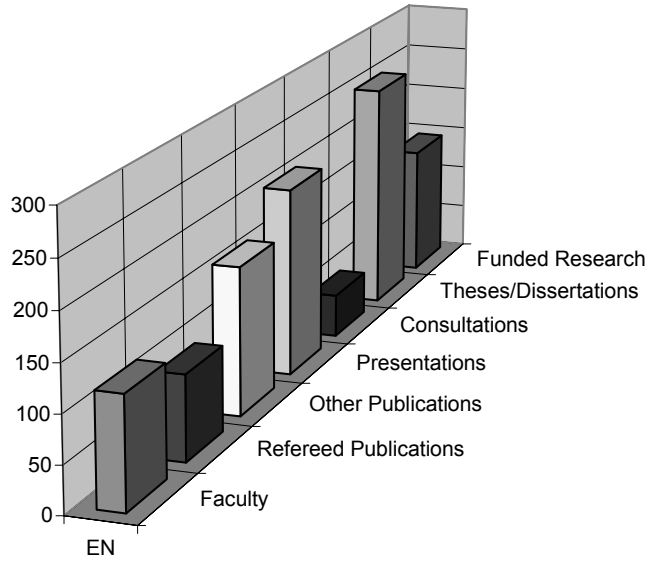


Figure 2.1: Research Output Measures

*FTE: Full-time equivalent

2.2 RESEARCH AND CONSULTING SPONSORSHIP

As members of an Air Force institution, the faculty of the Air Force Institute of Technology focuses their research on current problems as well as future systems of the Air Force and other DoD organizations. Evidence of this focus is that 93% of technical, and 86% of all theses and dissertations listed in Table 2.1 are externally sponsored by Air Force, DoD and Government agencies. In addition, most of the research projects and consultations are carried out for Air Force and DoD units. The data is summarized in Table 2.2 and Figure 2.2.

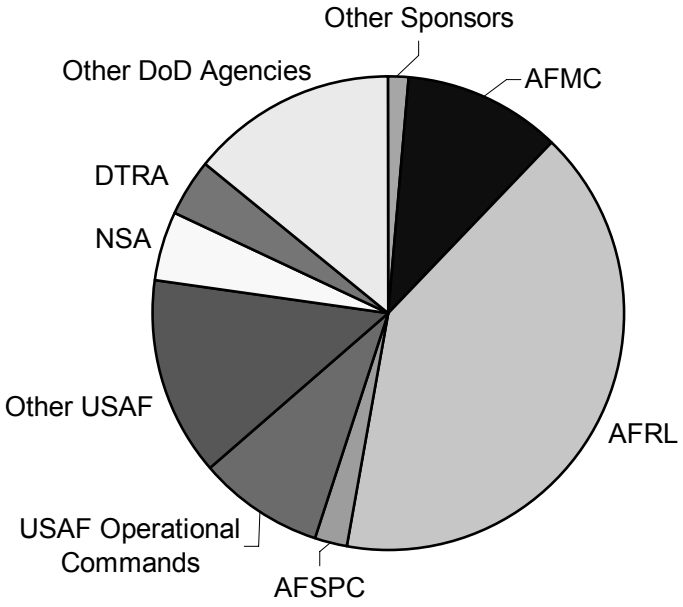


Figure 2.2: Sponsors of AFIT Theses and Dissertations

Table 2.2: Sponsorship of AFIT Research

SPONSOR ORGANIZATION	Master's Theses	PhD Dissertations	Funded Research	Substantial Consultations
AIR FORCE	8		5	6
Office of the Secretary of the Air Force	6		2	
AIR COMBAT COMMAND	1		1	
Air Force Information Warfare Center	1		1	
National Air and Space Intelligence Center	5	1	2	1
AIR FORCE MATERIEL COMMAND	11		1	4
Aeronautical Systems Center	8			2
Air Force Flight Test Center	2		2	
Air Force Institute for Operational Health	1			
Air Force Research Lab/Air Force Office of Scientific Research	12	4	32	1
Air Force Research Lab/Air Vehicles Directorate (VA)	8	3	12	2
Air Force Research Lab/Directed Energy Directorate (DE)	3	1	4	
Air Force Research Lab/Human Effectiveness Directorate (HE)	5		3	
Air Force Research Lab/Information Directorate (IF)	9		2	1
Air Force Research Lab/Materials & Manufacturing Dir. (ML)	6	1	9	5
Air Force Research Lab/Munitions Directorate (MN)	7	1	7	3
Air Force Research Lab/Propulsion Directorate (PR)	10		8	1
Air Force Research Lab/Sensors Directorate (SN)	15		13	4
Air Force Research Lab/Space Vehicles Directorate (VS)	3	1	1	
Electronic Systems Center		1	1	
Warner Robins Air Logistics Center	1			
AIR FORCE SPACE COMMAND	5		2	
AIR MOBILITY COMMAND	4			
AIR NATIONAL GUARD	1			
PACIFIC AIR FORCES	2			
US AIR FORCE ACADEMY	1			2
US AIR FORCE OPERATING AGENCIES				
Air Force Center for Environmental Excellence	5			1
Air Force Civil Engineer Support Agency	3			
Air Force Communications Agency	3		1	
Air Force Personnel Operations Agency	1			
Air Force Studies and Analyses	1			
Air Force Technical Application Center	2	1	1	
Air Force Weather Agency	3			3
DEPARTMENT OF DEFENSE	6		4	4
Defense Modeling and Simulation Office	1	1		
Defense Threat Reduction Agency	8	1	1	
National Security Agency	9	1	7	1
Office of the Secretary of Defense	12		6	1
Office of the Secretary of Defense/Defense Acquisition Univ.	4			
US Central Command	1			
US Strategic Command	1			
ARMY	1			
DEPARTMENT OF ENERGY			1	
Pacific Northwest National Laboratory	1		1	
DEPARTMENT OF HOMELAND SECURITY				
United States Coast Guard	1			
DEPARTMENT OF TRANSPORTATION				1
ENVIRONMENTAL PROTECTION AGENCY	1			
MARINE CORPS	4			
NON-FEDERAL ORGANIZATIONS			1	7
Dayton Area Graduate Studies Institute	1		7	
GE Aircraft Engines	1			
Royal Australian Air Force	1			
TOTALS	206*	17*	138	50

*Multiple Sponsors

See Appendix C for Selected Acronym List and Organization Name Changes

2.3 OUTSIDE FUNDING FOR THE GRADUATE SCHOOL OF ENGINEERING AND MANAGEMENT

Many of the Graduate School of Engineering and Management's theses and research projects completed under faculty supervision (sponsored or unsponsored) are funded in part by other Air Force, DoD and government units and agencies. Often this funding results from collaboration between faculty and thesis sponsors and occurs when the research project can be leveraged by the purchase of equipment or services not otherwise available. Tables 2.3 and 2.4 and Figure 2.3 summarize outside funding for FY04.

Table 2.3: Sponsoring Organizations for Funded Research

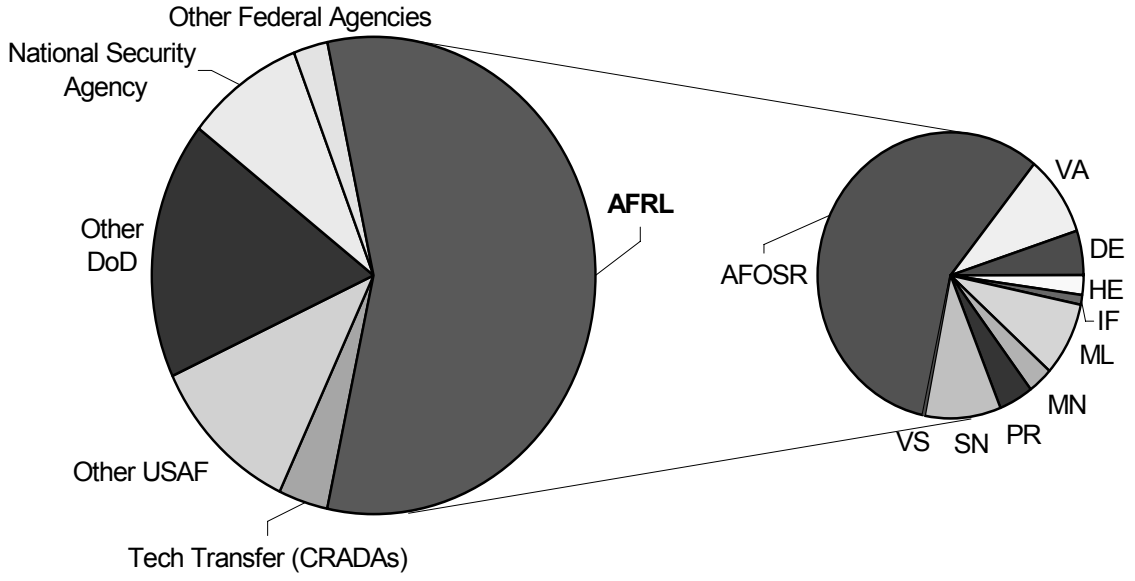
Sponsoring Organization	Funded Projects	Dollars ($)*
AFRL**	96	$2,891,220
Other USAF	19	$571,232
Other DoD	12	$888,195
National Security Agency	7	$437,025
Other Federal Agencies	2	$123,300
Tech Transfer (CRADAs)	8	$183,482
TOTAL* **	**144**	**$5,094,454***

* Includes carry over funding from FY03 of $1,126,582; and does not include $1,126,675 for sponsored educational programs.
**See Table 2.4.
***DoD regulations limit AFIT's charges to DoD organizations. Accounting for these nonchargeable items, the cost of our research program at a comparable civilian university would have been approximately $13 million.

Table 2.4 AFRL Sponsorship by Directorate

AFRL Directorates	
Sponsor	**Dollars($)**
AFOSR	$1,664,598
VA	$261,978
DE	$142,035
HE	$70,730
IF	$30,277
ML	$238,929
MN	$93,042
PR	$118,888
SN	$261,743
VS	$9,000
Total	**$2,891,220**

Figure 2.3: FY04 Funded Research



2.4 FACULTY FELLOWS

Amend, Joseph H. III, Associate Professor of Civil Engineering, Department of Systems Engineering and Management, Fellow of the American Society of Civil Engineers.

Bridgman, Charles J., Professor Emeritus of Nuclear Engineering, Department of Engineering Physics, Fellow of the American Nuclear Society.

D'Azzo, John J., Professor Emeritus of Electrical Engineering, Department of Electrical and Computer Engineering, Fellow of the Institute of Electrical and Electronic Engineers.

Elrod, William E., Professor Emeritus of Aerospace Engineering, Department of Aeronautics and Astronautics, Fellow of American Society of Mechanical Engineers International

Franke, Milton E., Professor of Aerospace Engineering, Department of Aeronautics and Astronautics, Fellow of the American Society of Mechanical Engineers International

Houpis, Constantine H., Professor Emeritus of Electrical Engineering, Department of Electrical and Computer Engineering, Fellow of the Institute of Electrical and Electronic Engineers.

Mall, Shankar, Professor, Department of Aeronautics and Astronautics, Fellow of the American Society of Mechanical Engineers International.

Maybeck, Peter S., Professor of Electrical Engineering, Department of Electrical and Computer Engineering, Fellow of the Institute of Electrical and Electronic Engineers.

Pachter, Meir, Professor of Electrical Engineering, Department of Electrical and Computer Engineering, Fellow of the Institute of Electrical and Electronic Engineers.

Palazotto, Anthony N., Professor of Aerospace Engineering, Department of Aeronautics and Astronautics, Fellow of the American Society of Civil Engineers.

Ruggles-Wrenn, Marina B., Associate Professor of Aerospace Engineering, Department of Aeronautics and Astronautics, Fellow of American Society of Mechanical Engineers International

Torvik, Peter J., Professor Emeritus of Aerospace Engineering and Engineering Mechanics, Department of Aeronautics and Astronautics, Fellow of the American Institute of Aeronautics and Astronautics, Fellow of American Society of Mechanical Engineers International.

2.5 PROFESSIONAL CERTIFICATION

Amend, Joseph H. III, Professional Engineer, State of Virginia

Anthenien, Ralph A., Professional Engineer, State of Ohio

Baldwin, Rusty O., Professional Engineer, State of Ohio

D'Azzo, John J., Professional Engineer, State of Ohio

England, Ellen C., Certified Industrial Hygienist, American Board of Industrial Hygiene, National Certification

England, Ellen C., Certified Safety Professional, Board of Certified Safety Professionals, National Certification

Goltz, Mark N., Hazardous Waste Management Specialty Certification as a Diplomat Environmental Engineer, American Academy of Environmental Engineers

Goltz, Mark N., Professional Engineer, State of Minnesota

Grimaila, Michael R., Security Essentials Certification, SysAdmin, Audit, Network, Security Institute's (SANS) Global Information Assurance Certification (GIAC) Program

Houpis, Constantine H., Professional Engineer, State of Ohio

Kunz, Donald L., Professional Engineer, Commonwealth of Virginia

Mullins, Barry E., Professional Engineer, State of Colorado

Palazotto, Anthony N., Professional Engineer, State of Ohio

Perram, Glen P., Professional Engineer, State of Ohio

Quinn, Dennis W., Professional Engineer, State of Ohio

Reeder, Mark F., Professional Engineer, State of Ohio

Spenny, Curtis H., Professional Engineer, State of Ohio

Tenney, Curtis G., Certified Housing Development Finance Professional, the Development Council

3. CONTRIBUTIONS TO THE AIR FORCE

3.1 DOCTORAL DISSERTATIONS

BREHM, THOMAS E. *Optimal Design of Generalized Multiple Model Adaptive Controllers.* AFIT/DS/ENG/04-01, Faculty Advisor: Dr. Peter S. Maybeck, DSN 785-3636 x4581. Sponsor: AFMC/AFRL/VACA.

CHAMPAGNE, LANCE E. *Development Approaches Coupled with Verification and Validation Methodologies for Agent-Based Mission-Level Analytical Combat Simulations.* AFIT/DS/ENS/03-02, Faculty Advisor: Dr. Raymond R. Hill, DSN 785-2549. Sponsor: DMSO.

COUTU, RONALD A. *Electrostatic Radio Frequency (RF) Microelectromechanical Systems (MEMS) Switches with Metal Alloy Electric Contacts.* AFIT/DS/ENG/04-05, Faculty Advisor: Capt Paul E. Kladitis, DSN 785-3636 x4595. Sponsor: AFRL/MLB.

COX, STEVEN M. *Hybrid Stochastic Models for Remaining Lifetime Prognosis.* AFIT/DS/ENS/04-01, Faculty Advisor: Dr. Jeffrey P. Kharoufeh, DSN 785-3636 x4603. Sponsor: AFRL/AFOSR.

DECKER, DOUGLAS D. *Decision Factors for Cooperative Multiple Warhead UAV Target Classification and Attack with Control Applications.* AFIT/DS/ENY/05-04, Faculty Advisor: Dr. David R. Jacques, DSN 785-3355 x3329. Sponsors: AFRL/MNGN and AFRL/VACA.

GISSELQUIST, DANIEL E. *A Linear Subspace Approach to Burst Communication Signal Processing.* AFIT/DS/ENG/04-02, Faculty Advisor: Col Donald R. Kitchen, DSN 785-2024. Sponsor: NASIC/DES.

MILLMAN, DANIEL R. *Quantifying Initial Condition and Parametric Uncertainties in a Nonlinear Aeroelastic System with an Efficient Stochastic Algorithm.* AFIT/DS/ENY/04-03, Faculty Advisor: Dr. Paul I. King, DSN 785-3636 x4314. Sponsor: AFRL/VASD.

MORRIS, DOUGLAS B. *A Predictive Technique for Forecasting the Isotopic Composition of Radioactive Fallout.* AFIT/DS/ENP/05-02, Faculty Advisor: Dr. Charles J. Bridgman, DSN 785-3636 x4679. Sponsor: DTRA Nuclear Programs Agency.

ORMSBY, CHARLES D. *Generalized Residual Multiple Model Adaptive Estimation of Parameters and States.* AFIT/DS/ENG/03-08, Faculty Advisor: Dr. John F. Raquet, DSN 785-3636 x4580. Sponsor: ESC/GAL.

PASCOE, KENNETH J. *Target Recognition Using Late Time Returns from Ultra-Wideband, Short-Pulse Radar.* AFIT/DS/ENG/04-04, Faculty Advisor: Dr. Michael J. Havrilla, DSN 785-3636 x4582. Sponsor: AFRL/DEHP.

PETERSON, BRIAN S. *Device Discovery in Frequency Hopping Wireless Ad Hoc Networks.* AFIT/DS/ENG/04-06, Faculty Advisor: Maj Rusty O. Baldwin, DSN 785-6565 x4445. Sponsor: National Security Agency.

SEO, JOHN S. *Analytical Solution for Low-Thrust Minimum Time Control of a Satellite Formation.* AFIT/DS/ENY/04-04, Faculty Advisor: Dr. William E. Wiesel, DSN 785-6565 x4312. Sponsor: AFRL/VSES.

SHIN, KISU. *Role of Plasticity on Fretting Fatigue Behavior of Ti-6Al-4V.* AFIT/DS/ENY/04-05, Faculty Advisor: Dr. Shankar Mall, DSN 785-3636 x4587. Sponsor: AFRL/AFOSR/NA.

SRIVER, TODD A. *Pattern Search Ranking and Selection Algorithms for Mixed-Variable Optimization of Stochastic Systems.* AFIT/DS/ENS/04-02, Faculty Advisor: Dr. James W. Chrissis, DSN 785-3636 x4606. Sponsor: AFRL/AFOSR.

SZMEREKOVSKY, ANDREW G. *The Physical Understanding of the Effects of Coatings on the Mitigation of Hypervelocity Gouging.* AFIT/DS/ENY/04-06, Faculty Advisor: Dr. Anthony Palazotto, DSN 785-3636 x4599. Sponsor: AFRL/AFOSR/NM.

WAGER, NICHOLAS. *A Rapidly-Converging Alternative to Source Iteration for Solving the Discrete Ordinates Radiation Transport Equations in Slab Geometry*. AFIT/DS/ENP/04-01, Faculty Advisor: Dr. Kirk A. Mathews, DSN 785-3636 x4508. Sponsor: AFTAC/TM.

3.2 MASTER'S THESES BY PROGRAM

[*Denotes Multiple Sponsors]

3.2.1 AERONAUTICAL ENGINEERING (GAE)

ALLEN, WILLIAM Y. *Fretting Fatigue Behavior of Shot-Peened Titanium Alloy Ti-AL-4V Under Seawater Conditions.* AFIT/GAE/ENY/04J-01, Faculty Advisor: Dr. Shankar Mall, DSN 785-3636 x4587. Sponsor: AFRL/MLLMN.

ARMSTRONG, JASON M. *Effect of Equivalence Ratio and G-Loading on IN-SITU Measurements of Chemiluminescence in an Ultra Compact Combustor.* AFIT/GAE/ENY/04M-01, Faculty Advisor: Capt Ralph Anthenien, DSN 785-3636 x4643. Sponsor: AFRL/AFOSR/NA.

BJORGE, SCOTT T. *Flow Around an Object Projected from a Cavity into a Supersonic Freestream.* AFIT/GAE/ENY/04M-02, Faculty Advisor: Dr. Mark F. Reeder, DSN 785-3636 x4530. Sponsor: AFRL/MN.

BLACKWELL, CHRISTOPHER M. *The Evaluation of the Damping Characteristics of a Hard Coating on Titanium.* AFIT/GAE/ENY/04M-03, Faculty Advisor: Dr. A. N. Palazotto, DSN 785-3636 x4599. Sponsor: AFRL/PRTS.

CALLAWAY, DAVID W. *Coplanar Air Launch with Gravity-Turn Launch Trajectories.* AFIT/GAE/ENY/04M-04, Faculty Advisor: Dr. William E. Wiesel, DSN 785-6565 x4312. Sponsor: AFRL/VACD.

CASEY, JOHN P. *Effect of Dimple Pattern on the Suppression of Boundary Layer Separation on a Low Pressure Turbine Blade.* AFIT/GAE/ENY/04M-05, Faculty Advisor: Dr. Paul I. King, DSN 785-3636 x4314. Sponsor: AFRL/PRTT.

COX, JONATHAN C. *Isomer Heat Exchanger Combustor Replacement for a Supersonic Ramjet Powered Vehicle.* AFIT/GAE/ENY/04J-02, Faculty Advisor: Dr. Paul I. King, DSN 785-3636 x4314. Sponsor: N/A.

DELUCA, ANTHONY M. *Experimental Investigation into the Aerodynamic Performance of Both Rigid and Flexible Wing Structured Micro-Air-Vehicles.* AFIT/GAE/ENY/04M-06, Faculty Advisor: Dr. Mark F. Reeder, DSN 785-3636 x4530. Sponsor: AFRL/MNAV.

EARP, BRIAN E. *Magnetogasdynamic Flow Control of a Mach Reflection.* AFIT/GAE/ENY/04M-07, Faculty Advisor: Maj Richard J. McMullan, DSN 785-3636 x4559. Sponsor: AFRL/VAAC.

HARRINGTON, BRIAN H. *Magnetogasdynamic Flow Acceleration in a Scramjet Nozzle.* AFIT/GAE/ENY/04J-03, Faculty Advisor: Maj Richard J. McMullan, DSN 785-3636 x4559. Sponsor: AFRL/AFOSR/NA.

HOLSTEIN, RAYMOND G. *Structural Design and Analysis of Rigidizable Space Shuttle Experiment.* AFIT/GAE/ENY/04M-08, Faculty Advisor: Dr. Anthony Palazotto, DSN 785-3636 x4599. Sponsor: NRO/IMINT/RNTS.

JARRETT, DAVID B. *Cold Flow Testing of a Modified Subscale Model Exhaust System for a Space Based Laser.* AFIT/GAE/ENY/04J-04, Faculty Advisor: Dr. Milton Franke, DSN 785-3636 x4720. Sponsor: AFRL/DEBS.

JUTTE, ANDREW J. *Effect of a Variable Normal Load on Fretting Fatigue Behavior of Ti-6AI-4V.* AFIT/GAE/ENY/04M-09, Faculty Advisor: Dr. Shankar Mall, DSN 785-3636 x4587. Sponsor: AFRL/PRTC.

KELLEHER, EDWARD A. *Study of a Skirtless Hovercraft Design.* AFIT/GAE/ENY/04J-05, Faculty Advisor: Dr. Milton Franke, DSN 785-3636 x4720. Sponsor: N/A.

KIM, KYONGSON S. *Controlling the Primary Mirror in a Space-Based Telescope Utilizing an Eigenstructure Assignment Technique.* AFIT/GAE/ENY/04M-10, Faculty Advisor: Maj Richard G. Cobb, DSN 785-3636 x4559. Sponsor: AFRL/VSSV.

LUTZ, BRIAN J. *Axisymmetric Optical Membrane Modeling Based on Experimental Results.* AFIT/GAE/ENY/04M-11, Faculty Advisor: Dr. Anthony N. Palazotto, DSN 785-3636 x4599. Sponsor: AFRL/DEBS.

MALONE, KYLE P. *Detached Eddy Simulation Analysis of Pak-B Low Pressure Turbine Blade.* AFIT/GAE/ENY/04J-06, Faculty Advisor: Dr. Paul I. King, DSN 785-3636 x4314. Sponsor: AFRL/PRTT.

MCMILLAN, ROBERT J. *Shock Tube Investigation of Pressure and Ion Sensors Used in Pulse Detonation Engine Research.* AFIT/GAE/ENY/04J-07, Faculty Advisor: Dr. Paul I. King, DSN 785-3636 x4314. Sponsor: AFRL/PRTC.

MILLER, GARY D. *Outside Loop Control in Asymmetrical Trimmed Flight Conditions.* AFIT/GAE/ENY/04M-12, Faculty Advisor: Dr. David R. Jacques, DSN 785-3355 x3329. Sponsor: USAF Test Pilot School.

ORTHNER, KARL *Aerodynamic Analysis of Lattice Grid Fins in Transonic Flow.* AFIT/GAE/ENY/04J-09, Faculty Advisor: Lt Col Raymond C. Maple, DSN 785-3636 x4577. Sponsor: AFRL/MN.

PANZENHAGEN, KRISTIN L. *Detonation Branching in a PDE with Liquid Hydrocarbon Fuel.* AFIT/GAE/ENY/04M-13, Faculty Advisor: Dr. Paul I. King, DSN 785-3636 x4628. Sponsor: AFRL/PRTC.

*RASMUSSEN, CODY C. *Optimization Process for Configuration of Flexible Joined-Wing.* AFIT/GAE/ENY/04M-14, Faculty Advisor: Lt Col Robert A. Canfield, DSN 785-3636 x4723. Sponsors: AFRL/AFOSR/NM and AFRL/VASD.

RAY, KENNETH L. *Fidelity Analysis of ATFS Series 400 G-FET II Motion-Based Flight Simulator.* AFIT/GA/ENY/04J-10, Faculty Advisor: Dr. Tamara L. Chelette, DSN 785-3069. Sponsor: N/A.

RENZI, MICHAEL J. *An Assessment of Modern Methods for Rotor Track and Balance.* AFIT/GAE/ENY/04J-11, Faculty Advisor: Dr. Donald L. Kunz, DSN 785-3636 x4548. Sponsor: US Army RDECOM, AMRDEC.

SITZ, JENNIFER J. *Aeroelastic Analysis of a Joined-Wing Sensorcraft.* AFIT/GAE/ENY/04J-12, Faculty Advisor: Lt Col Robert A. Canfield, DSN 785-3636 x4723. Sponsor: DAGSI.

VANDAWAKER, ROBERT M. *Experimental and Computational Analysis of Modes in a Partially Constrained Plate.* AFIT/GAE/ENY/04M-15, Faculty Advisor: Dr. Anthony N. Palazotto, DSN 785-3636 x4599. Sponsor: AFRL/VASA.

WITTE, JOEL B. *An Investigation Relating Longitudinal Pilot-Induced Oscillation Tendency Rating to Describing Function Predictions for Rate-Limited Actuators.* AFIT/GAE/ENY/04M-16, Faculty Advisor: Dr. Brad Liebst, DSN 785-3636 x4636. Sponsor: USAF Test Pilot School.

ZDENEK, JEFFREY S. *Ion Based Pressure Sensor for Pulse Detonation Engines.* AFIT/GAE/ENY/04M-17, Faculty Advisor: Dr. Ralph A. Anthenien, DSN 785-3636 x4643. Sponsor: AFRL/PRTS.

3.2.2 APPLIED MATHEMATICS (GAM)

FINKELSTEIN, DANIEL. *Analytical Results for a Single-Unit System Subject to Markovian Wear and Shocks.* AFIT/GAM/ENS/04-01, Faculty Advisor: Dr. Jeffrey P. Kharoufeh, DSN 785-3636 x4603. Sponsor: N/A.

3.2.3 APPLIED PHYSICS (GAP)

ANDERSON, KEITH A. *Derivation of a Self-Consistent Auroral Oval Model Using the Auroral Boundary Index.* AFIT/GAP/ENP/04-01, Faculty Advisor: Maj Devin J. Della-Rose, DSN 785-3636 x4514. Sponsor: Air Force Weather Agency, HQ AFWA/DNX.

CUMBLIDGE, KEVIN *Using Time-Resolved Photoluminescence to Measure the Excitation and Temperature Dependence of Carrier Relaxation in Mid-Wave Infrared Semiconductors.* AFIT/GAP/ENP/04-02, Faculty Advisor: Dr. Michael A. Marciniak, DSN 785-3636 x4529. Sponsor: AFRL/AFOSR/NE.

HOGUE, CHRISTOPHER M. *Comparative Study on the Use of Coherent Radar-Derived Electric Fields vs. Statistical Electric Fields for the Initialization of a High-Latitude Ionospheric Model.* AFIT/GAP/ENP/04-03, Faculty Advisor: Maj Clark E. Groves, DSN 785-3636 x4505. Sponsor: Det 11 SMC (CISF) Space Missile Command.

KINKELA, SHAUNA M. *Estimating Equatorial F-Region Daytime Vertical* $\vec{E} \times \vec{B}$ *Drift Velocities from Ground-Based Magnetometer Measurements in the Philippine Longitude Sector.* AFIT/GAP/ENP/04-04, Faculty Advisor: Maj Devin J. Della-Rose, DSN 785-3636 x4514. Sponsor: Air Force Weather Agency, HQ AFWA/DNX.

PHILLIPS, SCOTT C. *Optical Characterization and Modeling of Compositionally Matched Indium Arsenide-Antimonide Bulk and Multiple Quantum Well Semiconductors.* AFIT/GAP/ENP/04-05, Faculty Advisor: Dr. Robert L. Hengehold, DSN 785-3636 x4502. Sponsor: N/A.

3.2.4 ASTRONAUTICAL ENGINEERING (GA)

JOHNSON, BENJAMIN L. *Isomer Energy Source for Space Propulsion System.* AFIT/GA/ENY/04M-01, Faculty Advisor: Dr. Milton Franke, DSN 785-3636 x4720. Sponsor: AFRL/PRAS.

KIMSAL, MATTHEW B. *Design of a Space-Borne Autonomous Infrared Tracking System.* AFIT/GA/ENY/04M-02, Faculty Advisor: Maj Richard Cobb, DSN 785-6565 x4559. Sponsor: N/A.

MCNABB, DENNIS J. *Investigation of Atmospheric Reentry for the Space Maneuver Vehicle.* AFIT/GA/ENY/04M-03, Faculty Advisor: Dr. William E. Wiesel, DSN 785-6565 x4312. Sponsor: AFRL/VACD.

PRESS, MATTHEW J. *Geometric Approach to Orbital Formation Mission Design.* AFIT/GE/ENY/04M-04, Faculty Advisor: Dr. Steven G. Tragesser, DSN 785-3636 x4559. Sponsor: AFRL/VSES.

REIFSNYDER, AARON J. *Vibrometric Detection of Beam Damage Due to Inclusions.* AFIT/GA/ENY/04J-01, Faculty Advisor: Dr. Anthony Palazotto, DSN 785-3636 x4599. Sponsor: AFRL/VASM.

STRAIGHT, STANLEY D. *Maneuver Design for Fast Satellite Circumnavigation.* AFIT/GA/ENY/04M-05, Faculty Advisor: Dr. Steven G. Tragesser, DSN 785-3636 x4568. Sponsor: AFRL/VSES.

3.2.5 ACQUISITION MANAGEMENT (GAQ)

BELKO, MICHAEL E. *Government Venture Capital: A Case Study of the In-Q-Tel Model.* AFIT/GAQ/ENV/04M-01, Faculty Advisor: Lt Col Timothy S. Reed, DSN 785-2998. Sponsor: DOD/OSD/OFT (Office of Force Transformation).

BRONSON, TONYA J. *Active Duty Military Deployments: A Respite from Job Stressors and Burnout for Air Force Acquisition Support Personnel.* AFIT/GAQ/ENV/04M-02, Faculty Advisor: Maj Daniel T. Holt, DSN 785-3636 x4800. Sponsor: SAF/AQCA.

ETTRICH, KURT G. *Purchasing and Supply Chain Management Costing: An Air Transport Perspective Derived Through Commercial Air Cargo Firms.* AFIT/GAQ/ENV/04M-04, Faculty Advisor: Maj Michael A. Greiner, DSN 785-3636 x4588. Sponsor: N/A.

GAILLARD, DARIA J. *Investigating the Optimal Management Strategy for a Healthcare Facility Maintenance Program.* AFIT/GAQ/ENV/04M-05, Faculty Advisor: Lt Col Timothy Reed, DSN 785-2998. Sponsor: AFMC/SGA.

LACEY, FREDERICK J. *Performance Based Service Acquisition (PBSA): A Dynamic Look at PBSA in the Air Force.* AFIT/GAQ/ENV/04M-06, Faculty Advisor: Maj Michael A. Greiner, DSN 785-3636 x4588. Sponsor: HQ AFMC/PKV.

LEEDY, DOUGLAS E. *Small Business Participation in Air Force Procurement: Participation Trends and the Effect of Acquisition Reform Initiatives on Air Force Procurement via Selected Contract Types in Selected Product Categories.* AFIT/GAQ/ENV/04M-07, Faculty Advisor: Dr. Patricia G. Luna, DSN 785-2998. Sponsor: SAF/Air Force Small Business.

NOVAK, RYAN M. *Going to War with Defense Contractors: A Case Study Analysis of Battlefield Acquisition.* AFIT/GAQ/ENV/04M-08, Faculty Advisor: Lt Col Tim Reed, DSN 785- 2998. Sponsor: HQ AFMC/PK.

PETIT, CAREY E. *Development of Measures of Success for Corporate Level Air Force Acquisition Initiatives.* AFIT/GAQ/ENV/04M-09, Faculty Advisor: Col Rita Jordan, DSN 785-4372. Sponsor: SAF/ACE.

PIKE, WILLIAM C. *Measuring Small Business Participation in Air Force Contracting: The Impact of Acquisition Reform.* AFIT/GAQ/ENV/04M-10, Faculty Advisor: Dr. Patricia G. Luna, DSN 785-2998. Sponsor: SAF/Air Force Small Business.

STHULTZ, TREVOR T. *Military Deployments as a Respite from Burnout: An Analysis of Gender and Family.* AFIT/GAQ/ENV/04M-11, Faculty Advisor: Maj Daniel T. Holt, DSN 785-3636 x4800. Sponsor: SAF/AQCA.

WAGGONER, ELIZABETH A. *Keys to Successful Implementation and Sustainment of Managed Maintenance for Healthcare Facilities.* AFIT/GAQ/ENV/04M-12, Faculty Advisor: Lt Col Timothy S. Reed, DSN 785-2998. Sponsor: AFMC/SG.

WODOCHEK, JOHN. *Fair Opportunity within Federal Contracting: A Delphi Study of Justice.* AFIT/GAQ/ENV/04M-13, Faculty Advisor: Maj Daniel T. Holt, DSN 785-3636 x4800. Sponsor: N/A.

WOOD, CHRISTOPHER C. *Entrepreneurial Mindset in Department of Defense (DoD) Organizations: Antecedents and Outcomes.* AFIT/GAQ/ENV/04M-14, Faculty Advisor: Lt Col Timothy Reed, DSN 785-2998. Sponsor: DOD/OSD/OFT (Office of Force Transformation).

WOOD, SARAH E. *The Predictive Validity of the AFIT Graduate Management Program Admission Requirements: A Reassessment and Extension.* AFIT/GAQ/ENV/04M-03, Faculty Advisor: Maj Bryan J. Hudgens, DSN 785-3636 x4574. Sponsor: N/A.

3.2.6 COMPUTER ENGINEERING (GCE)

CORNER, JOSHUA J. *Swarming Reconnaissance Using Unmanned Aerial Vehicles in a Parallel Discrete Event Simulation.* AFIT/GCE/ENG/04-01, Faculty Advisor: Dr. Gary B. Lamont, DSN 785-3636 x4718. Sponsor: AFRL/IFTA.

KELLER, TRACI A. *Optimization of a Quantum Cascade Laser Operating in the Terahertz Frequency Range Using a Multiobjective Evolutionary Algorithm.* AFIT/GCE/ENG/04-03, Faculty Advisor: Dr. Gary B. Lamont, DSN 785-3636 x4718. Sponsor: AFRL/SN.

KLEEMAN, MARK P. *Optimization of Heterogeneous UAV Communications Using the Multiobjective Quadratic Assignment Problem.* AFIT/GCE/ENG/04-04, Faculty Advisor: Dr. Gary B. Lamont, DSN 785-3636 x4718. Sponsor: AFRL/IFTA.

LEE, WEN CHIAN. *Swarm Based Implementation of a Virtual Distributed Database System in a Sensor Network.* AFIT/GCE/ENG/04-06, Faculty Advisor: Dr. Gary B. Lamont, DSN 785-3636 x4718. Sponsor: AFRL/IFTA.

3.2.7 COMPUTER SYSTEMS (GCS)

BARTOLO, AUSTIN A. *Automated Agent Ontology Creation for Distributed Databases.* AFIT/GCS/EMG/04-01, Faculty Advisor: Dr. Gilbert L. Peterson, DSN 785-6565 x4281. Sponsor: AFRL/IFTC.

BIAS, DANNY R. *An Analysis of the Performance and Security of J2SDK 1.4 JSSE Implementation of SSL/TLS.* AFIT/GCS/ENG/04-02, Faculty Advisor: Dr. Richard A. Raines, DSN 785-6565 x4278. Sponsor: TD/C4 NSA.

BOGGS, JEFFREY A. *Geolocation of an Audio Source in a Multipath Environment Using Time-of-Arrival.* AFIT/GCS/ENG/04-03, Faculty Advisor: Maj Rusty O. Baldwin, DSN 785-6565 x4445. Sponsor: NSA/R5.

CARROLL, STEPHANIE E. *Improving TCP Performance by Estimating Errors in a Long Delay, High Error Rate Environment.* AFIT/GCS/ENG/04-04, Faculty Advisor: Dr. Rusty O. Baldwin, DSN 785-6565 x4445. Sponsor: Air Force Communications Agency.

CARSTEN, JAMES M. *Intelligent Query Answering through Rule Learning and Generalization.* AFIT/GCS/ENG/04-05, Faculty Advisor: Dr. Gilbert Peterson, DSN 785-6565 x4281. Sponsor: NASIC/IMINT.

CRUZ, CHARLIE I. *Netwars Based Study of a Joint Stars Link-16 Network.* AFIT/GCS/ENG/04-06, Faculty Advisor: Maj Rusty O. Baldwin, DSN 785-6565 x4445. Sponsor: AFCA/ITAI.

FOX, WENDELL E. *Visual Debugging of Object-Oriented Systems with the Unified Modeling Language.* AFIT/GCS/ENG/04-07, Faculty Advisor: Maj Robert P. Graham, DSN 785-3636 x4715. Sponsor: AFRL/AFOSR/NM.

HENSON, MICHAEL J. *Machine Learning Techniques for Characterizing IEEE 802.1 1B Encrypted Data Streams.* AFIT/GCS/ENG/04-08, Faculty Advisor: Maj Rusty O. Baldwin, DSN 785-3636 x4612. Sponsor: National Security Agency.

KUNTZELMAN, JAMES B. *Comparative Analysis of Active and Passive Mapping Techniques in an Internet-Base Local Area Network.* AFIT/GCS/ENG/04-09, Faculty Advisor: Dr. Richard A. Raines, DSN 785-6565 x4278. Sponsor: TD/C4 NSA.

*LAVIERS, KENNARD R. *Concurrent-Cognitive Mapping and Localization Using Expectation Maximization.* AFIT/GCS/ENG/04-10, Faculty Advisor: Dr. Gilbert L. Peterson, DSN 785-6565 x4281. Sponsors: AFRL/MNGN and AFRL/SNRP.

MANCINI, STEPHEN W. *Automating Security Protocol Analysis.* AFIT/GCS/ENG/04-12, Faculty Advisor: Maj Robert P. Graham, DSN 785-3636 x4715. Sponsor: NSA/I333.

MCBRIDE, BRENT T. *A Hyper-Geometric Data Classifier for Blind Detection of Novel Steganography.* AFIT/GCS/ENG/04-14, Faculty Advisor: Dr. Gilbert Peterson, DSN 785-6565 x4281. Sponsor: AFRL/IFEC.

MILAM, KEVIN M. *Evolution of Control Programs for a Swarm of Autonomous Unmanned Aerial Vehicles.* AFIT/GCS/ENG/04-15, Faculty Advisor: Dr. Gary B. Lamont, DSN 785-3636 x4718. Sponsor: AFRL/IFTA.

NEWBERRY, JAMES D. *Software Development Outsourcing Decision Support Tool with Neural Network Learning.* AFIT/GCS/ENG/04-16, Faculty Advisor: Lt Col Brian G. Hermann, DSN 785-7777 x3131. Sponsor: N/A.

SORGAARD, DUANE C. *Geographic Location of a Computer Node Examining a Time-to-Location Algorithm and Multiple Autonomous System Networks.* AFIT/GCS/ENG/04-17, Faculty Advisor: Maj Rusty Baldwin, DSN 785-6565 x4445. Sponsor: NSA/R5.

SPLIETHOF, BRIAN L. *Enhancing Image Retrieval Using Forward Feedback, Term Co-Occurrence and Natural Segmentation on a Semi-Static Image Collection.* AFIT/GCS/ENG/04-18, Faculty Advisor: Lt Col Michael Talbert, DSN 785-3636 x4716. Sponsor: NASIC/DEIT.

SWAYNE, DANIEL E. *Visual Unified Modeling Language for the Composition of Scenarios in Modeling and Simulation Systems.* AFIT/GCE/ENG/04-19, Faculty Advisor: Lt Col Michael Talbert, DSN 785-3636 x4716. Sponsor: Defense Modeling and Simulation Office, DMSO.

TAYLOR, STEVEN J. *Throughput Performance Evaluation and Analysis of Unmodified Bluetooth Devices.* AFIT/GCS/ENG/04-20, Faculty Advisor: Dr. Richard A. Raines, DSN 785-6565 x4278. Sponsor: AFIWC.

TURNBAUGH, EUGENE D. *Geographically Locating an Internet Node Using Network Latency Measurement.* AFIT/GCS/ENG/04-21, Faculty Advisor: Maj Rusty O. Baldwin, DSN 785-6565 x4445. Sponsor: NSA/R5.

WATTS, NEAL A. *Packet Analysis of Unmodified Bluetooth Communication Devices.* AFIT/GCS/ENG/04-22, Faculty Advisor: Dr. Richard A. Raines, DSN 785-6565 x4278. Sponsor: NSA/R5.

3.2.8 COST ANALYSIS (GCA)

ABATE, CHRISTOPHER C. *An Analysis of Mission Systems Cost Growth and Implementation of Acquisition Reform Initiatives Using a Hybrid Adjusted Cost Growth Model.* AFIT/GCA/ENV/04M-01, Faculty Advisor: Maj Michael A. Greiner, DSN 785-3636 x4588. Sponsor: OSD/PA&E.

DEREUS, DARRIN L. *Comparative Analysis on the Cost of Oversight for the New National Security Space Acquisition Policy-A Delphi Method Approach.* AFIT/GCA/ENV/04M-02, Faculty Advisor: Maj Michael A. Griener, DSN 785-3636 x4588. Sponsor: DAU School of Program Management (DOD/OSD/AT&L/DAU/PM).

GENEST, DANIEL C. *Logistic and Multiple Regression: The Two-Step Approach to Estimating Cost Growth.* AFIT/GCA/ENC/04-01, Faculty Advisor: Dr. Edward D. White, DSN 785-3636 x4540. Sponsor: AFMC/ASC/FMCE.

HAWKINS, JOHN C. *Analysis and Forecasting of Army Operating and Support Cost for Rotary Aircraft.* AFIT/GCA/ENV/04M-03, Faculty Advisor: Maj Michael A. Greiner, DSN 785-6565 x4588. Sponsor: OSD/PA&E.

KUDERIK, DIANE I. *Establishing a Framework for the Oversight of Major Defense Acquisition Programs-A Historical Analysis.* AFIT/GCA/ENV/04M-04, Faculty Advisor: Maj Michael A. Greiner, DSN 785-3636 x4588. Sponsor: DAU School of Program Management (DOD/OSD/AT&L/DAU/PM).

LAUBACHER, MATTHEW E. *Analysis and Forecasting of Air Force Operating and Support Cost for Rotary Aircraft.* AFIT/GCA/ENV/04M-05, Faculty Advisor: Maj Michael A. Greiner, DSN 785-3636 x4588. Sponsor: OSD/PA&E.

LUCAS, BRANDON M. *Creating Cost Growth Models for the Engineering and Manufacturing Development Phase of Acquisition Using Logistic and Multiple Regression.* AFIT/GCA/ENC/04-02, Faculty Advisor: Dr. Edward D. White, DSN 785-3636 x4540. Sponsor: AFMC/ASC/FMCE.

MARTIN, KYLE R. *A Cost Analysis of the Military Retirement System.* AFIT/GCA/ENV/04M-06, Faculty Advisor: Maj Michael A. Greiner, DSN 785-3636 x4588. Sponsor: OSD/PA&E.

MCDANIEL, CHRISTOPHER J. *Estimating Cost Growth in Engineering and Schedule Cost Categories Using a Two-Pronged Regression Approach.* AFIT/GCA/ENC/04-03, Faculty Advisor: Dr. Edward D. White, DSN 785-3636 x4540. Sponsor: AFMC/ASC/FMCE.

NEAL, MONROE. *Establishing a Foundation to Capture the Cost of Oversight for a Major Defense Program within the Information Technology (IT) Acquisition Community.* AFIT/GCA/ENV/04M-07, Faculty Advisor: Maj Michael A. Greiner, DSN 785-3636 x4588. Sponsor: DAU School of Program Management (DOD/OSD/AT&L/DAU/PM).

PHILLIPS, RICHARD A. *An Analysis of Aircraft Weapon Systems Cost Growth and Implementation of Acquisition Reform Initiatives Using a Hybrid Adjusted Cost Growth Model.* AFIT/GCA/ENV/04M-08, Faculty Advisor: Maj Michael A. Greiner, DSN 785-3636 x4588. Sponsor: OSD/PA&E.

ROSSETTI, MATTHEW B. *Logistic and Multiple Regression: A Two-Pronged Approach to Accurately Estimate Cost Growth in Major DoD Weapon Systems.* AFIT/GCA/ENC/04-04, Faculty Advisor: Dr. Edward D. White, DSN 785-3636 x4540. Sponsor: AFMC/ASC/FMCE.

ROUSSEAU, GARY P. *A Comparative Analysis of the Cost of Oversight of Major Defense Acquisition Programs Strictly Under the Direction of the Department of Defense 5000 Series of Instructions.* AFIT/GCA/ENV/04M-09, Faculty Advisor: Maj Michael A. Greiner, DSN 785-3636 x4588. Sponsor: DAU/School of Program Management (DOD/OSD/AT&L/DAU).

SKIBO, STEPHANIE M. *An Analysis of Generational Differences Among Active Duty Members.* AFIT/GCQ/ENV/04M-10, Faculty Advisor: Maj Daniel Holt, DSN 785-3636 x4800. Sponsor: N/A.

WILKES, CHRISTOPHER J. *Analysis and Forecasting of US Navy Operating and Support (O&S) Costs for Rotary Aircraft.* AFIT/GCA/ENV/04M-11, Faculty Advisor: Maj Michael A. Greiner, DSN 785-3636 x4588. Sponsor: OSD/PA&E.

WILLIAMS, STACEY L. *An Analysis of Generational Differences Among Civil Servants.* AFIT/GCA/ENV/04M-12, Faculty Advisor: Maj Daniel Holt, DSN 785-3636 x4800. Sponsor: N/A.

3.2.9 ELECTRICAL ENGINEERING (GE)

BOSS, NOAH C. *Development of an Inertial Measurement Unit (IMU) Emulator for Hardware-in-the-Loop Testing of Integrated Navigation Systems.* AFIT/GE/ENG/03-22, Faculty Advisor: Dr. John F. Raquet, DSN 785-3636 x4580. Sponsor: AFRL/SNRP.

BROOKS, MATTHEW R. *Atmospheric Simulation Using a Liquid Crystal Wavefront Controlling Device.* AFIT/GE/ENG/04-01, Faculty Advisor: Maj Matthew E. Goda, DSN 785-2024. Sponsor: AFRL/SNJT.

CALDWELL, JAMES T. *Forward Looking Radar: Interference Modeling, Characterization, and Suppression.* AFIT/GE/ENG/04-02, Faculty Advisor: Maj Todd B. Hale, DSN 785-3636 x4639. Sponsor: AFRL/SNR.

CLABAUGH, DONALD J. *Characterization of Ultra Wide Band Multiple Access Performance Using Time Hopped-Biorthogonal Pulse Position Modulation.* AFIT/GE/ENG/04-03, Faculty Advisor: Dr. Michael A. Temple, DSN 785-6565 x4279. Sponsor: AFRL/SNRW.

COBB, WILLIAM E. *Non-Cooperative (Passive) Synchronization with a Bluetooth Piconet.* AFIT/GE/ENG/04-04, Faculty Advisor: Maj Rusty O. Baldwin, DSN 785-6565 x4445. Sponsor: USAF.

DEARINGER, ANTHONY J. *Simulating a Chromotomographic Sensor for Hyperspectral Imaging in the Infrared.* AFIT/GE/ENG/04-05, Faculty Advisor: Maj Mathew E. Goda, DSN 785-2024. Sponsor: NASIC/DEMS.

DIAZ, RICARDO A. *Target Recognition Using Linear Classification of High Range Resolution Radar Profiles.* AFIT/GE/ENG/04-06, Faculty Advisor: Dr. Steven C. Gustafson, DSN 785-3636 x4598. Sponsor: AFRL/SNAT.

DOSTAL, JONATHAN L. *Feature Selection in Wavelet Steganography.* AFIT/GE/ENG/04-07, Faculty Advisor: Dr. Steven C. Gustafson, DSN 785-3636 x4598. Sponsor: AFRL/IFEC.

EGGERT, RYAN J. *Evaluating the Navigation Potential of the National Television System Committee Broadcast Signal.* AFIT/GE/ENG/04-08, Faculty Advisor: Dr. John F. Raquet, DSN 785-3636 x4580. Sponsor: AFRL/MNGI.

EYSTER, MATTHEW D. *Discovering the Merit of the Wavelet Transform for Object Classification.* AFIT/GE/ENG/04-09, Faculty Advisor: Lt Col Michael L. Talbert, DSN 785-3636 x4716. Sponsor: AFRL/IFTA.

GLEN, MATTHEW G. *Multiple Access Interference Characterization for Direct-Sequence Spread-Spectrum Communications Using Chip Waveform Shaping.* AFIT/GE/ENG/04-10, Faculty Advisor: Dr. Michael A. Temple, DSN 785-6565 x4279. Sponsor: AFRL/IFGD.

GREEN, JOSHUA D. *Implementing Institute of Electrical and Electronics Engineers (IEEE) 802.11 Standard Medium Access Control Protocol for Wireless Local Area Networks (LANS) on a Laboratory Hardware Prototype.* AFIT/GE/ENG/04-11, Faculty Advisor: Dr. Rusty O. Baldwin, DSN 785-6565 x4445. Sponsor: National Security Agency.

GUSTKE, KEVIN C. *Reconstruction Algorithm Characterization and Performance Monitoring in Limited-Angle Chromotomography.* AFIT/GE/ENG/04-12, Faculty Advisor: Dr. Stephen C. Cain, DSN 785-3636 x4625. Sponsor: NASIC/DEMS.

GUTIERREZ, JOSE R. *Multipath and GPS Signal Jamming Mitigation through Multiple Model Adaptive Estimation Applied to Ultra-Tightly Couple GPS/INS Architecture.* AFIT/GE/ENG/04-14, Faculty Advisor: Dr. Peter S. Maybeck, DSN 785-3636 x4581. Sponsor: AFRL/MNGN.

HUNT, TERENCE D. *Super-Resolution Using Adaptive Gaussian Radial Basis Function Interpolation.* AFIT/GE/ENG/04-15, Faculty Advisor: Dr. Steven C. Gustafson, DSN 785-3636 x4598. Sponsor: AFTAC/LSC.

MARSH, ERIC D. *Thin Film Encapsulation of Radio Frequency (RF) Microelectromechanical Systems (MEMS) Switches.* AFIT/GE/ENG/04-16, Faculty Advisor: Capt Paul E. Kladitis, DSN 785-3636 x4595. Sponsor: AFRL/SNDD.

MOODY, DAVID C. *Microprocessor-Based Systems Control for the Rigidized Inflatable Get-Away-Special Experiment.* AFIT/GE/ENG/04-17, Faculty Advisor: Dr. Richard A. Raines, DSN 785-6565 x4278. Sponsor: NRO/IMINT/RNTS.

*MORRIS, THOMAS A. *Analysis of Uncertainties in Infrared Camera Measurements of a Turbofan Engine in an Altitude Test Cell.* AFIT/GE/ENP/04-01, Faculty Advisor: Dr. Michael A. Marciniak, DSN 785-3636 x4529. Sponsors: AFRL/SNS and GE Aircraft Engines.

MUEND, PETER E. *Cross Range Smear Characterization in Xpatch ISAR Images.* AFIT/GE/ENG-04-18, Faculty Advisor: Maj Todd Hale, DSN 785-2024. Sponsor: AFRL/ SNAS.

NEU, JONATHAN M. *A Tightly-Coupled INS/GPS Integration Using a MEMS IMU.* AFIT/GE/ENG/04-19, Faculty Advisor: Dr. John F. Raquet, DSN 785-3636 x4580. Sponsor: AFRL/HEPA.

NUNEZ, ABEL S. *Interference Suppression in Multiple Access Communications Using M-ARY Phase Shift Keying Generated via Spectral Encoding.* AFIT/GE/ENG/04-20, Faculty Advisor: Dr. Michael Temple, DSN 785-6565 x4279. Sponsor: AFRL/SNRW.

POWERS, DONALD W. *Characterization of the Target-Mount Interaction in Radar Cross Section Measurement Calibrations.* AFIT/GE/ENG/04-21, Faculty Advisor: Dr. Michael J. Havrilla, DSN 785-3636 x4582. Sponsor: AFRL/SNS.

SATTLER, JAMES M. *An Analysis of the Effects of Low Energy Electron Radiation on $Al_xGa_{1-x}N/GaN$ Modulation-Doped Field-Effect Transistors.* AFIT/GE/ENP/04-02, Faculty Advisor: LTC James C. Petrosky, DSN 785-6565 x4600. Sponsor: DTRA/CSNP.

SMITH, BRYAN E. *Enhancing the Instantaneous Dynamic Range of Electronic Warfare Receivers Using Statistical Signal Processing.* AFIT/GE/ENG/04-22, Faculty Advisor: Dr. Meir Pachter, DSN 785-6565 x4280. Sponsor: AFRL/SNRP.

SZABO, FRANCIS R. *Demonstrating Optothermal Actuators for an Autonomous MEMS Microrobot.* AFIT/GE/ENG/04-23, Faculty Advisor: Capt Paul E. Kladitis, DSN 785-3636 x4595. Sponsor: AFRL/MNAV.

TOBIN, SCOTT D. *Establishing a Cyber Warrior Force.* AFIT/GE/ENG/04-27, Faculty Advisor: Dr. Richard A. Raines, DSN 785-6565 x4278. Sponsor: AF-CIO/PO.

WATKINS, JOHN R. *Utilizing Near-Field Measurements to Characterize Far-Field Radar Signatures.* AFIT/GE/ENG/04-24, Faculty Advisor: Maj Todd B. Hale, DSN 785-3636 x4639. Sponsor: AFMC/ASC/YFAAE.

WRUCK, DEAN E. *GPS M-Code Signal Modeling for Radar Receiver Characterization.* AFIT/GE/ENG/04-25, Faculty Advisor: Dr. Michael A. Temple, DSN 785-6565 x4279. Sponsor: SMC/CZE.

3.2.10 ELECTRO-OPTICS (GEO)

ABEL, NATHAN J. *Effects of Aberrations on Optical Cross Section Measurements.* AFIT/GEO/ENP/04-01, Faculty Advisor: Dr. Michael A. Marciniak, DSN 785-3636 x4529. Sponsor: AFRL/MLPJ.

DOREY, SEAN P. *Stepped Waveguide Electromagnetic Material Characterization Technique.* AFIT/GEO/ENG/04-01, Faculty Advisor: Dr. Michael J. Havrilla, DSN 785-3636 x4582. Sponsor: AFRL/SNS.

JOHNSON, PETER M. *Deviation of Time-Resolved Luminescence Dynamics in MWIR Semiconductor Materials from Carrier Recombination Theory Predictions.* AFIT/GEO/ENP/04-02, Faculty Advisor: Dr. Michael A. Marciniak, DSN 785-3636 x4529. Sponsor: AFRL/AFOSR/NE.

3.2.11 ENGINEERING MANAGEMENT (GEM)

BEVERLY, MATTHEW H. *Cross-Service Investigation of Geographical Information Systems.* AFIT/GEM/ENV/04M-01, Faculty Advisor: Dr. Alan R. Heminger, DSN 785-3636 x4797. Sponsor: HQ USAFA/DFEI.

BLANCHETTE, CHRISTOPHER J. *A Decision Support Tool for Thrift Savings Plan Investors.* AFIT/GEM/ENV/04M-02, Faculty Advisor: Lt Col Alfred E. Thal, Jr., DSN 785-3636 x4798. Sponsor: N/A.

BONDURANT, CHAD. *Characterization of Microbial Processes that Degrade Chlorinated Solvents in a Constructed Wetland Using Organic Acid and Inorganic Anion Concentration Profiles.* AFIT/GEM/ENV/04M-03, Faculty Advisor: Dr. Michael Shelley, DSN 785-3636 x4594. Sponsor: AFRL/MLQ.

BRAZIEL, CARLOS. *Using Value-Focused Thinking to Evaluate the Effectiveness of Air Force Utility Privatization.* AFIT/GEM/ENV/04M-04, Faculty Advisor: Lt Col Alfred E. Thal, Jr., DSN 785-3636 x4798. Sponsor: HQ Air Force Civil Engineering Support Agency.

*CHOSA, PETER G. *Modeling a Field Application of In Situ Bioremediation of Perchlorate-Contaminated Groundwater Using Horizontal Flow Treatment Wells (HFTWs).* AFIT/GEM/ENV/04M-05, Faculty Advisor: Dr. Mark N. Goltz, DSN 785-3636 x4638. Sponsors: AFCEE/ERS and DoD/OSD/ESTCP.

CLEWETT, ANDREW C. *A Study of Information Exchange Between United States Air Force Bases and Their Surrounding Communities.* AFIT/GEM/ENV/04M-06, Faculty Advisor: Dr. Alan R. Heminger, DSN 785-3636 x4797. Sponsor: USAF/ILE-I.

COSTELLO, JOHN F. *Developing Team Cohesion: A Quasi-Field Experiment.* AFIT/GEM/ENV/04M-07, Faculty Advisor: Maj Daniel T. Holt, DSN 785-3636 x4800.Sponsor: N/A

DOREY, ELLEN L. *Recovering from a Stalled Change Initiative: A Case of Correcting Implementation Mistakes.* AFIT/GEM/ENV/04M-08, Faculty Advisor: Maj Daniel T. Holt, DSN 785-3636 x4800. Sponsor: Det 3, WRALC.

DUKE, JAMES S. *Decision Analysis Using Value Focused Thinking to Select Renewable Energy Source.* AFIT/GEM/ENV/04M-09, Faculty Advisor: Lt Col Ellen C. England, DSN 785-3636 x4711. Sponsor: AFCESA/CESM.

DUNCAN, JUSTIN H. *The Application of Value Focused Thinking to Utilities Privatization Source Selection.* AFIT/GEM/ENV/04M-10, Faculty Advisor: Lt Col Alfred E. Thal, DSN 785-3636 x4798. Sponsor: AFCESA.

KULICK, JENNIFER C. *An Unfolding Model of Voluntary Turnover of Air Force Reservists and Air National Guard Members.* AFIT/GEM/ENV/04M-11, Faculty Advisor: Maj Daniel T. Holt, DSN 785-3636 x4800. Sponsor: N/A.

LIGDAY, JOSHUA C. *Evaluation of Current Automated Civil Engineer System Non-Appropriated Funds Project Programming Procedures.* AFIT/GEM/ENV/04M-12, Faculty Advisor: Lt Col Alfred E. Thal, Jr. DSN 785-3636 x4798. Sponsor: HQ AFMC/CEPD.

MARES, KEVIN A. *Aerobic Biodegradation of Alternative Fuel Oxygenates in Unsaturated Soil Columns.* AFIT/GEM/ENV04M-13, Faculty Advisor: Dr. Charles A. Bleckmann, DSN 785-3636 x4721. Sponsor: National Risk Management Research Laboratory.

MAYER, GREGORY C. *Modeling Science Technology Selection Using Value Focused Thinking.* AFIT/GEM/ENS/04-01, Faculty Advisor: Maj Jeffrey D. Weir, DSN 785-3636 x4538. Sponsor: AFRL/HEC.

MORGAN, BENJAMIN J. *An Evaluation of Vegetated Roofing Technology: Application at Air Force Plant Four, Building 15.* AFIT/GEM/ENV/04M-14, Faculty Advisor: Lt Col Ellen C. England, DSN 785-3636 x4711. Sponsor: ASC/ENVV.

RUFE, PRESTON F. *Application of Horizontal Flow Treatment Wells for In Situ Treatment of MTBE-Contaminated Groundwater.* AFIT/GEM/ENV/04M-15, Faculty Advisor: Dr. Mark N. Goltz, DSN 785-3636 x4638. Sponsor: AFCEE/ERT.

SCHANDING, GREGORY T. *A Value Focused Thinking Model for the Development and Section of Electrical Energy Source Alternatives at Military Installations.* AFIT/GEM/ENS/04M-02, Faculty Advisor: Maj Jeffery D. Weir, DSN 785-3636 x4538. Sponsor: Pacific Northwest National Laboratory.

SITZABEE, WILLIAM E. *Policy Analysis of Chapter 101A Readiness and Range Preservation, of the National Defense Authorization Act for Fiscal Year 2004.* AFIT/GEM/ENV/04M-16, Faculty Advisor: Dr. Charles A. Bleckmann, DSN 785-3636 x4721. Sponsor: HQ ANG/CEVP.

SOBOLEWSKI, TERESA A. *Characterization of Chlorinated Solvent Degradation Profile Due to Microbial and Chemical Processes in a Constructed Wetland.* AFIT/GEM/ENV/04M-17, Faculty Advisor: Dr. Michael L. Shelley, DSN 785-3636 x4594. Sponsor: AFRL/MLQ.

STAUDINGER, TIFFANY J. *Comparative Analysis of Water Vulnerability Assessment Methodologies.* AFIT/GEM/ENV/04M-18, Faculty Advisor: Lt Col Ellen England, DSN 785-3636 x4711. Sponsor: AFIOH/RSE.

STEVENS, MARK R. *An Evaluation of Formic Acid as an Electron Donor for Palladium (Pd) Catalyzed Destruction of Nitroaromatic Compounds.* AFIT/GEM/ENV/04M-19, Faculty Advisor: Dr. Mark N. Goltz, DSN 785-3636 x4638. Sponsor: AFCEE/ERS.

WARNKE, DAVID M. *Making the Business Case for Sustainable Design in the Department of Defense.* AFIT/GEM/ENV/04M-20, Faculty Advisor: Dr. Charles A. Bleckmann, DSN 785-3636 x4721. Sponsor: AFCEE.

WELLING, MATTHEW D. *An Evaluation of Formate as an Electron Donor to Facilitate Palladium (Pd) - Catalyzed Destruction of Chlorinated Aliphatic Hydrocarbons.* AFIT/GEM/ENV/04M-21, Faculty Advisor: Dr. Mark Goltz, DSN 785-3636 x4638. Sponsor: HQ AFCEE/ERS.

3.2.12 INFORMATION RESOURCE/SYSTEMS MANAGEMENT (GIR)

ANGERMAN, WILLIAM S. *Coming Full Circle with Boyd's OODA Loop Ideas: An Analysis of Innovation Diffusion and Evolution.* AFIT/GIR/ENV/04M-01, Faculty Advisor: Lt Col Summer E. Bartczak, DSN 785-3636 x4826. Sponsor: N/A.

BALDA, DAVID A. *A Descriptive Case Study of Electronic Records Taxonomy Development at the Central Intelligence Agency (CIA).* AFIT/GIR/ENV/04M-02, Faculty Advisor: Lt Col Summer E. Bartczak, DSN 785-3636 x4826. Sponsor: HQ AFCA/ITCR.

BECK, GRACE M. *An Analysis of the Air Force Basic Communications Officer Training Course: The Impact of Trainee and Organization Characteristics on Training Effectiveness.* AFIT/GIR/ENV/04M-03, Faculty Advisor: Col Rita A. Jordan, DSN 785-4372. Sponsor: HQ USAF/ILC.

COLE, PAMELA J. *The United States Marine Corps Data Collaboration Requirements: Retrieving and Integrating Data From Multiple Databases.* AFIT/GIR/ENV/04M-04, Faculty Advisor: Dr. Alan R. Heminger, DSN 785-3636 x4797. Sponsor: HQMC C4 CPIA.

COTTRELL, DONNA L. *An Analysis of Coast Guard HH-65 Engine Reliability: A Comparison of Malfunctions to Component Removals.* AFIT/GIR/ENC/04-01, Faculty Advisor: Dr. Edward White, III, DSN 785-3636 x4540. Sponsor: U.S. Coast Guard.

EARNHARDT, CHRISTOPHER C. *Cross-Sectional Study on the Factors that Influence E-Learning Course Completion Rates.* AFIT/GIR/ENV/04M-05, Faculty Advisor: Dr. Paul W. Thurston, Jr. DSN 785-7777 x3276. Sponsor: N/A.

FITZGERALD, DAVID C. *An Exploratory Analysis of Factors Affecting Participation in Air Force Knowledge Now Communities of Practice.* AFIT/GIR/ENV/04M-06, Faculty Advisor: Dr. Alan R. Heminger, DSN 785-3636 x4797. Sponsor: HQ AFMC DRW.

FORD, CHRISTOPHER L. *Determination of the Trainability of Deception Detection Cues.* AFIT/GIR/ENV/04M-07, Faculty Advisor: Lt Col David P. Biros, DSN 785-2998. Sponsor: AFRL/AFOSR/NM.

HAMILTON, BRIAN K. *Empowering Marine Corps System Administrators: Taxonomy of Training.* AFIT/GIR/ENV/04M-09, Faculty Advisor: Dr. Alan R. Heminger, DSN 785-3636 x4797. Sponsor: HQMC/C4.

HASS, MICHAEL C. *Group Performance in Military Scenarios Under Deceptive Conditions.* AFIT/GIR/ENV/04M-10, Faculty Advisor: Lt Col David P. Biros, DSN 785-2998. Sponsor: AFRL/AFOSR/NM.

HINRICHSEN, PETER L. *An Exploration of Cultural Factors Affecting Use of Communities of Practice.* AFIT/GIR/ENV/04M-11, Faculty Advisor: Dr. Alan R. Heminger, DSN 785-3636 x4797. Sponsor: HQ AFMC/DRW.

JOHNSON, IRENE C. *Overcoming Resistance to Change: An Analysis to the Department of Defense's Anthrax Vaccine Immunization Program.* AFIT/GIR/ENV/04J-12, Faculty Advisor: Maj Daniel T. Holt, DSN 785-3636 x4800. Sponsor: HQMC C4 CP/IA, Marine Corps.

KING, MARY M. *An Investigation of the Role of Influence Behaviors in Information System Implementation: A Case Study of the Air Force Institute of Technology School of Engineering and Management Student Academic Support System.* AFIT/GIR/ENV/04M-13, Faculty Advisor: Lt Col Summer E. Bartczak, DSN 785-3636 x4826. Sponsor: N/A.

KUBINSKY, JOSEPH S. *Securing the Air Force Network: Issues Concerning Time Compliant Network Order (TCNO) Deployment.* AFIT/GIR/ENV/04M-14, Faculty Advisor: Dr. Alan R. Heminger, DSN 785-3636 x4797. Sponsor: USAF/CIO.

LOPEZ, JUAN *An Analysis of Electromagnetic Interference (EMI) of Ultra Wideband (UWB) and IEEE 802.1 A Wireless Local Area Network (WLAN) Employing Orthogonal Frequency Division Multiplexing (OFDM).* AFIT/GIR/ENG/04-01, Faculty Advisor: Dr. Richard A. Raines, DSN 785-6565 x4278. Sponsor: AFRL/SN.

MATHEWS, EDWARD A. *A Study of Course Design Factors that Influence E-Learning Course Completion Rates.* AFIT/GIR/ENV/04M-15, Faculty Advisor: Maj Paul W. Thurston, DSN 785-7777 x3276. Sponsor: N/A.

OLIVER, MARIO L. *Investigation of Geobase Implementation Issues: Case Study of Information Resource Management.* AFIT/GIR/ENV/04M-16, Faculty Advisor: Lt Col Summer E. Bartczak, DSN 785-3636 x4826. Sponsors: HAF/GIO.

ORLOVSKY, JAMES R. *An Update on Analyzing Differences Between Public and Private Sector Information Resource Management: Strategic Information Challenges and Critical Technologies.* AFIT/GIR/ENV/04M-17, Faculty Advisor: Dr. Alan R. Heminger, DSN 785-3636 x4797. Sponsor: N/A.

RODRIGUEZ, JAIME A. *Exploring Content Management Issues in Air Force On-Line Communities of Practice: A Multiple Case Study Approach.* AFIT/GIR/ENV/04M-18, Faculty Advisor: Lt Col Summer E. Bartczak, DSN 785-3636 x4826. Sponsor: AFMC/DRWD.

SAKAMOTO, JACHIN. *An Experimental Investigation of Productivity Stratification & Knowledge Transfer in an Electronically Mediated Environment.* AFIT/GIR/ENV/04M-19, Faculty Advisor: Lt Col David Biros, DSN 785-2998. Sponsor: AFRL/AFOSR/NM.

SASSER, DAVID P. *Identifying the Benefits of Knowledge Management in the Department of Defense: A Delphi Study.* AFIT/GIR/ENV/04M-20, Faculty Advisor: Lt Col Summer E. Bartczak, DSN 785-3636 x4826. Sponsor: OSD/NII.

SCHUG, TODD S. *Organization to Exploit the Information Domain: A Content Analysis of the Transformation Literature.* AFIT/GIR/ENV/04M-21, Faculty Advisor: Lt Col Summer Bartczak, DSN 785-3636 x4826. Sponsor: DOD/OSD/OFT (Office of Force Transformation).

SCOTT, KELVIN B. *An Analysis of Factors that have Influenced the Evolution of Information Assurance from World War I through Vietnam to the Present.* AFIT/GIR/ENV/04M-22, Faculty Advisor: Dr. Alan R. Heminger, DSN 785-3636 x4797. Sponsor: HQMC, C4.

3.2.13 LOGISTICS MANAGEMENT (GLM)

ACOSTA VOEGELI, GERARDO H. *Extending the Aircraft Availability Model to a Constrained Depot Environment Using Activity-Based Costing and the Theory of Constraints.* AFIT/GLM/ENS/04-01, Faculty Advisor: Lt Col Stephen M. Swartz, DSN 785-3636 x4575. Sponsor: N/A.

EBERLAN, JON A. *Location Optimization of Continental United States Strip Alert Sites Supporting Homeland Defense.* AFIT/GLM/ENS/04-02, Faculty Advisor: Dr. William A. Cunningham, III, DSN 785-6565 x4283. Sponsor: SAF/IEB.

GEHRICH, DAVID L. *Benefits from Funding the MSD Engineering List: A Fiscal Year 1999 Case Study.* AFIT/GLM/ENS/04-03, Faculty Advisor: Maj Bradley E. Anderson, DSN 785-3636 x4646. Sponsor: AFMC/LGIF.

GRAY, STEPHEN D. *Mitigating Growth Cost for Mobility Readiness Spares Packages.* AFIT/GLM/ENS/04-04, Faculty Advisor: Maj Bradley E. Anderson, DSN 785-3636 x4646. Sponsor: AFMC/LGI.

HOLLAND, PATRICK S. *Comparative Functional Analysis of Air Force and Commercially Available Transportation Information Management Systems.* AFIT/GLM/ENS/04-05, Faculty Advisor: Maj Kirk A. Patterson, DSN 785-3636 x4653. Sponsor: HQ USAF/ILGX.

HUSCROFT, JOSEPH R. *A Demand Side Requirements Model to Forecast C-17 Mobility Aircraft Availability.* AFIT/GLM/ENS/04-06, Faculty Advisor: Lt Col Stephen M. Swartz, DSN 785-3636 x4575. Sponsor: AFRL/HE.

JORDAN, TIA A. *Analysis of the Current Air Force-Specific Status of Resources and Training System (SORTS) Reporting System.* AFIT/GLM/ENS/04-07, Faculty Advisor: Lt Col Stephen M. Swartz, DSN 785-3636 x4575. Sponsor: N/A.

KAHLER, HAROLD M. *An Analysis of Depot Repair Capacity as a Criterion In Transportation Mode Selection in the Retrograde Movement of Reparable Assets.* AFIT/GLM/ENS/04-08, Faculty Advisor: Dr. William A. Cunningham, III, DSN 785-6565 x4283. Sponsor: AFMC/LGRM.

KIRKWOOD, JOHN C. *Analysis of Air Force Compliance with Executive Order 13149.* AFIT/GLM/ENS/04-09, Faculty Advisor: Dr. William A. Cunningham, III, DSN 785-6565 x4283. Sponsor: N/A.

LEONARD, MARCIA E. *Air Force Materiel Command: A Survey of Performance Measures.* AFIT/GLM/ENS/04-10, Faculty Advisor: Major Stanley E. Griffis, DSN 785-3636 x4708. Sponsor: N/A.

MAXWELL, MELVIN E. *A Performance Evaluation of a Lean Reparable Pipeline in Various Demand Environments.* AFIT/GLM/ENS/04-11, Faculty Advisor: Maj Stanley E. Griffis, DSN 785-3636 x4708. Sponsor: N/A.

MAYNARD, DENNIS R. *Reusable Space Vehicle Baseline Conceptual Vehicle.* AFIT/GLM/ENS/04-12, Faculty Advisor: Lt Col Stephan Brady, DSN 785-3636 x4701. Sponsor: AFRL/VAS.

MURRAY, SCOTT M. *Prepositioned Trailers for Aircraft Battle Damage Support.* AFIT/GLM/ENS/04-13, Faculty Advisor: Maj Stanley E. Griffis, DSN 785-3636 x4708. Sponsor: AMC/ABDR/PO.

PETTIT, PATRICIA A. *Reusable Space Vehicle Baseline Conceptual Vehicle.* AFIT/GLM/ENS/04-12, Faculty Advisor: Lt Col Stephan Brady, DSN 785-3636 x4701. Sponsor: AFRL/VAS.

RANDALL, CHRISTIAN E. *An Analysis of the Impact of Base Support Resources on the Availability of Air Mobility Command Aircraft.* AFIT/GLM/ENS/04-15, Faculty Advisor: Maj Stanley E. Griffis, DSN 785-3636 x4708. Sponsor: AFRL/HEAL.

RODMAN, WILLIAM K. *Supply Chain Management in Humanitarian Relief Logistics.* AFIT/GLM/ENS/04-16, Faculty Advisor: Lt Col Stephan P. Brady, DSN 785-3636 x4701. Sponsor: N/A.

SHELLHAMER, MICHAEL J. *Effects of Duty Schedule Variance and Overtime on the Job Satisfaction and Turnover Intentions of USAF F-16 Crew Chiefs.* AFIT/GLM/ENS/04-17, Faculty Advisor: Lt Col Stephen Swartz, DSN 785-3636 x4575. Sponsor: AFRL/HESR.

SMITH, DIANNA *The Operational Impact of Mobility Readiness Spares Package Configuration During Operation Iraqi Freedom.* AFIT/GLM/ENS/04-18, Faculty Advisor: Maj Bradley Anderson, DSN 785-3636 x4646. Sponsor: N/A.

SWISHER, JAMES P. *Customer-Focused Business Practice Adoption: A Comparison of Private and Public Sector Implementations.* AFIT/GLM/ENS/04-19, Faculty Advisor: Lt Col Stephan P. Brady, DSN 785-3636 x4701. Sponsor: N/A.

WALL, DAVID B. *Theoretical Models for Aircraft Availability: Classical Approach to Identification of Trends, Seasonality, and System Constraints in the Development of Realized Models.* AFIT/GLM/ENS/04-20, Faculty Advisor: Lt Col Stephan P. Brady, DSN 785-3636 x4701. Sponsor: ASC/QI.

WOODRUFF, MATTHEW S. *Analysis of Army Reserve Officer Training Corps Cadet Behavioral Leadership and Development.* AFIT/GLM/ENV/04M-01, Faculty Advisor: Dr. Jan P. Muczyk, DSN 785-3636 x4648. Sponsor: N/A.

3.2.14 MATERIALS SCIENCE (GMS)

ENGESSER, JOHN M. *Monotonic, Creep-Rupture, and Fatigue Behavior of Carbon Fiber Reinforced Silicon Carbide (C/SiC) at an Elevated Temperature.* AFIT/GMS/ENY/04M-01, Faculty Advisor: Dr. Shankar Mall, DSN 785-3636 x4587. Sponsor: AFRL/MLLN.

LIETCH, LEWIS C. *Fretting Fatigue Behavior of the Titanium Alloy Ti-6AL-4V Under Seawater Conditions.* AFIT/GMS/ENY/04M-02, Faculty Advisor: Dr. Shankar Mall, DSN 785-3636 x4587. Sponsor: AFRL/MLLMN.

3.2.15 METEOROLOGY (GM)

BARTLETT, KEVIN S. *Dust Storm Forecasting For Al Udeid AB, Qatar: An Empirical Analysis.* AFIT/GM/ENP/04-01, Faculty Advisor: Maj Steven T. Fiorino, Maj, DSN 785-3636 x4506. Sponsor: HQ ACC/DOW.

BELSON, BRIAN L. *An Automated Method of Predicting Clear-Air Turbulence.* AFIT/GM/ENP/04-02, Faculty Advisor: Lt Col Michael K. Walters, DSN 785-2012. Sponsor: 15th Operational Weather Squadron.

*CALLIS, STEVEN M. *Verification of Meteorological Data Reports from the RQ-4A Global Hawk Unmanned Aerial Vehicle.* AFIT/GM/ENP/04-03, Faculty Advisor: Lt Col Ronald P. Lowther, DSN 785-3636 x4645. Sponsors: 88th Weather Squadron (AFMC/ASC/88thABW/MSGWE) and ASC/RAV.

DE LA VEGA, ROBIN L. *Mesonet Sensor Siting in Support of the 2004 Olympic Games in Athens, Greece.* AFIT/GM/ENP/04-04, Faculty Advisor: Lt Col Ronald P. Lowther, DSN 785-3636 x4645. Sponsor: DTRA.

FOLSOM, MANUEL I. *Developing a Forecast Tool for Cloud to Ground Lightning in the North Central and Northeastern United States.* AFIT/GM/ENP/04-05, Faculty Advisor: Lt Col Michael K. Walters, DSN 785-3636 x4681. Sponsor: 15th Operational Weather Squadron.

FOX, GREGORY D. *Comparison of a Conceptual Model and Objective Indicators of Extratropical Transition in the Western North Pacific.* AFIT/GM/ENP/04M-06, Faculty Advisor: Lt Col Ronald P. Lowther, DSN 785-3636 x4645. Sponsor: JTWC.

LEFFLER, JONATHAN W. *Feasibility of Using Classification Analyses to Determine Tropical Cyclone Rapid Intensification.* AFIT/GM/ENP/04-07, Faculty Advisor: Lt Col Ronald P. Lowther, DSN 785-3636 x4645. Sponsor: PACAF/JTWC.

LEWIS, DANIELLE M. *Forecasting Advective Sea Fog with the Use of Classification and Regression Tree Analyses for Kunsan Air Base.* AFIT/GM/ENP/04-08, Faculty Advisor: Lt Col Ronald P. Lowther, DSN 785-3636 x4645. Sponsor: PACAF/8th OSS/OSW.

LUSSIER, III LOUIS L. *A Statistically-Based Method for Predicting Fog and Stratus Dissipation.* AFIT/GM/ENP/04-09, Faculty Advisor: Maj Steven T. Fiorino, DSN 785-3636 x4506. Sponsor: 15th OWS.

MILLER, SCOTT M. *Verification of the Mountain Wave Forecast Model's Stratospheric Turbulence Forecasts Using Sounding Data and Pilot Reports.* AFIT/GM/ENP/04-10, Faculty Advisor: Lt Col Michael K. Walters, DSN 785-3636 x4681. Sponsor: Air Force Weather Agency, HQ AFWA/DNXT.

3.2.16 NUCLEAR ENGINEERING (GNE)

BONAVITA, ANGELO M. *Low Temperature Hall Measurements of Neutron Irradiated Silicon Carbide.* AFIT/GNE/ENP/04-01, Faculty Advisor: LTC James C. Petrosky, DSN 785-3636 x4600. Sponsor: DTRA/CSNP.

BOYD, JOHN E. *Excited States of Silicon Carbide Clusters by Time Dependent Density Functional Theory.* AFIT/GNE/ENP/04-02, Faculty Advisor: Dr. Larry W. Burggraf, DSN 785-3636 x4507. Sponsor: AFRL/AFOSR/NL.

DUVALL, SEAN P. *Sensitivity Analysis of Visual Interactive Site Analysis Code.* AFIT/GNE/ENP/04-03, Faculty Advisor: Dr. Ronald F. Tuttle, DSN 785-3636 x4536. Sponsor: DTRA/CSNP.

MILLER, TY E. *Modeling Multiple Component Uranium Enrichment Cascades.* AFIT/GNE/ENP/04-04, Faculty Advisor: Dr. Kirk A. Mathews, DSN 785-6565 x4508. Sponsor: AFTAC/TMN.

NEW, JON C. *Modeling Plutonium Production at a Gas Cooled Reactor.* AFIT/GNE/ENP/04-05, Faculty Advisor: Dr. Ronald F. Tuttle, DSN 785-3636 x4536. Sponsor: DTRA/CSNP.

SEVERSON, MICHAEL B. *An Experimental Design for Measuring in SITU Radiation Damage to a Piezoelectric Transducer.* AFIT/GNE/ENP/04-06, Faculty Advisor: LTC James C. Petrosky, DSN 785-3636 x4562. Sponsor: DTRA/CSNP.

SULHAM, CLIFFORD V. *Special Nuclear Material Imaging Using a High Purity Germanium Double Sided Strip Detector.* AFIT/GNE/ENP-04-07, Faculty Advisor: Dr. Larry W. Burggraf, DSN 785-3636 x4507. Sponsor: DTRA/TDND.

WILLIAMS, CHRISTOPHER S. *Plutonium Isotopic Ratio Determination Using Compton Spectrometer System.* AFIT/GNE/ENP/04-08, Faculty Advisor: Dr. Larry W. Burggraf, DSN 785-6565 x4507. Sponsor: DTRA/TDND.

3.2.17 OPERATIONS RESEARCH (GOR)

BAROSKO, STEVEN J. *Effects of Uncertainty on Real World Aerospace Mission Data.* AFIT/GOR/ENS/04-01, Faculty Advisor: Dr. John O. Miller, DSN 785-3636 x4326. Sponsor: AFSAA.

CHAPIN, PATRICK S. *Age Replacement and Service Rate Control of Stochastically Degrading Queues.* AFIT/GOR/ENS/04-02, Faculty Advisor: Dr. Jeffrey P. Kharoufeh, DSN 785-3636 x4603. Sponsor: N/A.

CLEMANS, PAUL P. *An Investigation of the Optimal Sensor Ensemble for Sensor Fusion.* AFIT/GOR/ENS/04-03, Faculty Advisor: Dr. Kenneth W. Bauer, DSN 785-6565 x4328. Sponsor: AFRL/AFOSR/NM.

COOK, MICHAEL T. *Improving the Estimation of Military Worth of the Advanced Tactical Laser Through Simulation Aggregation.* AFIT/GOR/ENS/04-04, Faculty Advisor: Dr. John O. Miller, DSN 785-6565 x4326. Sponsor: HEL JTO/AFSAA.

DESTEFANO, GREGORY V. *Agent Based Simulation Seas Evaluation of DoD-AF Architecture.* AFIT/GOR/ENS/04-05, Faculty Advisor: Dr. John O. Miller, DSN 785-6565 x4326. Sponsor: SMC/TD.

LEAP, NATHAN J. *An Investigation of the Effects of Correlation, Autocorrelation, and Sample Size in Classifier Fusion.* AFIT/GOR/ENS/04-06, Faculty Advisor: Dr. Kenneth W. Bauer, DSN 785-6565 x4328. Sponsor: AFRL/AFOSR/NM.

MOON, SANG H. *Decision Analysis with Value Focused Thinking as a Methodology to Assess Air Force Officer Retention Alternatives.* AFIT/GOR/ENS/04-08, Faculty Advisor: Maj Jeffrey D. Weir, DSN 785-3636 x4538. Sponsor: AFPOA/DPX.

PAWLING, CARL R. *Modeling and Simulation of the Military Intelligence Process.* AFIT/GOR/ENS/04-09, Faculty Advisor: Dr. J.O. Miller, DSN 785-6565 x4326. Sponsor: National Security Space Architect.

PORTER, TIMOTHY W. *Value-Focused Thinking in the Presence of Wright Ambiguity: A Solution Technique Using Monte Carlo Simulation.* AFIT/GOR/ENS/04-15, Faculty Advisor: Maj Stephen P. Chambal, DSN 785-3636 x4894. Sponsor: N/A.

RICHARDSON, DAMON B. *Modeling and Analysis of Post-Conflict Reconstruction.* AFIT/GOR/ENS/04-10, Faculty Advisor: Dr. Richard F. Deckro, DSN 785-6565 x4325. Sponsor: CCJB-AR, CENTCOM.

SOLO, CHRISTOPHER J. *Phase-Type Approximations for Wear Processes in a Semi-Markov Environment.* AFIT/GOR/ENS/04-11, Faculty Advisor: Dr. Jeffrey Kharoufeh, DSN 785-3636 x4603. Sponsor: USSTRATCOM/PR12.

STERLING, SARA E. *Aggregation Techniques for Social Network Analysis.* AFIT/GOR/ENS/04-12, Faculty Advisor: Dr. Richard F. Deckro, DSN 785-6565 x4325. Sponsor: N/A.

WOODWARD, WILLIAM E. *Measuring the Risk of Shortfalls in Air Force Capabilities.* AFIT/GOR/ENS/04-13, Faculty Advisor: Dr. Richard F. Deckro, DSN 785-6565 x4325. Sponsor: HQ USAF/XOR.

ZIMMERMAN, MATTHEW W. *Predictive Modeling and Methodologies of Computer Network Operations.* AFIT/GOR/ENS/04-14. Faculty Advisor: Dr. Richard F. Deckro, DSN 785-6565 x4325. Sponsor: N/A.

3.2.18 SPACE SYSTEMS (GSS)

ANDERSON, JASON. *Optimal Constellation Design for Orbital Munitions Delivery System.* AFIT/GSS/ENY/04M-01, Faculty Advisor: Dr. Steven G. Tragesser, DSN 785-3636 x4568. Sponsor: NSSO.

BROCK, MARC A. *Performance Study of Two-Stage-to-Orbit Reusable Launch Vehicle Propulsion Alternatives.* AFIT/GSS/ENY/04M-02, Faculty Advisor: Dr. Milton Franke, DSN 785-3636 x4720. Sponsor: AFRL/PRAT.

COLBERT, MATTHEW J. *An Analysis of the Potential for Using Over-the-Horizon Radar Systems for Space Surveillance.* AFIT/GSS/ENG/04-01, Faculty Advisor: Maj Todd B. Hale, DSN 785-3636 x4639. Sponsor: AFHQ, R1-6-C105.

FAULSTICH, MARK J. *Data Sorting and Orbit Determination of Tethered Satellite Systems.* AFIT/GSS/ENY/04M-03, Faculty Advisor: Dr. Steven G. Tragesser, DSN 785-3636 x4568. Sponsor: AFSPC/XPY.

HOOVER, TODD M. *An Electromagnetic Tool for Damping and Fatigue Analysis.* AFIT/GSS/ENY/04M-04, Faculty Advisor: Dr. Anthony Palazotto, DSN 785-3636 x4599. Sponsor: AFRL/PRPG.

LINDEMUTH, STEVEN N. *Characterization and Ground Test of an Inflatable Rigidizable Space Experiment.* AFIT/GSS/ENY/04M-05, Faculty Advisor: Maj Richard G. Cobb, DSN 785-3636 x4559. Sponsor: NRO/IMINT/RNTS.

NELSON, JOEL E. *Infrared Methods for Daylight Acquisition of LEO Satellites.* AFIT/GSS/ENG/04-02, Faculty Advisor: Maj Matthew E. Goda, DSN 785-3636 x4614. Sponsor: AFRL/DEBI, Det 15.

TOSO, ALLEN R. *Systems-Level Feasibility Analysis of a Microsatellite Rendezvous with Non-Cooperative Targets.* AFIT/GSS/ENY/04M-06, Faculty Advisor: Dr.Steven G. Tragesser, DSN 785-3636 x4568. Sponsor: NASIC/FTIO.

3.2.19 SYSTEMS ENGINEERING (GSE)

ZINN, ANDREW W. *The Use of Integrated Architectures to Support Agent Based Simulation: An Initial Investigation.* AFIT/GSE/ENY/04M-01, Faculty Advisor: Dr. David R. Jacques, DSN 785-3355 x3329. Sponsor: SMC/TD.

3.3 SPONSORS OF MASTER'S THESES AND DOCTORAL DISSERTATIONS

[*Denotes Multiple Sponsors]

3.3.1 AIR FORCE

BECK, GRACE M. *An Analysis of the Air Force Basic Communications Officer Training Course: The Impact of Trainee and Organization Characteristics on Training Effectiveness.* AFIT/GIR/ENV/04M-03, Faculty Advisor: Col Rita A. Jordan, DSN 785-4372. Sponsor: HQ USAF/ILC.

CLEWETT, ANDREW C. *A Study of Information Exchange Between United States Air Force Bases and Their Surrounding Communities.* AFIT/GEM/ENV/04M-06, Faculty Advisor: Dr. Alan R. Heminger, DSN 785-3636 x4797. Sponsor: USAF/ILE-I.

COBB, WILLIAM E. *Non-Cooperative (Passive) Synchronization with a Bluetooth Piconet.* AFIT/GE/ENG/04-04, Faculty Advisor: Maj Rusty O. Baldwin, DSN 785-6565 x4445. Sponsor: USAF.

HOLLAND, PATRICK S. *Comparative Functional Analysis of Air Force and Commercially Available Transportation Information Management Systems.* AFIT/GLM/ENS/04-05, Faculty Advisor: Maj Kirk A. Patterson, DSN 785-3636 x4653. Sponsor: HQ USAF/ILGX.

KUBINSKY, JOSEPH S. *Securing the Air Force Network: Issues Concerning Time Compliant Network Order (TCNO) Deployment.* AFIT/GIR/ENV/04M-14, Faculty Advisor: Dr. Alan R. Heminger, DSN 785-3636 x4797. Sponsor: USAF/CIO.

OLIVER, MARIO L. *Investigation of Geobase Implementation Issues: Case Study of Information Resource Management.* AFIT/GIR/ENV/04M-16, Faculty Advisor: Lt Col Summer E. Bartczak, DSN 785-3636 x4826. Sponsor: HAF/GIO.

TOBIN, SCOTT D. *Establishing a Cyber Warrior Force.* AFIT/GE/ENG/04-27, Faculty Advisor: Dr. Richard A. Raines, DSN 785-6565 x4278. Sponsor: AF-CIO/PO.

WOODWARD, WILLIAM E. *Measuring the Risk of Shortfalls in Air Force Capabilities.* AFIT/GOR/ENS/04-13, Faculty Advisor: Dr. Richard F. Deckro, DSN 785-6565 x4325. Sponsor: HQ USAF/XOR.

OFFICE OF THE SECRETARY OF THE AIR FORCE

BRONSON, TONYA J. *Active Duty Military Deployments: A Respite from Job Stressors and Burnout for Air Force Acquisition Support Personnel*. AFIT/GAQ/ENV/04M-02, Faculty Advisor: Maj Daniel T. Holt, DSN 785-3636 x4800. Sponsor: SAF/AQCA.

EBERLAN, JON A. *Location Optimization of Continental United States Strip Alert Sites Supporting Homeland Defense*. AFIT/GLM/ENS/04-02, Faculty Advisor: Dr. William A. Cunningham, III, DSN 785-6565 x4283. Sponsor: SAF/IEB.

LEEDY, DOUGLAS E. *Small Business Participation in Air Force Procurement: Participation Trends and the Effect of Acquisition Reform Initiatives on Air Force Procurement via Selected Contract Types in Selected Product Categories*. AFIT/GAQ/ENV/04M-07, Faculty Advisor: Dr. Patricia G. Luna, DSN 785-2998. Sponsor: SAF/Air Force Small Business.

PETIT, CAREY E. *Development of Measures of Success for Corporate Level Air Force Acquisition Initiatives*. AFIT/GAQ/ENV/04M-09, Faculty Advisor: Col Rita Jordan, DSN 785-4372. Sponsor: SAF/ACE.

PIKE, WILLIAM C. *Measuring Small Business Participation in Air Force Contracting: The Impact of Acquisition Reform.* AFIT/GAQ/ENV/04M-10, Faculty Advisor: Dr. Patricia G. Luna, DSN 785-2998. Sponsor: SAF/Air Force Small Business.

STHULTZ, TREVOR T. *Military Deployments as a Respite from Burnout: An Analysis of Gender and Family*. AFIT/GAQ/ENV/04M-11, Faculty Advisor: Maj Daniel T. Holt, DSN 785-3636 x4800. Sponsor: SAF/AQCA.

3.3.2 AIR COMBAT COMMAND

BARTLETT, KEVIN S. *Dust Storm Forecasting For Al Udeid AB, Qatar: An Empirical Analysis.* AFIT/GM/ENP/04-01, Faculty Advisor: Maj Steven T. Fiorino, Maj, DSN 785-3636 x4506. Sponsor: HQ ACC/DOW.

AIR FORCE INFORMATION WARFARE CENTER

TAYLOR, STEVEN J. *Throughput Performance Evaluation and Analysis of Unmodified Bluetooth Devices*. AFIT/GCS/ENG/04-20, Faculty Advisor: Dr. Richard A. Raines, DSN 785-6565 x4278. Sponsor: AFIWC.

NATIONAL AIR AND SPACE INTELLIGENCE AGENCY

CARSTEN, JAMES M. *Intelligent Query Answering through Rule Learning and Generalization.* AFIT/GCS/ENG/04-05, Faculty Advisor: Dr. Gilbert Peterson, DSN 785-6565 x4281. Sponsor: NASIC/IMINT.

DEARINGER, ANTHONY J. *Simulating a Chromotomographic Sensor for Hyperspectral Imaging in the Infrared.* AFIT/GE/ENG/04-05, Faculty Advisor: Maj Mathew E. Goda, DSN 785-2024. Sponsor: NASIC/DEMS.

GISSELQUIST, DANIEL E. *A Linear Subspace Approach to Burst Communication Signal Processing.* AFIT/DS/ENG/04-02, Faculty Advisor: Col Donald R. Kitchen, DSN 785-2024. Sponsor: NASIC/DES.

GUSTKE, KEVIN C. *Reconstruction Algorithm Characterization and Performance Monitoring in Limited-Angle Chromotomography.* AFIT/GE/ENG/04-12, Faculty Advisor: Dr. Stephen C. Cain, DSN 785-3636 x4625. Sponsor: NASIC/DEMS.

SPLIETHOF, BRIAN L. *Enhancing Image Retrieval Using Forward Feedback, Term Co-Occurrence and Natural Segmentation on a Semi-Static Image Collection.* AFIT/GCS/ENG/04-18, Faculty Advisor: Lt Col Michael Talbert, DSN 785-3636 x4716. Sponsor: NASIC/DEIT.

TOSO, ALLEN R. *Systems-Level Feasibility Analysis of a Microsatellite Rendezvous with Non-Cooperative Targets.* AFIT/GSS/ENY/04M-06, Faculty Advisor: Dr. Steven G. Tragesser, DSN 785-3636 x4568. Sponsor: NASIC/FTIO.

3.3.3 AIR EDUCATION AND TRAINING COMMAND

AIR FORCE INSTITUTE OF TECHNOLOGY**

**Although no external sponsor is identified, in most cases, AFIT faculty sponsored the below projects due to their relevance to current or future USAF, DoD and/or Homeland Security requirements.

ACOSTA VOEGELI, GERARDO H. *Extending the Aircraft Availability Model to a Constrained Depot Environment Using Activity-Based Costing and the Theory of Constraints*. AFIT/GLM/ENS/04-01, Faculty Advisor: Lt Col Stephen M. Swartz, DSN 785-3636 x4575. Sponsor: N/A.

ANGERMAN, WILLIAM S. *Coming Full Circle with Boyd's OODA Loop Ideas: An Analysis of Innovation Diffusion and Evolution*. AFIT/GIR/ENV/04M-01, Faculty Advisor: Lt Col Summer E. Bartczak, DSN 785-3636 x4826. Sponsor: N/A.

BLANCHETTE, CHRISTOPHER J. *A Decision Support Tool for Thrift Savings Plan Investors*. AFIT/GEM/ENV/04M-02, Faculty Advisor: Lt Col Alfred E. Thal, Jr., DSN 785-3636 x4798. Sponsor: N/A.

CHAPIN, PATRICK S. *Age Replacement and Service Rate Control of Stochastically Degrading Queues*. AFIT/GOR/ENS/04-02, Faculty Advisor: Dr. Jeffrey P. Kharoufeh, DSN 785-3636 x4603. Sponsor: N/A.

COSTELLO, JOHN F. *Developing Team Cohesion: A Quasi-Field Experiment*. AFIT/GEM/ENV/04M-07, Faculty Advisor: Maj Daniel T. Holt, DSN 785-3636 x4800. Sponsor: N/A.

COX, JONATHAN C. *Isomer Heat Exchanger Combustor Replacement for a Supersonic Ramjet Powered Vehicle*. AFIT/GAE/ENY/04J-02, Faculty Advisor: Dr. Paul I. King, DSN 785-3636 x4314. Sponsor: N/A.

EARNHARDT, CHRISTOPHER C. *Cross-Sectional Study on the Factors that Influence E-Learning Course Completion Rates*. AFIT/GIR/ENV/04M-05, Faculty Advisor: Dr.Paul W. Thurston, Jr. DSN 785-7777 x3276. Sponsor: N/A.

ETTRICH, KURT G. *Purchasing and Supply Chain Management Costing: An Air Transport Perspective Derived Through Commercial Air Cargo Firms*. AFIT/GAQ/ENV/04M-04, Faculty Advisor: Maj Michael A. Greiner, DSN 785-3636 x4588. Sponsor: N/A.

FINKELSTEIN, DANIEL. *Analytical Results for a Single-Unit System Subject to Markovian Wear and Shocks*. AFIT/GAM/ENS/04-01, Faculty Advisor: Dr. Jeffrey P. Kharoufeh, DSN 785-3636 x4603. Sponsor: N/A.

JORDAN, TIA A. *Analysis of the Current Air Force-Specific Status of Resources and Training System (SORTS) Reporting System*. AFIT/GLM/ENS/04-07, Faculty Advisor: Lt Col Stephen M. Swartz, DSN 785-3636 x4575. Sponsor: N/A.

KELLEHER, EDWARD A. *Study of a Skirtless Hovercraft Design*. AFIT/GAE/ENY/04J-05, Faculty Advisor: Dr. Milton Franke, DSN 785-3636 x4720. Sponsor: N/A.

KIMSAL, MATTHEW B. *Design of a Space-Borne Autonomous Infrared Tracking System*. AFIT/GA/ENY/04M-02, Faculty Advisor: Maj Richard Cobb, DSN 785-6565 x4559. Sponsor: N/A.

KING, MARY M. *An Investigation of the Role of Influence Behaviors in Information System Implementation: A Case Study of the Air Force Institute of Technology School of Engineering and Management Student Academic Support System*. AFIT/GIR/ENV/04M-13, Faculty Advisor: Lt Col Summer E. Bartczak, DSN 785-3636 x4826. Sponsor: N/A.

KIRKWOOD, JOHN C. *Analysis of Air Force Compliance with Executive Order 13149*. AFIT/GLM/ENS/04-09, Faculty Advisor: Dr. William A. Cunningham, III, DSN 785-6565 x4283. Sponsor: N/A.

KULICK, JENNIFER C. *An Unfolding Model of Voluntary Turnover of Air Force Reservists and Air National Guard Members*. AFIT/GEM/ENV/04M-11, Faculty Advisor: Maj Daniel T. Holt, DSN 785-3636 x4800. Sponsor: N/A.

LEONARD, MARCIA E. *Air Force Materiel Command: A Survey of Performance Measures*. AFIT/GLM/ENS/04-10, Faculty Advisor: Major Stanley E. Griffis, DSN 785-3636 x4708. Sponsor: N/A.

MATHEWS, EDWARD A. *A Study of Course Design Factors that Influence E-Learning Course Completion Rates*. AFIT/GIR/ENV/04M-15, Faculty Advisor: Maj Paul W. Thurston, DSN 785-7777 x3276. Sponsor: N/A.

MAXWELL, MELVIN E. *A Performance Evaluation of a Lean Reparable Pipeline in Various Demand Environments*. AFIT/GLM/ENS/04-11, Faculty Advisor: Maj Stanley E. Griffis, DSN 785-3636 x4708. Sponsor: N/A.

NEWBERRY, JAMES D. *Software Development Outsourcing Decision Support Tool with Neural Network Learning*. AFIT/GCS/ENG/04-16, Faculty Advisor: Lt Col Brian G. Hermann, DSN 785-7777 x3131. Sponsor: N/A.

ORLOVSKY, JAMES R. *An Update on Analyzing Differences Between Public and Private Sector Information Resource Management: Strategic Information Challenges and Critical Technologies*. AFIT/GIR/ENV/04M-17, Faculty Advisor: Dr. Alan R. Heminger, DSN 785-3636 x4797. Sponsor: N/A.

PHILLIPS, SCOTT C. *Optical Characterization and Modeling of Compositionally Matched Indium Arsenide-Antimonide Bulk and Multiple Quantum Well Semiconductors*. AFIT/GAP/ENP/04-05, Faculty Advisor: Dr. Robert L. Hengehold, DSN 785-3636 x4502. Sponsor: N/A.

PORTER, TIMOTHY W. *Value-Focused Thinking in the Presence of Wright Ambiguity: A Solution Technique Using Monte Carlo Simulation*. AFIT/GOR/ENS/04-15, Faculty Advisor: Maj Stephen P. Chambal, DSN 785-3636 x4894. Sponsor: N/A.

RAY, KENNETH L. *Fidelity Analysis of ATFS Series 400 G-FET II Motion-Based Flight Simulator*. AFIT/GA/ENY/04J-10, Faculty Advisor: Dr. Tamara L. Chelette, DSN 785-3069. Sponsor: N/A.

RODMAN, WILLIAM K. *Supply Chain Management in Humanitarian Relief Logistics*. AFIT/GLM/ENS/04-16, Faculty Advisor: Lt Col Stephan P. Brady, DSN 785-3636 x4701. Sponsor: N/A.

SKIBO, STEPHANIE M. *An Analysis of Generational Differences Among Active Duty Members*. AFIT/GCQ/ENV/04M-10, Faculty Advisor: Maj Daniel Holt, DSN 785-3636 x4800. Sponsor: N/A.

SMITH, DIANNA *The Operational Impact of Mobility Readiness Spares Package Configuration During Operation Iraqi Freedom.* AFIT/GLM/ENS/04-18, Faculty Advisor: Maj Bradley Anderson, DSN 785-3636 x4646. Sponsor: N/A.

STERLING, SARA E. *Aggregation Techniques for Social Network Analysis*. AFIT/GOR/ENS/04-12, Faculty Advisor: Dr. Richard F. Deckro, DSN 785-6565 x4325. Sponsor: N/A.

SWISHER, JAMES P. *Customer-Focused Business Practice Adoption: A Comparison of Private and Public Sector Implementations*. AFIT/GLM/ENS/04-19, Faculty Advisor: Lt Col Stephan P. Brady, DSN 785-3636 x4701. Sponsor: N/A.

WILLIAMS, STACEY L. *An Analysis of Generational Differences Among Civil Servants*. AFIT/GCA/ENV/04M-12, Faculty Advisor: Maj Daniel Holt, DSN 785-3636 x4800. Sponsor: N/A.

WODOCHEK, JOHN *Fair Opportunity within Federal Contracting: A Delphi Study of Justice*. AFIT/GAQ/ENV/04M-13, Faculty Advisor: Maj Daniel T. Holt, DSN 785-3636 x4800. Sponsor: N/A.

WOOD, SARAH E. *The Predictive Validity of the AFIT Graduate Management Program Admission Requirements: A Reassessment and Extension.* AFIT/GAQ/ENV/04M-03, Faculty Advisor: Maj Bryan J. Hudgens, DSN 785-3636 x4574. Sponsor: N/A.

WOODRUFF, MATTHEW S. *Analysis of Army Reserve Officer Training Corps Cadet Behavioral Leadership and Development*. AFIT/GLM/ENV/04M-01, Faculty Advisor: Dr. Jan P. Muczyk, DSN 785-3636 x4648. Sponsor: N/A.

ZIMMERMAN, MATTHEW W. *Predictive Modeling and Methodologies of Computer Network Operations.* AFIT/GOR/ENS/04-14. Faculty Advisor: Dr. Richard F. Deckro, DSN 785-6565 x4325. Sponsor: N/A.

3.3.4 AIR FORCE MATERIEL COMMAND

FITZGERALD, DAVID C. *An Exploratory Analysis of Factors Affecting Participation in Air Force Knowledge Now Communities of Practice.* AFIT/GIR/ENV/04M-06, Faculty Advisor: Dr. Alan R. Heminger, DSN 785-3636 x4797. Sponsor: HQ AFMC DRW.

GAILLARD, DARIA J. *Investigating the Optimal Management Strategy for a Healthcare Facility Maintenance Program.* AFIT/GAQ/ENV/04M-05, Faculty Advisor: Lt Col Timothy Reed, DSN 785-2998. Sponsor: AFMC/SGA.

GEHRICH, DAVID L. *Benefits from Funding the MSD Engineering List: A Fiscal Year 1999 Case Study.* AFIT/GLM/ENS/04-03, Faculty Advisor: Maj Bradley E. Anderson, DSN 785-3636 x4646. Sponsor: AFMC/LGIF.

GRAY, STEPHEN D. *Mitigating Growth Cost for Mobility Readiness Spares Packages.* AFIT/GLM/ENS/04-04, Faculty Advisor: Maj Bradley E. Anderson, DSN 785-3636 x4646. Sponsor: AFMC/LGI.

HINRICHSEN, PETER L. *An Exploration of Cultural Factors Affecting Use of Communities of Practice.* AFIT/GIR/ENV/04M-11, Faculty Advisor: Dr. Alan R. Heminger, DSN 785-3636 x4797. Sponsor: HQ AFMC/DRW.

KAHLER, HAROLD M. *An Analysis of Depot Repair Capacity as a Criterion In Transportation Mode Selection in the Retrograde Movement of Reparable Assets.* AFIT/GLM/ENS/04-08, Faculty Advisor: Dr. William A. Cunningham, III, DSN 785-6565 x4283. Sponsor: AFMC/LGRM.

LACEY, FREDERICK J. *Performance Based Service Acquisition (PBSA): A Dynamic Look at PBSA in the Air Force.* AFIT/GAQ/ENV/04M-06, Faculty Advisor: Maj Michael A. Greiner, DSN 785-3636 x4588. Sponsor: HQ AFMC/PKV.

LIGDAY, JOSHUA C. *Evaluation of Current Automated Civil Engineer System Non-Appropriated Funds Project Programming Procedures.* AFIT/GEM/ENV/04M-12, Faculty Advisor: Lt Col Alfred E. Thal, Jr. DSN 785-3636 x4798. Sponsor: HQ AFMC/CEPD.

NOVAK, RYAN M. *Going to War with Defense Contractors: A Case Study Analysis of Battlefield Acquisition.* AFIT/GAQ/ENV/04M-08, Faculty Advisor: Lt Col Tim Reed, DSN 785- 2998. Sponsor: HQ AFMC/PK.

RODRIGUEZ, JAIME A. *Exploring Content Management Issues in Air Force On-Line Communities of Practice: A Multiple Case Study Approach.* AFIT/GIR/ENV/04M-18, Faculty Advisor: Lt Col Summer E. Bartczak, DSN 785-3636 x4826. Sponsor: AFMC/DRWD.

WAGGONER, ELIZABETH A. *Keys to Successful Implementation and Sustainment of Managed Maintenance for Healthcare Facilities.* AFIT/GAQ/ENV/04M-12, Faculty Advisor: Lt Col Timothy S. Reed, DSN 785-2998. Sponsor: AFMC/SG.

AERONAUTICAL SYSTEMS CENTER

*CALLIS, STEVEN M. *Verification of Meteorological Data Reports from the RQ-4A Global Hawk Unmanned Aerial Vehicle.* AFIT/GM/ENP/04-03, Faculty Advisor: Lt Col Ronald P. Lowther, DSN 785-3636 x4645. Sponsors: 88th Weather Squadron (AFMC/ASC/88thABW/MSGWE) and ASC/RAV.

GENEST, DANIEL C. *Logistic and Multiple Regression: The Two-Step Approach to Estimating Cost Growth.* AFIT/GCA/ENC/04-01, Faculty Advisor: Dr. Edward D. White, DSN 785-3636 x4540. Sponsor: AFMC/ASC/FMCE.

LUCAS, BRANDON M. *Creating Cost Growth Models for the Engineering and Manufacturing Development Phase of Acquisition Using Logistic and Multiple Regression.* AFIT/GCA/ENC/04-02, Faculty Advisor: Dr. Edward D. White, DSN 785-3636 x4540. Sponsor: AFMC/ASC/FMCE.

MCDANIEL, CHRISTOPHER J. *Estimating Cost Growth in Engineering and Schedule Cost Categories Using a Two-Pronged Regression Approach.* AFIT/GCA/ENC/04-03, Faculty Advisor: Dr. Edward D. White, DSN 785-3636 x4540. Sponsor: AFMC/ASC/FMCE.

MORGAN, BENJAMIN J. *An Evaluation of Vegetated Roofing Technology: Application at Air Force Plant Four, Building 15.* AFIT/GEM/ENV/04M-14, Faculty Advisor: Lt Col Ellen C. England, DSN 785-3636 x4711. Sponsor: ASC/ENVV.

ROSSETTI, MATTHEW B. *Logistic and Multiple Regression: A Two-Pronged Approach to Accurately Estimate Cost Growth in Major DoD Weapon Systems.* AFIT/GCA/ENC/04-04, Faculty Advisor: Dr. Edward D. White, DSN 785-3636 x4540. Sponsor: AFMC/ASC/FMCE.

WALL, DAVID B. *Theoretical Models for Aircraft Availability: Classical Approach to Identification of Trends, Seasonality, and System Constraints in the Development of Realized Models.* AFIT/GLM/ENS/04-20, Faculty Advisor: Lt Col Stephan P. Brady, DSN 785-3636 x4701. Sponsor: ASC/QI.

WATKINS, JOHN R. *Utilizing Near-Field Measurements to Characterize Far-Field Radar Signatures.* AFIT/GE/ENG/04-24, Faculty Advisor: Maj Todd B. Hale, DSN 785-3636 x4639. Sponsor: AFMC/ASC/YFAAE.

AIR FORCE FLIGHT TEST CENTER

MILLER, GARY D. *Outside Loop Control in Asymmetrical Trimmed Flight Conditions.* AFIT/GAE/ENY/04M-12, Faculty Advisor: Dr. David R. Jacques, DSN 785-3355 x3329. Sponsor: USAF Test Pilot School.

WITTE, JOEL B. *An Investigation Relating Longitudinal Pilot-Induced Oscillation Tendency Rating to Describing Function Predictions for Rate-Limited Actuators.* AFIT/GAE/ENY/04M-16, Faculty Advisor: Dr. Brad Liebst, DSN 785-3636 x4636. Sponsor: USAF Test Pilot School.

AIR FORCE INSTITUTE FOR OPERATIONAL HEALTH

STAUDINGER, TIFFANY J. *Comparative Analysis of Water Vulnerability Assessment Methodologies.* AFIT/GEM/ENV/04M-18, Faculty Advisor: Lt Col Ellen England, DSN 785-3636 x4711. Sponsor: AFIOH/RSE.

AIR FORCE RESEARCH LABORATORIES

AFRL: AIR FORCE OFFICE OF SCIENTIFIC RESEARCH

ARMSTRONG, JASON M. *Effect of Equivalence Ratio and G-Loading on IN-SITU Measurements of Chemiluminescence in an Ultra Compact Combustor.* AFIT/GAE/ENY/04M-01, Faculty Advisor: Capt Ralph Anthenien, DSN 785-3636 x4643. Sponsor: AFRL/AFOSR/NA.

BOYD, JOHN E. *Excited States of Silicon Carbide Clusters by Time Dependent Density Functional Theory.* AFIT/GNE/ENP/04-02, Faculty Advisor: Dr. Larry W. Burggraf, DSN 785-3636 x4507. Sponsor: AFRL/AFOSR/NL.

CLEMANS, PAUL P. *An Investigation of the Optimal Sensor Ensemble for Sensor Fusion.* AFIT/GOR/ENS/04-03, Faculty Advisor: Dr. Kenneth W. Bauer, DSN 785-6565 x4328. Sponsor: AFRL/AFOSR/NM.

COX, STEVEN M. *Hybrid Stochastic Models for Remaining Lifetime Prognosis.* AFIT/DS/ENS/04-01, Faculty Advisor: Dr. Jeffrey P. Kharoufeh, DSN 785-3636 x4603. Sponsor: AFRL/AFOSR.

CUMBLIDGE, KEVIN *Using Time-Resolved Photoluminescence to Measure the Excitation and Temperature Dependence of Carrier Relaxation in Mid-Wave Infrared Semiconductors.* AFIT/GAP/ENP/04-02, Faculty Advisor: Dr. Michael A. Marciniak, DSN 785-3636 x4529. Sponsor: AFRL/AFOSR/NE.

FORD, CHRISTOPHER L. *Determination of the Trainability of Deception Detection Cues.* AFIT/GIR/ENV/04M-07, Faculty Advisor: Lt Col David P. Biros, DSN 785-2998. Sponsor: AFRL/AFOSR/NM.

FOX, WENDELL E. *Visual Debugging of Object-Oriented Systems with the Unified Modeling Language.* AFIT/GCS/ENG/04-07, Faculty Advisor: Maj Robert P. Graham, DSN 785-3636 x4715. Sponsor: AFRL/AFOSR/NM.

HARRINGTON, BRIAN H. *Magnetogasdynamic Flow Acceleration in a Scramjet Nozzle.* AFIT/GAE/ENY/04J-03, Faculty Advisor: Maj Richard J. McMullan, DSN 785-3636 x4559. Sponsor: AFRL/AFOSR/NA.

HASS, MICHAEL C. *Group Performance in Military Scenarios Under Deceptive Conditions.* AFIT/GIR/ENV/04M-10, Faculty Advisor: Lt Col David P. Biros, DSN 785-2998. Sponsor: AFRL/AFOSR/NM.

JOHNSON, PETER M. *Deviation of Time-Resolved Luminescence Dynamics in MWIR Semiconductor Materials from Carrier Recombination Theory Predictions.* AFIT/GEO/ENP/04-02, Faculty Advisor: Dr. Michael A. Marciniak, DSN 785-3636 x4529. Sponsor: AFRL/AFOSR/NE.

LEAP, NATHAN J. *An Investigation of the Effects of Correlation, Autocorrelation, and Sample Size in Classifier Fusion.* AFIT/GOR/ENS/04-06, Faculty Advisor: Dr. Kenneth W. Bauer, DSN 785-6565 x4328. Sponsor: AFRL/AFOSR/NM.

*RASMUSSEN, CODY C. *Optimization Process for Configuration of Flexible Joined-Wing.* AFIT/GAE/ENY/04M-14, Faculty Advisor: Lt Col Robert A. Canfield, DSN 785-3636 x4723. Sponsors: AFRL/AFOSR/NM and AFRL/VASD.

SAKAMOTO, JACHIN. *An Experimental Investigation of Productivity Stratification & Knowledge Transfer in an Electronically Mediated Environment.* AFIT/GIR/ENV/04M-19, Faculty Advisor: Lt Col David Biros, DSN 785-2998. Sponsor: AFRL/AFOSR/NM.

SHIN, KISU. *Role of Plasticity on Fretting Fatigue Behavior of Ti-6Al-4V.* AFIT/DS/ENY/04-05, Faculty Advisor: Dr. Shankar Mall, DSN 785-3636 x4587. Sponsor: AFRL/AFOSR/NA.

SRIVER, TODD A. *Pattern Search Ranking and Selection Algorithms for Mixed-Variable Optimization of Stochastic Systems.* AFIT/DS/ENS/04-02, Faculty Advisor: Dr. James W. Chrissis, DSN 785-3636 x4606. Sponsor: AFRL/AFOSR.

SZMEREKOVSKY, ANDREW G. *The Physical Understanding of the Effects of Coatings on the Mitigation of Hypervelocity Gouging.* AFIT/DS/ENY/04-06, Faculty Advisor: Dr. Anthony Palazotto, DSN 785-3636 x4599. Sponsor: AFRL/AFOSR/NM.

AFRL: AIR VEHICLES DIRECTORATE

BREHM, THOMAS E. *Optimal Design of Generalized Multiple Model Adaptive Controllers.* AFIT/DS/ENG/04-01, Faculty Advisor: Dr. Peter S. Maybeck, DSN 785-3636 x4581. Sponsor: AFMC/AFRL/VACA.

CALLAWAY, DAVID W. *Coplanar Air Launch with Gravity-Turn Launch Trajectories.* AFIT/GAE/ENY/04M-04, Faculty Advisor: Dr. William E. Wiesel, DSN 785-6565 x4312. Sponsor: AFRL/VACD.

DECKER, DOUGLAS D. *Decision Factors for Cooperative Multiple Warhead UAV Target Classification and Attack with Control Applications.* AFIT/DS/ENY/05-04, Faculty Advisor: Dr. David R. Jacques, DSN 785-3355 x3329. Sponsors: AFRL/MNGN and AFRL/VACA.

EARP, BRIAN E. *Magnetogasdynamic Flow Control of a Mach Reflection.* AFIT/GAE/ENY/04M-07, Faculty Advisor: Maj Richard J. McMullan, DSN 785-3636 x4559. Sponsor: AFRL/VAAC.

MAYNARD, DENNIS R. *Reusable Space Vehicle Baseline Conceptual Vehicle.* AFIT/GLM/ENS/04-12, Faculty Advisor: Lt Col Stephan Brady, DSN 785-3636 x4701. Sponsor: AFRL/VAS.

MCNABB, DENNIS J. *Investigation of Atmospheric Reentry for the Space Maneuver Vehicle.* AFIT/GA/ENY/04M-03, Faculty Advisor: Dr. William E. Wiesel, DSN 785-6565 x4312. Sponsor: AFRL/VACD.

MILLMAN, DANIEL R. *Quantifying Initial Condition and Parametric Uncertainties in a Nonlinear Aeroelastic System with an Efficient Stochastic Algorithm.* AFIT/DS/ENY/04-03, Faculty Advisor: Dr. Paul I. King, DSN 785-3636 x4314. Sponsor: AFRL/VASD.

PETTIT, PATRICIA A. *Reusable Space Vehicle Baseline Conceptual Vehicle.* AFIT/GLM/ENS/04-12, Faculty Advisor: Lt Col Stephan Brady, DSN 785-3636 x4701. Sponsor: AFRL/VAS.

*RASMUSSEN, CODY C. *Optimization Process for Configuration of Flexible Joined-Wing.* AFIT/GAE/ENY/04M-14, Faculty Advisor: Lt Col Robert A. Canfield, DSN 785-3636 x4723. Sponsors: AFRL/AFOSR/NM and AFRL/VASD.

REIFSNYDER, AARON J. *Vibrometric Detection of Beam Damage Due to Inclusions.* AFIT/GA/ENY/04J-01, Faculty Advisor: Dr. Anthony Palazotto, DSN 785-3636 x4599. Sponsor: AFRL/VASM.

VANDAWAKER, ROBERT M. *Experimental and Computational Analysis of Modes in a Partially Constrained Plate.* AFIT/GAE/ENY/04M-15, Faculty Advisor: Dr. Anthony N. Palazotto, DSN 785-3636 x4599. Sponsor: AFRL/VASA.

AFRL: DIRECTED ENERGY DIRECTORATE

JARRETT, DAVID B. *Cold Flow Testing of a Modified Subscale Model Exhaust System for a Space Based Laser.* AFIT/GAE/ENY/04J-04, Faculty Advisor: Dr. Milton Franke, DSN 785-3636 x4720. Sponsor: AFRL/DEBS.

LUTZ, BRIAN J. *Axisymmetric Optical Membrane Modeling Based on Experimental Results.* AFIT/GAE/ENY/04M-11, Faculty Advisor: Dr.Anthony N. Palazotto, DSN 785-3636 x4599. Sponsor: AFRL/DEBS.

NELSON, JOEL E. *Infrared Methods for Daylight Acquisition of LEO Satellites.* AFIT/GSS/ENG/04-02, Faculty Advisor: Maj Matthew E. Goda, DSN 785-3636 x4614. Sponsor: AFRL/DEBI, Det 15.

PASCOE, KENNETH J. *Target Recognition Using Late Time Returns from Ultra-Wideband, Short-Pulse Radar.* AFIT/DS/ENG/04-04, Faculty Advisor: Dr. Michael J. Havrilla, DSN 785-3636 x4582. Sponsor: AFRL/DEHP.

AFRL: HUMAN EFFECTIVENESS DIRECTORATE

HUSCROFT, JOSEPH R. *A Demand Side Requirements Model to Forecast C-17 Mobility Aircraft Availability.* AFIT/GLM/ENS/04-06, Faculty Advisor: Lt Col Stephen M. Swartz, DSN 785-3636 x4575. Sponsor: AFRL/HE.

MAYER, GREGORY C. *Modeling Science Technology Selection Using Value Focused Thinking.* AFIT/GEM/ENS/04-01, Faculty Advisor: Maj Jeffrery D. Weir, DSN 785-3636 x4538. Sponsor: AFRL/HEC.

NEU, JONATHAN M. *A Tightly-Coupled INS/GPS Integration Using a MEMS IMU.* AFIT/GE/ENG/04-19, Faculty Advisor: Dr. John F. Raquet, DSN 785-3636 x4580. Sponsor: AFRL/HEPA.

RANDALL, CHRISTIAN E. *An Analysis of the Impact of Base Support Resources on the Availability of Air Mobility Command Aircraft.* AFIT/GLM/ENS/04-15, Faculty Advisor: Maj Stanley E. Griffis, DSN 785-3636 x4708. Sponsor: AFRL/HEAL.

SHELLHAMER, MICHAEL J. *Effects of Duty Schedule Variance and Overtime on the Job Satisfaction and Turnover Intentions of USAF F-16 Crew Chiefs.* AFIT/GLM/ENS/04-17, Faculty Advisor: Lt Col Stephen Swartz, DSN 785-3636 x4575. Sponsor: AFRL/HESR.

AFRL: INFORMATION DIRECTORATE

BARTOLO, AUSTIN A. *Automated Agent Ontology Creation for Distributed Databases.* AFIT/GCS/EMG/04-01, Faculty Advisor: Dr. Gilbert L. Peterson, DSN 785-6565 x4281. Sponsor: AFRL/IFTC.

CORNER, JOSHUA J. *Swarming Reconnaissance Using Unmanned Aerial Vehicles in a Parallel Discrete Event Simulation.* AFIT/GCE/ENG/04-01, Faculty Advisor: Dr. Gary B. Lamont, DSN 785-3636 x4718. Sponsor: AFRL/IFTA.

DOSTAL, JONATHAN L. *Feature Selection in Wavelet Steganography.* AFIT/GE/ENG/04-07, Faculty Advisor: Dr. Steven C. Gustafson, DSN 785-3636 x4598. Sponsor: AFRL/IFEC.

EYSTER, MATTHEW D. *Discovering the Merit of the Wavelet Transform for Object Classification.* AFIT/GE/ENG/04-09, Faculty Advisor: Lt Col Michael L. Talbert, DSN 785-3636 x4716. Sponsor: AFRL/IFTA.

GLEN, MATTHEW G. *Multiple Access Interference Characterization for Direct-Sequence Spread-Spectrum Communications Using Chip Waveform Shaping.* AFIT/GE/ENG/04-10, Faculty Advisor: Dr. Michael A. Temple, DSN 785-6565 x4279. Sponsor: AFRL/IFGD.

KLEEMAN, MARK P. *Optimization of Heterogeneous UAV Communications Using the Multiobjective Quadratic Assignment Problem.* AFIT/GCE/ENG/04-04, Faculty Advisor: Dr. Gary B. Lamont, DSN 785-3636 x4718. Sponsor: AFRL/IFTA.

LEE, WEN CHIAN. *Swarm Based Implementation of a Virtual Distributed Database System in a Sensor Network.* AFIT/GCE/ENG/04-06, Faculty Advisor: Dr. Gary B. Lamont, DSN 785-3636 x4718. Sponsor: AFRL/IFTA.

MCBRIDE, BRENT T. *A Hyper-Geometric Data Classifier for Blind Detection of Novel Steganography.* AFIT/GCS/ENG/04-14, Faculty Advisor: Dr. Gilbert Peterson, DSN 785-6565 x4281. Sponsor: AFRL/IFEC.

MILAM, KEVIN M. *Evolution of Control Programs for a Swarm of Autonomous Unmanned Aerial Vehicles.* AFIT/GCS/ENG/04-15, Faculty Advisor: Dr. Gary B. Lamont, DSN 785-3636 x4718. Sponsor: AFRL/IFTA.

AFRL: MATERIALS AND MANUFACTURING DIRECTORATE

ABEL, NATHAN J. *Effects of Aberrations on Optical Cross Section Measurements.* AFIT/GEO/ENP/04-01, Faculty Advisor: Dr. Michael A. Marciniak, DSN 785-3636 x4529. Sponsor: AFRL/MLPJ.

ALLEN, WILLIAM Y. *Fretting Fatigue Behavior of Shot-Peened Titanium Alloy Ti-AL-4V Under Seawater Conditions.* AFIT/GAE/ENY/04J-01, Faculty Advisor: Dr. Shankar Mall, DSN 785-3636 x4587. Sponsor: AFRL/MLLMN.

BONDURANT, CHAD. *Characterization of Microbial Processes that Degrade Chlorinated Solvents in a Constructed Wetland Using Organic Acid and Inorganic Anion Concentration Profiles.* AFIT/GEM/ENV/04M-03, Faculty Advisor: Dr. Michael Shelley, DSN 785-3636 x4594. Sponsor: AFRL/MLQ.

COUTU, RONALD A. *Electrostatic Radio Frequency (RF) Microelectromechanical Systems (MEMS) Switches with Metal Alloy Electric Contacts.* AFIT/DS/ENG/04-05, Faculty Advisor: Capt Paul E. Kladitis, DSN 785-3636 x4595. Sponsor: AFRL/MLB.

ENGESSER, JOHN M. *Monotonic, Creep-Rupture, and Fatigue Behavior of Carbon Fiber Reinforced Silicon Carbide (C/SiC) at an Elevated Temperature.* AFIT/GMS/ENY/04M-01, Faculty Advisor: Dr. Shankar Mall, DSN 785-3636 x4587. Sponsor: AFRL/MLLN.

LIETCH, LEWIS C. *Fretting Fatigue Behavior of the Titanium Alloy Ti-6AL-4V Under Seawater Conditions.* AFIT/GMS/ENY/04M-02, Faculty Advisor: Dr. Shankar Mall, DSN 785-3636 x4587. Sponsor: AFRL/MLLMN.

SOBOLEWSKI, TERESA A. *Characterization of Chlorinated Solvent Degradation Profile Due to Microbial and Chemical Processes in a Constructed Wetland.* AFIT/GEM/ENV/04M-17, Faculty Advisor: Dr. Michael L. Shelley, DSN 785-3636 x4594. Sponsor: AFRL/MLQ.

AFRL: MUNITIONS DIRECTORATE

BJORGE, SCOTT T. *Flow Around an Object Projected from a Cavity into a Supersonic Freestream.* AFIT/GAE/ENY/04M-02, Faculty Advisor: Dr. Mark F. Reeder, DSN 785-3636 x4530. Sponsor: AFRL/MN.

DECKER, DOUGLAS D. *Decision Factors for Cooperative Multiple Warhead UAV Target Classification and Attack with Control Applications.* AFIT/DS/ENY/05-04, Faculty Advisor: Dr. David R. Jacques, DSN 785-3355 x3329. Sponsors: AFRL/MNGN and AFRL/VACA.

DELUCA, ANTHONY M. *Experimental Investigation into the Aerodynamic Performance of Both Rigid and Flexible Wing Structured Micro-Air-Vehicles.* AFIT/GAE/ENY/04M-06, Faculty Advisor: Dr. Mark F. Reeder, DSN 785-3636 x4530. Sponsor: AFRL/MNAV.

EGGERT, RYAN J. *Evaluating the Navigation Potential of the National Television System Committee Broadcast Signal.* AFIT/GE/ENG/04-08, Faculty Advisor: Dr. John F. Raquet, DSN 785-3636 x4580. Sponsor: AFRL/MNGI.

GUTIERREZ, JOSE R. *Multipath and GPS Signal Jamming Mitigation through Multiple Model Adaptive Estimation Applied to Ultra-Tightly Couple GPS/INS Architecture.* AFIT/GE/ENG/04-14, Faculty Advisor: Dr. Peter S. Maybeck, DSN 785-3636 x4581. Sponsor: AFRL/MNGN.

*LAVIERS, KENNARD R. *Concurrent-Cognitive Mapping and Localization Using Expectation Maximization.* AFIT/GCS/ENG/04-10, Faculty Advisor: Dr. Gilbert L. Peterson, DSN 785-6565 x4281. Sponsors: AFRL/MNGN and AFRL/SNRP.

ORTHNER, KARL *Aerodynamic Analysis of Lattice Grid Fins in Transonic Flow.* AFIT/GAE/ENY/04J-09, Faculty Advisor: Lt Col Raymond C. Maple, DSN 785-3636 x4577. Sponsor: AFRL/MN.

SZABO, FRANCIS R. *Demonstrating Optothermal Actuators for an Autonomous MEMS Microrobot.* AFIT/GE/ENG/04-23, Faculty Advisor: Capt Paul E. Kladitis, DSN 785-3636 x4595. Sponsor: AFRL/MNAV.

AFRL: PROPULSION DIRECTORATE

BLACKWELL, CHRISTOPHER M. *The Evaluation of the Damping Characteristics of a Hard Coating on Titanium.* AFIT/GAE/ENY/04M-03, Faculty Advisor: Dr. A. N. Palazotto, DSN 785-3636 x4599. Sponsor: AFRL/PRTS.

BROCK, MARC A. *Performance Study of Two-Stage-to-Orbit Reusable Launch Vehicle Propulsion Alternatives.* AFIT/GSS/ENY/04M-02, Faculty Advisor: Dr. Milton Franke, DSN 785-3636 x4720. Sponsor: AFRL/PRAT.

CASEY, JOHN P. *Effect of Dimple Pattern on the Suppression of Boundary Layer Separation on a Low Pressure Turbine Blade.* AFIT/GAE/ENY/04M-05, Faculty Advisor: Dr. Paul I. King, DSN 785-3636 x4314. Sponsor: AFRL/PRTT.

HOOVER, TODD M. *An Electromagnetic Tool for Damping and Fatigue Analysis.* AFIT/GSS/ENY/04M-04, Faculty Advisor: Dr. Anthony Palazotto, DSN 785-3636 x4599. Sponsor: AFRL/PRPG.

JOHNSON, BENJAMIN L. *Isomer Energy Source for Space Propulsion System.* AFIT/GA/ENY/04M-01, Faculty Advisor: Dr. Milton Franke, DSN 785-3636 x4720. Sponsor: AFRL/PRAS.

JUTTE, ANDREW J. *Effect of a Variable Normal Load on Fretting Fatigue Behavior of Ti-6AI-4V.* AFIT/GAE/ENY/04M-09, Faculty Advisor: Dr. Shankar Mall, DSN 785-3636 x4587. Sponsor: AFRL/PRTC.

MALONE, KYLE P. *Detached Eddy Simulation Analysis of Pak-B Low Pressure Turbine Blade.* AFIT/GAE/ENY/04J-06, Faculty Advisor: Dr. Paul I. King, DSN 785-3636 x4314. Sponsor: AFRL/PRTT.

MCMILLAN, ROBERT J. *Shock Tube Investigation of Pressure and Ion Sensors Used in Pulse Detonation Engine Research.* AFIT/GAE/ENY/04J-07, Faculty Advisor: Dr. Paul I. King, DSN 785-3636 x4314. Sponsor: AFRL/PRTC.

PANZENHAGEN, KRISTIN L. *Detonation Branching in a PDE with Liquid Hydrocarbon Fuel.* AFIT/GAE/ENY/04M-13, Faculty Advisor: Dr. Paul I. King, DSN 785-3636 x4628. Sponsor: AFRL/PRTC.

ZDENEK, JEFFREY S. *Ion Based Pressure Sensor for Pulse Detonation Engines.* AFIT/GAE/ENY/04M-17, Faculty Advisor: Dr. Ralph A. Anthenien, DSN 785-3636 x4643. Sponsor: AFRL/PRTS.

AFRL: SENSORS DIRECTORATE

BOSS, NOAH C. *Development of an Inertial Measurement Unit (IMU) Emulator for Hardware-in-the-Loop Testing of Integrated Navigation Systems.* AFIT/GE/ENG/03-22, Faculty Advisor: Dr. John F. Raquet, DSN 785-3636 x4580. Sponsor: AFRL/SNRP.

BROOKS, MATTHEW R. *Atmospheric Simulation Using a Liquid Crystal Wavefront Controlling Device.* AFIT/GE/ENG/04-01, Faculty Advisor: Maj Matthew E. Goda, DSN 785-2024. Sponsor: AFRL/SNJT.

CALDWELL, JAMES T. *Forward Looking Radar: Interference Modeling, Characterization, and Suppression.* AFIT/GE/ENG/04-02, Faculty Advisor: Maj Todd B. Hale, DSN 785-3636 x4639. Sponsor: AFRL/SNR.

CLABAUGH, DONALD J. *Characterization of Ultra Wide Band Multiple Access Performance Using Time Hopped-Biorthogonal Pulse Position Modulation.* AFIT/GE/ENG/04-03, Faculty Advisor: Dr. Michael A. Temple, DSN 785-6565 x4279. Sponsor: AFRL/SNRW.

DIAZ, RICARDO A. *Target Recognition Using Linear Classification of High Range Resolution Radar Profiles.* AFIT/GE/ENG/04-06, Faculty Advisor: Dr. Steven C. Gustafson, DSN 785-3636 x4598. Sponsor: AFRL/SNAT.

DOREY, SEAN P. *Stepped Waveguide Electromagnetic Material Characterization Technique.* AFIT/GEO/ENG/04-01, Faculty Advisor: Dr. Michael J. Havrilla, DSN 785-3636 x4582. Sponsor: AFRL/SNS.

KELLER, TRACI A. *Optimization of a Quantum Cascade Laser Operating in the Terahertz Frequency Range Using a Multiobjective Evolutionary Algorithm.* AFIT/GCE/ENG/04-03, Faculty Advisor: Dr. Gary B. Lamont, DSN 785-3636 x4718. Sponsor: AFRL/SN.

*LAVIERS, KENNARD R. *Concurrent-Cognitive Mapping and Localization Using Expectation Maximization.* AFIT/GCS/ENG/04-10, Faculty Advisor: Dr. Gilbert L. Peterson, DSN 785-6565 x4281. Sponsors: AFRL/MNGN and AFRL/SNRP.

LOPEZ, JUAN *An Analysis of Electromagnetic Interference (EMI) of Ultra Wideband (UWB) and IEEE 802.1 A Wireless Local Area Network (WLAN) Employing Orthogonal Frequency Division Multiplexing (OFDM).* AFIT/GIR/ENG/04-01, Faculty Advisor: Dr. Richard A. Raines, DSN 785-6565 x4278. Sponsor: AFRL/SN.

MARSH, ERIC D. *Thin Film Encapsulation of Radio Frequency (RF) Microelectromechanical Systems (MEMS) Switches.* AFIT/GE/ENG/04-16, Faculty Advisor: Capt Paul E. Kladitis, DSN 785-3636 x4595. Sponsor: AFRL/SNDD.

*MORRIS, THOMAS A. *Analysis of Uncertainties in Infrared Camera Measurements of a Turbofan Engine in an Altitude Test Cell.* AFIT/GE/ENP/04-01, Faculty Advisor: Dr. Michael A. Marciniak, DSN 785-3636 x4529. Sponsors: AFRL/SNS and GE Aircraft Engines.

MUEND, PETER E. *Cross Range Smear Characterization in Xpatch ISAR Images.* AFIT/GE/ENG-04-18, Faculty Advisor: Maj Todd Hale, DSN 785-2024. Sponsor: AFRL/ SNAS.

NUNEZ, ABEL S. *Interference Suppression in Multiple Access Communications Using M-ARY Phase Shift Keying Generated via Spectral Encoding.* AFIT/GE/ENG/04-20, Faculty Advisor: Dr. Michael Temple, DSN 785-6565 x4279. Sponsor: AFRL/SNRW.

POWERS, DONALD W. *Characterization of the Target-Mount Interaction in Radar Cross Section Measurement Calibrations.* AFIT/GE/ENG/04-21, Faculty Advisor: Dr. Michael J. Havrilla, DSN 785-3636 x4582. Sponsor: AFRL/SNS.

SMITH, BRYAN E. *Enhancing the Instantaneous Dynamic Range of Electronic Warfare Receivers Using Statistical Signal Processing.* AFIT/GE/ENG/04-22, Faculty Advisor: Dr. Meir Pachter, DSN 785-6565 x4280. Sponsor: AFRL/SNRP.

AFRL: SPACE VEHICLES DIRECTORATE

KIM, KYONGSON S. *Controlling the Primary Mirror in a Space-Based Telescope Utilizing an Eigenstructure Assignment Technique.* AFIT/GAE/ENY/04M-10, Faculty Advisor: Maj Richard G. Cobb, DSN 785-3636 x4559. Sponsor: AFRl/VSSV.

PRESS, MATTHEW J. *Geometric Approach to Orbital Formation Mission Design.* AFIT/GE/ENY/04M-04, Faculty Advisor: Dr. Steven G. Tragesser, DSN 785-3636 x4559. Sponsor: AFRL/VSES.

SEO, JOHN S. *Analytical Solution for Low-Thrust Minimum Time Control of a Satellite Formation.* AFIT/DS/ENY/04-04, Faculty Advisor: Dr. William E. Wiesel, DSN 785-6565 x4312. Sponsor: AFRL/VSES.

STRAIGHT, STANLEY D. *Maneuver Design for Fast Satellite Circumnavigation.* AFIT/GA/ENY/04M-05, Faculty Advisor: Dr. Steven G. Tragesser, DSN 785-3636 x4568. Sponsor: AFRL/VSES.

ELECTRONIC SYSTEMS CENTER

ORMSBY, CHARLES D. *Generalized Residual Multiple Model Adaptive Estimation of Parameters and States.* AFIT/DS/ENG/03-08, Faculty Advisor: Dr. John F. Raquet, DSN 785-3636 x4580. Sponsor: ESC/GAL.

WARNER ROBINS AIR LOGISTICS CENTER

DOREY, ELLEN L. *Recovering from a Stalled Change Initiative: A Case of Correcting Implementation Mistakes.* AFIT/GEM/ENV/04M-08, Faculty Advisor: Maj Daniel T. Holt, DSN 785-3636 x4800. Sponsor: Det 3, WRALC.

3.3.5 AIR FORCE SPACE COMMAND

DESTEFANO, GREGORY V. *Agent Based Simulation Seas Evaluation of DoD-AF Architecture.* AFIT/GOR/ENS/04-05, Faculty Advisor: Dr. John O. Miller, DSN 785-6565 x4326. Sponsor: SMC/TD.

FAULSTICH, MARK J. *Data Sorting and Orbit Determination of Tethered Satellite Systems.* AFIT/GSS/ENY/04M-03, Faculty Advisor: Dr. Steven G. Tragesser, DSN 785-3636 x4568. Sponsor: AFSPC/XPY.

HOGUE, CHRISTOPHER M. *Comparative Study on the Use of Coherent Radar-Derived Electric Fields vs. Statistical Electric Fields for the Initialization of a High-Latitude Ionospheric Model.* AFIT/GAP/ENP/04-03, Faculty Advisor: Maj Clark E. Groves, DSN 785-3636 x4505. Sponsor: Det 11 SMC (CISF) Space Missile Command.

WRUCK, DEAN E. *GPS M-Code Signal Modeling for Radar Receiver Characterization.* AFIT/GE/ENG/04-25, Faculty Advisor: Dr. Michael A. Temple, DSN 785-6565 x4279. Sponsor: SMC/CZE.

ZINN, ANDREW W. *The Use of Integrated Architectures to Support Agent Based Simulation: An Initial Investigation.* AFIT/GSE/ENY/04M-01, Faculty Advisor: Dr. David R. Jacques, DSN 785-3355 x3329. Sponsor: SMC/TD.

3.3.6 AIR MOBILITY COMMAND

BELSON, BRIAN L. *An Automated Method of Predicting Clear-Air Turbulence.* AFIT/GM/ENP/04-02, Faculty Advisor: Lt Col Michael K. Walters, DSN 785-2012. Sponsor: 15th Operational Weather Squadron.

FOLSOM, MANUEL I. *Developing a Forecast Tool for Cloud to Ground Lightning in the North Central and Northeastern United States.* AFIT/GM/ENP/04-05, Faculty Advisor: Lt Col Michael K. Walters, DSN 785-3636 x4681. Sponsor: 15th Operational Weather Squadron.

LUSSIER, III LOUIS L. *A Statistically-Based Method for Predicting Fog and Stratus Dissipation.* AFIT/GM/ENP/04-09, Faculty Advisor: Maj Steven T. Fiorino, DSN 785-3636 x4506. Sponsor: 15th OWS.

MURRAY, SCOTT M. *Prepositioned Trailers for Aircraft Battle Damage Support.* AFIT/GLM/ENS/04-13, Faculty Advisor: Maj Stanley E. Griffis, DSN 785-3636 x4708. Sponsor: AMC/ABDR/PO.

3.3.7 AIR NATIONAL GUARD

SITZABEE, WILLIAM E. *Policy Analysis of Chapter 101A Readiness and Range Preservation, of the National Defense Authorization Act for Fiscal Year 2004.* AFIT/GEM/ENV/04M-16, Faculty Advisor: Dr. Charles A. Bleckmann, DSN 785-3636 x4721. Sponsor: HQ ANG/CEVP.

3.3.8 PACIFIC AIR FORCES

LEFFLER, JONATHAN W. *Feasibility of Using Classification Analyses to Determine Tropical Cyclone Rapid Intensification.* AFIT/GM/ENP/04-07, Faculty Advisor: Lt Col Ronald P. Lowther, DSN 785-3636 x4645. Sponsor: PACAF/JTWC.

LEWIS, DANIELLE M. *Forecasting Advective Sea Fog with the Use of Classification and Regression Tree Analyses for Kunsan Air Base.* AFIT/GM/ENP/04-08, Faculty Advisor: Lt Col Ronald P. Lowther, DSN 785-3636 x4645. Sponsor: PACAF/8th OSS/OSW.

3.3.9 US AIR FORCE ACADEMY

BEVERLY, MATTHEW H. *Cross-Service Investigation of Geographical Information Systems.* AFIT/GEM/ENV/04M-01, Faculty Advisor: Dr.Alan R. Heminger, DSN 785-3636 x4797. Sponsor: HQ USAFA/DFEI.

3.3.10 USAF FIELD OPERATING AGENCIES

AIR FORCE CENTER FOR ENVIRONMENTAL EXCELLENCE

*CHOSA, PETER G. *Modeling a Field Application of In Situ Bioremediation of Perchlorate-Contaminated Groundwater Using Horizontal Flow Treatment Wells (HFTWs).* AFIT/GEM/ENV/04M-05, Faculty Advisor: Dr. Mark N. Goltz, DSN 785-3636 x4638. Sponsors: AFCEE/ERS and DoD/OSD/ESTCP.

RUFE, PRESTON F. *Application of Horizontal Flow Treatment Wells for In Situ Treatment of MTBE-Contaminated Groundwater.* AFIT/GEM/ENV/04M-15, Faculty Advisor: Dr. Mark N. Goltz, DSN 785-3636 x4638. Sponsor: AFCEE/ERT.

STEVENS, MARK R. *An Evaluation of Formic Acid as an Electron Donor for Palladium (Pd) Catalyzed Destruction of Nitroaromatic Compounds.* AFIT/GEM/ENV/04M-19, Faculty Advisor: Dr. Mark N. Goltz, DSN 785-3636 x4638. Sponsor: AFCEE/ERS.

WARNKE, DAVID M. *Making the Business Case for Sustainable Design in the Department of Defense.* AFIT/GEM/ENV/04M-20, Faculty Advisor: Dr. Charles A. Bleckmann, DSN 785-3636 x4721. Sponsor: AFCEE.

WELLING, MATTHEW D. *An Evaluation of Formate as an Electron Donor to Facilitate Palladium (Pd) - Catalyzed Destruction of Chlorinated Aliphatic Hydrocarbons.* AFIT/GEM/ENV/04M-21, Faculty Advisor: Dr. Mark Goltz, DSN 785-3636 x4638. Sponsor: HQ AFCEE/ERS.

AIR FORCE CIVIL ENGINEER SUPPORT AGENCY

BRAZIEL, CARLOS. *Using Value-Focused Thinking to Evaluate the Effectiveness of Air Force Utility Privatization.* AFIT/GEM/ENV/04M-04, Faculty Advisor: Lt Col Alfred E. Thal, Jr., DSN 785-3636 x4798. Sponsor: HQ Air Force Civil Engineering Support Agency.

DUKE, JAMES S. *Decision Analysis Using Value Focused Thinking to Select Renewable Energy Source.* AFIT/GEM/ENV/04M-09, Faculty Advisor: Lt Col Ellen C. England, DSN 785-3636 x4711. Sponsor: AFCESA/CESM.

DUNCAN, JUSTIN H. *The Application of Value Focused Thinking to Utilities Privatization Source Selection.* AFIT/GEM/ENV/04M-10, Faculty Advisor: Lt Col Alfred E. Thal, DSN 785-3636 x4798. Sponsor: AFCESA.

AIR FORCE COMMUNICATIONS AGENCY

BALDA, DAVID A. *A Descriptive Case Study of Electronic Records Taxonomy Development at the Central Intelligence Agency (CIA).* AFIT/GIR/ENV/04M-02, Faculty Advisor: Lt Col Summer E. Bartczak, DSN 785-3636 x4826. Sponsor: HQ AFCA/ITCR.

CARROLL, STEPHANIE E. *Improving TCP Performance by Estimating Errors in a Long Delay, High Error Rate Environment.* AFIT/GCS/ENG/04-04, Faculty Advisor: Dr. Rusty O. Baldwin, DSN 785-6565 x4445. Sponsor: Air Force Communications Agency.

CRUZ, CHARLIE I. *Netwars Based Study of a Joint Stars Link-16 Network.* AFIT/GCS/ENG/04-06, Faculty Advisor: Maj Rusty O. Baldwin, DSN 785-6565 x4445. Sponsor: AFCA/ITAI.

AIR FORCE PERSONNEL OPERATIONS AGENCY

MOON, SANG H. *Decision Analysis with Value Focused Thinking as a Methodology to Assess Air Force Officer Retention Alternatives.* AFIT/GOR/ENS/04-08, Faculty Advisor: Maj Jeffrey D. Weir, DSN 785-3636 x4538. Sponsor: AFPOA/DPX.

AIR FORCE STUDIES AND ANALYSES

BAROSKO, STEVEN J. *Effects of Uncertainty on Real World Aerospace Mission Data.* AFIT/GOR/ENS/04-01, Faculty Advisor: Dr. John O. Miller, DSN 785-3636 x4326. Sponsor: AFSAA.

AIR FORCE TECHNICAL APPLICATION CENTER

HUNT, TERENCE D. *Super-Resolution Using Adaptive Gaussian Radial Basis Function Interpolation.* AFIT/GE/ENG/04-15, Faculty Advisor: Dr. Steven C. Gustafson, DSN 785-3636 x4598. Sponsor: AFTAC/LSC.

MILLER, TY E. *Modeling Multiple Component Uranium Enrichment Cascades.* AFIT/GNE/ENP/04-04, Faculty Advisor: Dr. Kirk A. Mathews, DSN 785-6565 x4508. Sponsor: AFTAC/TMN.

WAGER, NICHOLAS. *A Rapidly-Converging Alternative to Source Iteration for Solving the Discrete Ordinates Radiation Transport Equations in Slab Geometry.* AFIT/DS/ENP/04-01, Faculty Advisor: Dr. Kirk A. Mathews, DSN 785-3636 x4508. Sponsor: AFTAC/TM.

AIR FORCE WEATHER AGENCY

ANDERSON, KEITH A. *Derivation of a Self-Consistent Auroral Oval Model Using the Auroral Boundary Index.* AFIT/GAP/ENP/04-01, Faculty Advisor: Maj Devin J. Della-Rose, DSN 785-3636 x4514. Sponsor: Air Force Weather Agency, HQ AFWA/DNX.

KINKELA, SHAUNA M. *Estimating Equatorial F-Region Daytime Vertical ExB Drift Velocities from Ground-Based Magnetometer Measurements in the Philippine Longitude Sector.* AFIT/GAP/ENP/04-04, Faculty Advisor: Maj Devin J. Della-Rose, DSN 785-3636 x4514. Sponsor: Air Force Weather Agency, HQ AFWA/DNX.

MILLER, SCOTT M. *Verification of the Mountain Wave Forecast Model's Stratospheric Turbulence Forecasts Using Sounding Data and Pilot Reports.* AFIT/GM/ENP/04-10, Faculty Advisor: Lt Col Michael K. Walters, DSN 785-3636 x4681. Sponsor: Air Force Weather Agency, HQ AFWA/DNXT.

3.3.11 DEPARTMENT OF DEFENSE

ANDERSON, JASON. *Optimal Constellation Design for Orbital Munitions Delivery System.* AFIT/GSS/ENY/04M-01, Faculty Advisor: Dr. Steven G. Tragesser, DSN 785-3636 x4568. Sponsor: NSSO.

COOK, MICHAEL T. *Improving the Estimation of Military Worth of the Advanced Tactical Laser Through Simulation Aggregation.* AFIT/GOR/ENS/04-04, Faculty Advisor: Dr. John O. Miller, DSN 785-6565 x4326. Sponsor: HEL JTO/AFSAA.

FOX, GREGORY D. *Comparison of a Conceptual Model and Objective Indicators of Extratropical Transition in the Western North Pacific.* AFIT/GM/ENP/04M-06, Faculty Advisor: Lt Col Ronald P. Lowther, DSN 785-3636 x4645. Sponsor: JTWC.

HOLSTEIN, RAYMOND G. *Structural Design and Analysis of Rigidizable Space Shuttle Experiment.* AFIT/GAE/ENY/04M-08, Faculty Advisor: Dr. Anthony Palazotto, DSN 785-3636 x4599. Sponsor: NRO/IMINT/RNTS.

LINDEMUTH, STEVEN N. *Characterization and Ground Test of an Inflatable Rigidizable Space Experiment.* AFIT/GSS/ENY/04M-05, Faculty Advisor: Maj Richard G. Cobb, DSN 785-3636 x4559. Sponsor: NRO/IMINT/RNTS.

MOODY, DAVID C. *Microprocessor-Based Systems Control for the Rigidized Inflatable Get-Away-Special Experiment.* AFIT/GE/ENG/04-17, Faculty Advisor: Dr. Richard A. Raines, DSN 785-6565 x4278. Sponsor: NRO/IMINT/RNTS.

DEFENSE MODELING AND SIMULATION OFFICE

CHAMPAGNE, LANCE E. *Development Approaches Coupled with Verification and Validation Methodologies for Agent-Based Mission-Level Analytical Combat Simulations.* AFIT/DS/ENS/03-02, Faculty Advisor: Dr.Raymond P. Hill, DSN 785-2549. Sponsor: DMSO.

SWAYNE, DANIEL E. *Visual Unified Modeling Language for the Composition of Scenarios in Modeling and Simulation Systems.* AFIT/GCE/ENG/04-19, Faculty Advisor: Lt Col Michael Talbert, DSN 785-3636 x4716. Sponsor: Defense Modeling and Simulation Office, DMSO.

DEFENSE THREAT REDUCTION AGENCY

BONAVITA, ANGELO M. *Low Temperature Hall Measurements of Neutron Irradiated Silicon Carbide.* AFIT/GNE/ENP/04-01, Faculty Advisor: LTC James C. Petrosky, DSN 785-3636 x4600. Sponsor: DTRA/CSNP.

DE LA VEGA, ROBIN L. *Mesonet Sensor Siting in Support of the 2004 Olympic Games in Athens, Greece.* AFIT/GM/ENP/04-04, Faculty Advisor: Lt Col Ronald P. Lowther, DSN 785-3636 x4645. Sponsor: DTRA.

DUVALL, SEAN P. *Sensitivity Analysis of Visual Interactive Site Analysis Code.* AFIT/GNE/ENP/04-03, Faculty Advisor: Dr. Ronald F. Tuttle, DSN 785-6565 x4536. Sponsor: DTRA/CSNP.

MORRIS, DOUGLAS B. *A Predictive Technique for Forecasting the Isotopic Composition of Radioactive Fallout.* AFIT/DS/ENP/05-02, Faculty Advisor: Dr. Charles J. Bridgman, DSN 785-3636 x4679. Sponsor: DTRA Nuclear Programs Agency.

NEW, JON C. *Modeling Plutonium Production at a Gas Cooled Reactor.* AFIT/GNE/ENP/04-05, Faculty Advisor: Dr. Ronald F. Tuttle, DSN 785-3636 x4536. Sponsor: DTRA/CSNP.

SATTLER, JAMES M. *An Analysis of the Effects of Low Energy Electron Radiation on $Al_xGa_{1-x}N/GaN$ Modulation-Doped Field-Effect Transistors.* AFIT/GE/ENP/04-02, Faculty Advisor: LTC James C. Petrosky, DSN 785-6565 x4600. Sponsor: DTRA/CSNP.

SEVERSON, MICHAEL B. *An Experimental Design for Measuring in SITU Radiation Damage to a Piezoelectric Transducer.* AFIT/GNE/ENP/04-06, Faculty Advisor: LTC James C. Petrosky, DSN 785-3636 x4562. Sponsor: DTRA/CSNP.

SULHAM, CLIFFORD V. *Special Nuclear Material Imaging Using a High Purity Germanium Double Sided Strip Detector.* AFIT/GNE/ENP-04-07, Faculty Advisor: Dr. Larry W. Burggraf, DSN 785-3636 x4507. Sponsor: DTRA/TDND.

WILLIAMS, CHRISTOPHER S. *Plutonium Isotopic Ratio Determination Using Compton Spectrometer System.* AFIT/GNE/ENP/04-08, Faculty Advisor: Dr. Larry W. Burggraf, DSN 785-6565 x4507. Sponsor: DTRA/TDND.

NATIONAL SECURITY AGENCY

BIAS, DANNY R. *An Analysis of the Performance and Security of J2SDK 1.4 JSSE Implementation of SSL/TLS.* AFIT/GCS/ENG/04-02, Faculty Advisor: Dr. Richard A. Raines, DSN 785-6565 x4278. Sponsor: TD/C4 NSA.

BOGGS, JEFFREY A. *Geolocation of an Audio Source in a Multipath Environment Using Time-of-Arrival.* AFIT/GCS/ENG/04-03, Faculty Advisor: Maj Rusty O. Baldwin, DSN 785-6565 x4445. Sponsor: NSA/R5.

GREEN, JOSHUA D. *Implementing Institute of Electrical and Electronics Engineers (IEEE) 802.11 Standard Medium Access Control Protocol for Wireless Local Area Networks (LANS) on a Laboratory Hardware Prototype.* AFIT/GE/ENG/04-11, Faculty Advisor: Dr. Rusty O. Baldwin, DSN 785-6565 x4445. Sponsor: National Security Agency.

HENSON, MICHAEL J. *Machine Learning Techniques for Characterizing IEEE 802.1 1B Encrypted Data Streams.* AFIT/GCS/ENG/04-08, Faculty Advisor: Maj Rusty O. Baldwin, DSN 785-3636 x4612. Sponsor: National Security Agency.

KUNTZELMAN, JAMES B. *Comparative Analysis of Active and Passive Mapping Techniques in an Internet-Base Local Area Network.* AFIT/GCS/ENG/04-09, Faculty Advisor: Dr. Richard A. Raines, DSN 785-6565 x4278. Sponsor: TD/C4 NSA.

MANCINI, STEPHEN W. *Automating Security Protocol Analysis.* AFIT/GCS/ENG/04-12, Faculty Advisor: Maj Robert P. Graham, DSN 785-3636 x4715. Sponsor: NSA/I333.

PETERSON, BRIAN S. *Device Discovery in Frequency Hopping Wireless Ad Hoc Networks.* AFIT/DS/ENG/04-06, Faculty Advisor: Maj Rusty O. Baldwin, DSN 785-6565 x4445. Sponsor: National Security Agency.

SORGAARD, DUANE C. *Geographic Location of a Computer Node Examining a Time-to-Location Algorithm and Multiple Autonomous System Networks.* AFIT/GCS/ENG/04-17, Faculty Advisor: Maj Rusty Baldwin, DSN 785-6565 x4445. Sponsor: NSA/R5.

TURNBAUGH, EUGENE D. *Geographically Locating an Internet Node Using Network Latency Measurement.* AFIT/GCS/ENG/04-21, Faculty Advisor: Maj Rusty O. Baldwin, DSN 785-6565 x4445. Sponsor: NSA/R5.

WATTS, NEAL A. *Packet Analysis of Unmodified Bluetooth Communication Devices.* AFIT/GCS/ENG/04-22, Faculty Advisor: Dr. Richard A. Raines, DSN 785-6565 x4278. Sponsor: NSA/R5.

OFFICE OF THE SECRETARY OF DEFENSE

ABATE, CHRISTOPHER C. *An Analysis of Mission Systems Cost Growth and Implementation of Acquisition Reform Initiatives Using a Hybrid Adjusted Cost Growth Model.* AFIT/GCA/ENV/04M-01, Faculty Advisor: Maj Michael A. Greiner, DSN 785-3636 x4588. Sponsor: OSD/PA&E.

BELKO, MICHAEL E. *Government Venture Capital: A Case Study of the In-Q-Tel Model.* AFIT/GAQ/ENV/04M-01, Faculty Advisor: Lt Col Timothy S. Reed, DSN 785-2998. Sponsor: DOD/OSD/OFT (Office of Force Transformation).

*CHOSA, PETER G. *Modeling a Field Application of In Situ Bioremediation of Perchlorate-Contaminated Groundwater Using Horizontal Flow Treatment Wells (HFTWs).* AFIT/GEM/ENV/04M-05, Faculty Advisor: Dr. Mark N. Goltz, DSN 785-3636 x4638. Sponsors: AFCEE/ERS and DoD/OSD/ESTCP.

HAWKINS, JOHN C. *Analysis and Forecasting of Army Operating and Support Cost for Rotary Aircraft.* AFIT/GCA/ENV/04M-03, Faculty Advisor: Maj Michael A. Greiner, DSN 785-6565 x4588. Sponsor: OSD/PA&E.

LAUBACHER, MATTHEW E. *Analysis and Forecasting of Air Force Operating and Support Cost for Rotary Aircraft.* AFIT/GCA/ENV/04M-05, Faculty Advisor: Maj Michael A. Greiner, DSN 785-3636 x4588. Sponsor: OSD/PA&E.

MARTIN, KYLE R. *A Cost Analysis of the Military Retirement System.* AFIT/GCA/ENV/04M-06, Faculty Advisor: Maj Michael A. Greiner, DSN 785-3636 x4588. Sponsor: OSD/PA&E.

PAWLING, CARL R. *Modeling and Simulation of the Military Intelligence Process.* AFIT/GOR/ENS/04-09, Faculty Advisor: Dr. J.O. Miller, DSN 785-6565 x4326. Sponsor: National Security Space Architect.

PHILLIPS, RICHARD A. *An Analysis of Aircraft Weapon Systems Cost Growth and Implementation of Acquisition Reform Initiatives Using a Hybrid Adjusted Cost Growth Model.* AFIT/GCA/ENV/04M-08, Faculty Advisor: Maj Michael A. Greiner, DSN 785-3636 x4588. Sponsor: OSD/PA&E.

SASSER, DAVID P. *Identifying the Benefits of Knowledge Management in the Department of Defense: A Delphi Study.* AFIT/GIR/ENV/04M-20, Faculty Advisor: Lt Col Summer E. Bartczak, DSN 785-3636 x4826. Sponsor: OSD/NII.

SCHUG, TODD S. *Organization to Exploit the Information Domain: A Content Analysis of the Transformation Literature.* AFIT/GIR/ENV/04M-21, Faculty Advisor: Lt Col Summer Bartczak, DSN 785-3636 x4826. Sponsor: DOD/OSD/OFT (Office of Force Transformation).

WILKES, CHRISTOPHER J. *Analysis and Forecasting of US Navy Operating and Support (O&S) Costs for Rotary Aircraft.* AFIT/GCA/ENV/04M-11, Faculty Advisor: Maj Michael A. Greiner, DSN 785-3636 x4588. Sponsor: OSD/PA&E.

WOOD, CHRISTOPHER C. *Entrepreneurial Mindset in Department of Defense (DoD) Organizations: Antecedents and Outcomes.* AFIT/GAQ/ENV/04M-14, Faculty Advisor: Lt Col Timothy Reed, DSN 785-2998. Sponsor: DOD/OSD/OFT (Office of Force Transformation).

OFFICE OF THE SECRETARY OF DEFENSE, DEFENSE ACQUISITION UNIVERSITY

DEREUS, DARRIN L. *Comparative Analysis on the Cost of Oversight for the New National Security Space Acquisition Policy-A Delphi Method Approach.* AFIT/GCA/ENV/04M-02, Faculty Advisor: Maj Michael A. Griener, DSN 785-3636 x4588. Sponsor: DAU School of Program Management (DOD/OSD/AT&L/DAU/PM).

KUDERIK, DIANE I. *Establishing a Framework for the Oversight of Major Defense Acquisition Programs-A Historical Analysis.* AFIT/GCA/ENV/04M-04, Faculty Advisor: Maj Michael A. Greiner, DSN 785-3636 x4588. Sponsor: DAU School of Program Management (DOD/OSD/AT&L/DAU/PM).

NEAL, MONROE. Establishing a Foundation to Capture the Cost of Oversight for a Major Defense Program within the Information Technology (IT) Acquisition Community. AFIT/GCA/ENV/04M-07, Faculty Advisor: Maj Michael A. Greiner, DSN 785-3636 x4588. Sponsor: DAU School of Program Management (DOD/OSD/AT&L/DAU/PM).

ROUSSEAU, GARY P. A Comparative Analysis of the Cost of Oversight of Major Defense Acquisition Programs Strictly Under the Direction of the Department of Defense 5000 Series of Instructions. AFIT/GCA/ENV/04M-09, Faculty Advisor: Maj Michael A. Greiner, DSN 785-3636 x4588. Sponsor: DAU/School of Program Management (DOD/OSD/AT&L/DAU).

US CENTRAL COMMAND

RICHARDSON, DAMON B. *Modeling and Analysis of Post-Conflict Reconstruction.* AFIT/GOR/ENS/04-10, Faculty Advisor: Dr. Richard F. Deckro, DSN 785-6565 x4325. Sponsor: CCJB-AR, CENTCOM.

US STRATEGIC COMMAND

SOLO, CHRISTOPHER J. *Phase-Type Approximations for Wear Processes in a Semi-Markov Environment.* AFIT/GOR/ENS/04-11, Faculty Advisor: Dr. Jeffrey Kharoufeh, DSN 785-3636 x4603. Sponsor: USSTRATCOM/PR12.

3.3.12 DEPARTMENT OF ENERGY

SCHANDING, GREGORY T. *A Value Focused Thinking Model for the Development and Section of Electrical Energy Source Alternatives at Military Installations.* AFIT/GEM/ENS/04M-02, Faculty Advisor: Maj Jeffery D. Weir, DSN 785-3636 x4538. Sponsor: Pacific Northwest National Laboratory.

3.3.13 DEPARTMENT OF HOMELAND SECURITY

UNITED STATES COAST GUARD

COTTRELL, DONNA L. *An Analysis of Coast Guard HH-65 Engine Reliability: A comparison of Malfunctions to Component Removals.* AFIT/GIR/ENC/04-01, Faculty Advisor: Dr. Edward White, III, DSN 785-3636 x4540. Sponsor: U.S. Coast Guard.

3.3.14 ARMY

RENZI, MICHAEL J. *An Assessment of Modern Methods for Rotor Track and Balance.* AFIT/GAE/ENY/04J-11, Faculty Advisor: Dr. Donald L. Kunz, DSN 785-3636 x4548. Sponsor: US Army RDECOM, AMRDEC.

3.3.15 ENVIRONMENTAL PROTECTION AGENCY

MARES, KEVIN A. *Aerobic Biodegradation of Alternative Fuel Oxygenates in Unsaturated Soil Columns.* AFIT/GEM/ENV04M-13, Faculty Advisor: Dr. Charles A. Bleckmann, DSN 785-3636 x4721. Sponsor: National Risk Management Research Laboratory.

3.3.16 MARINE CORPS

COLE, PAMELA J. *The United States Marine Corps Data Collaboration Requirements: Retrieving and Integrating Data From Multiple Databases.* AFIT/GIR/ENV/04M-04, Faculty Advisor: Dr. Alan R. Heminger, DSN 785-3636 x4797. Sponsor: HQMC C4 CPIA.

HAMILTON, BRIAN K. *Empowering Marine Corps System Administrators: Taxonomy of Training.* AFIT/GIR/ENV/04M-09, Faculty Advisor: Dr. Alan R. Heminger, DSN 785-3636 x4797. Sponsor: HQMC/C4.

JOHNSON, IRENE C. *Overcoming Resistance to Change: An Analysis to the Department of Defense's Anthrax Vaccine Immunization Program.* AFIT/GIR/ENV/04J-12, Faculty Advisor: Maj Daniel T. Holt, DSN 785-3636 x4800. Sponsor: HQMC C4 CP/IA, Marine Corps.

SCOTT, KELVIN B. *An Analysis of Factors that have Influenced the Evolution of Information Assurance from World War I through Vietnam to the Present.* AFIT/GIR/ENV/04M-22, Faculty Advisor: Dr. Alan R. Heminger, DSN 785-3636 x4797. Sponsor: HQMC, C4.

3.3.17 NON-FEDERAL ORGANIZATIONS

DAYTON AREA GRADUATE STUDIES INSTITUTE

SITZ, JENNIFER J. *Aeroelastic Analysis of a Joined-Wing Sensorcraft.* AFIT/GAE/ENY/04J-12, Faculty Advisor: Lt Col Robert A. Canfield, DSN 785-3636 x4723. Sponsor: DAGSI.

GE AIRCRAFT ENGINES

*MORRIS, THOMAS A. *Analysis of Uncertainties in Infrared Camera Measurements of a Turbofan Engine in an Altitude Test Cell.* AFIT/GE/ENP/04-01, Faculty Advisor: Dr. Michael A. Marciniak, DSN 785-3636 x4529. Sponsors: AFRL/SNS and GE Aircraft Engines.

ROYAL AUSTRALIAN AIR FORCE

COLBERT, MATTHEW J. *An Analysis of the Potential for Using Over-the-Horizon Radar Systems for Space Surveillance.* AFIT/GSS/ENG/04-01, Faculty Advisor: Maj Todd B. Hale, DSN 785-3636 x4639. Sponsor: AFHQ, R1-6-C105.

3.4 FUNDED RESEARCH PROJECTS

ANTHENIEN, RALPH A., (ENY)

"Measurements and Modeling of a Highly Accelerated, Combusting Flow." Sponsor: AFOSR/MOA. Funding: $11,741.

"Investigation of Cavity - Vane Interaction in an Ultra Compact Combustor." Sponsor: AFOSR/MOA. Funding: $26,140.

"Investigation of the Cavity in a Cavity Design of the Ultra Compact Combustor." Sponsor: AFRL/PR. Funding: $5,000.

BAILEY, WILLIAM F., (ENP)

"Eglin High Power Microwave Short Course Offerings." Sponsor: AFRL/DE. Funding: $15,000.

"Generation and Characterization of Stable Weakly Ionized Air Plasma in Hypersonic Flows." Sponsor: DAGSI. Funding: $11,859.

BALDWIN, RUSTY O., (ENG)

"Technical Support, Air Force Communications Systems Modeling." Sponsor: AFCA/ITAI. Funding: $58,337.

"Hardware-Accelerated Simulation." Sponsor: AFIWC. Funding: $9,500.

"Classification and Analysis of Wireless and Local Area Network Communication Techniques." Sponsor: NSA. Funding: $36,169.

BAUER, KENNETH W., JR., (ENS)

"Sensor Fusion." Sponsor: ACC. Funding: $17,000.

"Sensor Fusion." Sponsor: AFOSR. Funding: $68,029.

BRADY, STEPHAN P., Lt Col (ENS)

"Study of Transformation in Air Force Supply Chains." Sponsor: HQ USAF/IL. Funding: $15,000.

BURGGRAF, LARRY W., (ENP)

"Theoretical Studies on Oxidation Mechanisms and Spectroscopy for Ground State and Excited State SimCn Molecular Clusters." Sponsor: AFOSR/MOA. Funding: $26,400.

"Spectroscopy and Kinetics of UO_2 Fuel Oxidation, Hydrolysis and Radiolysis: Application to Radioactive Waste Management." Sponsor: DOE. Funding: $ 108,300.

CAIN, STEPHEN C., (ENG)

"Higher order statistical feature extraction from laser vibrometry data for target identification." Sponsor: AFRL/SNJ. Funding: $20,000.

"Laser Vision Image Processing Algorithm Application." Sponsor: ESC/SRCC. Funding: $15,000.

CANFIELD, ROBERT A., (ENY)

"System Design Innovation using Multi-Disciplinary Optimization and Simulation." Sponsor: AFOSR/NI. Funding: $9,436.

"Active Vibration Control of F-16 Ventral Fin." Sponsor: AFRL/VA. Funding: $7,525.

"Analytical Certification and Multi-Disciplinary Integration." Sponsor: DAGSI. Funding: $9,565.

CHILTON, LAWRENCE K., (ENC)

"Outreach to Institutions of Higher Learning." Sponsor: AFOSR (High Performance Computing Modernization). Funding: $42,000.

"Stochastic Integration Methods." Sponsor: DOE (Pacific Northwest National Library). Funding: $15,000.

CHRISSIS, JAMES W., (ENS)

"A Mixed Variable Generalized Pattern Search Approach for Optimization of Stochasitc Simulation Models." Sponsor: AFOSR. Funding: $30,417.

COBB, RICHARD G., (ENY)

"Closed-loop Control of a Piezo Acutated Membrane Structure." Sponsor: AFOSR/MOA. Funding: $16,900.

"Test and Validation of a Rigidized Inflatable Space Structures Experiment." Sponsor: SAF/FMBMB-AFOY. Funding: $29,936.

"Support to System Identification and Spacecraft Modeling." Sponsor: SAF/FMBMB-AFOY. Funding: $35,000.

DECKRO, RICHARD F., (ENS)

"Measurement Tool for Homeland Security." Sponsor: AF/XOR. Funding: $40,000.

"Technology Development Effort Supporting the IOTC." Sponsor: NSA. Funding: $2,984.

"Second and Third Year of the Technology Development Effort Supporting the IOTC." Sponsor: NSA/CSS. Funding: $110,000.

"Operations Research in Support of the NSA." Sponsor: NSA/R55. Funding: $20,000.

FRANKE, MILTON E., (ENY)

"Propulsion Concepts for Reusable Launch Vehicles." Sponsor: AFRL/PR. Funding: $2,500.

"Propulsion Concepts for Use of Air Isomer Energy Sources including Rocket Engines." Sponsor: AFRL/PR. Funding: $15,000.

"Aerodynamics and Flight." Sponsor: OO-ALC/MASFA. Funding: $9,500.

GODA, MATTHEW E., (ENG)

"Adaptive Optics Laboratory Test and Experimentation System." Sponsor: AFOSR/PIE DURIP. Funding: $167,851.

"High-Energy Laser (HEL) Multi-Disciplinary Research Initiative (MRI)." Sponsor: AFOSR/PIF. Funding: $39,041.

"Airborne Laser Atmospheric Compensation and Tracking Concepts." Sponsor: AFRL/DEBA. Funding: $11,000.

"Ground -Based Spectral Imagery for Space Object Characterization." Sponsor: SWC/TCP. Funding: $50,000.

GOLTZ, MARK N., (ENV)

"In-Situ Bioremediation of Perchlorate in Groundwater." Sponsor: DoD/OSD/ESTCP. Funding: $28,000.

"Evaluation of Field Methods to Estimate Contaminant Mass Discharge." Sponsor: DoD/OSD/ESTCP. Funding: $14,100.

"Impacts of DNAPL Source Zone Treatment: Experimental and Modeling Assessment of the Benefits of Partial Source Removal." Sponsor: DoD/OSD/SERDP. Funding: $16,845.

GUSTAFSON, STEVEN C., (ENG)

"Pattern Recognition Analysis of Toxicological Data." Sponsor: AFRL/HEST. Funding: $32,576.

HALE, TODD B., Maj (ENG)

"Technical Support, AFRL/SNRT." Sponsor: AFRL/SNRT. Funding: $25,000.

"Wideband Waveform Diversity for Radar." Sponsor: AFRL/SN. Funding: $50,000.

HAVRILLA, MICHAEL J., (ENG)

"Enhancing Electromagnetic Waveguide Probes for Non-Destructive Evaluation." Sponsor: AFRL/MLLP. Funding: $35,000.

"Electromagnetic Material Characterization Using Waveguide Apertures." Sponsor: AFRL/SNA. Funding: $4,345.

"Electromagnetic Modeling of Thin Dielectric Layered Structures." Sponsor: AFRL/SNS. Funding: $18,116.

HEMINGER, ALAN R., (ENV)

"Assessment of Major Approaches to Electronic Records Management (ERM)." Sponsor: AF-CIO. Funding: $10,000.

HENGEHOLD, ROBERT L., (ENP)

"Mid-Infrared Hot Electron Luminescence to Determine Quantum Well Dispersion Relations in Semiconductor Laser Structures for Infrared Countermeasures." Sponsor: AFOSR/PIF. Funding: $23,427.

"Laser-Optics and Beam Propagation Short Courses." Sponsor: AFFTC (Airborne Laser). Funding: $20,000.

"AFIT EESI DE Internships." Sponsor: AFRL/DE (Directed Energy Professional Society's Educational Committee). Funding: $30,000.

JACQUES, DAVID R., (ENY)

"Research Activities in Support of AFRL/VACA's Autonomous and Cooperative UAV Control Work." Sponsor: AFRL/VACA. Funding: $10,000.

KHAROUFEH, JEFFEREY P., (ENS)

"Remaining Lifetime Prognosis vis Stochastic Degradation Models." Sponsor: AFOSR/MOA. Funding: $38,277.

"Optimal Sampling of Chemical Hazard Area." Sponsor: AFRL/HEPC. Funding: $12,000.

KING, PAUL I., (ENY)

"Pulse Detonation Wave Propagation Through a Tube Array." Sponsor: AFRL/PRS. Funding: $5,753.

"Analysis of Dynamic Stability of Aeroelastic Systems with Uncertainties." Sponsor: AFRL/VASD. Funding: $8,000.

KLADITIS, PAUL E., Capt (ENG)

"Design of MEMS Tribology Study Devices." Sponsor: AFRL/MLBT. Funding: $3,864.

"Protein Impregnated Polymer (PIP) Film Infrared Sensor Using Suspended Microelectromechanical Systems (MEMS) Pixels." Sponsor: AFRL/MLPJE. Funding: $16,500.

"Behavior Based Power Scavenging Microrobots." Sponsor: AFRL/MNAV. Funding: $23,474.

"Design of Microscale Safe and Arm Devices ("S&A" on a Chip")." Sponsor: AFRL/MNMF. Funding: $10,000.

"The Effect of Triboelectrification on MEMS RF Switch Dynamics." Sponsor: AFRL/SNF. Funding: $12,000.

LAMONT, GARY B., (ENG)

"Content-Based 3D Information Compression for Real-Time Image and Signal Detection." Sponsor: DAGSI. Funding: $5,543.

LIEBST, BRADLEY S., (ENY)

“HCF behavior of structural materials for gas turbine engines at AFIT." Sponsor: AFRL/ML. Funding: $55,981.

"HCF behavior of structural materials for gas turbine engines." Sponsor: AFRL/PR. Funding: $40,635.

LOTT, JAMES A., (ENG)

"Microelectromechanical Tunable High Output Power Quantum Dot Laser Diodes." Sponsor: AFOSR/MOA. Funding: $38,544.

MALL, SHANKAR (ENY)

"Fretting Fatigue Crack Initiation Mechanism." Sponsor: AFOSR/MOA. Funding: $29,694.

"A Scanning Probe Based Technique for Simultaneous Mapping of Elastic and Adhesive Properties in Nanotube Reinforced Composites." Sponsor: AFOSR/MOA. Funding: $18,216.

"Fretting Fatigue Of Titanium Alloys." Sponsor: AFRL/MLF. Funding: $70,584.

"Characterization of Fretting Fatigue Behavior in Titanium Alloys." Sponsor: AFRL/MLF. Funding: $32,000.

"Fretting Fatigue Damage Evaluation of Coatings." Sponsor: AFRL/MLF. Funding: $20,000.

"Characterization of Creep Behavior of Oxide/Oxide." Sponsor: AFRL/PRTS. Funding: $5,000.

"Residual Strength Behavior of Cracked Panels Repaired with Bonded Composite Patch." Sponsor: AFRL/VASM. Funding: $23,657.

"Non-Destructive Evaluation Methods to Quantify Fretting Damage in Materials." Sponsor: DAGSI. Funding: $55,325.

MAPLE, RAYMOND C., Lt Col (ENY)

"Research Support to Air Force Seek Eagle Office." Sponsor: 46 SK/SKE. Funding: $15,620.

"Investigation of Store-Induced Limit Cycle Oscillation." Sponsor: AFRL/VA. Funding: $12,000.

"**MARCINIAK, MICHAEL A., (ENP)**

"Time-resolved luminescence spectroscopy to determine carrier dynamics in mid-infrared semiconductor quantum well optoelectronic devices for Air Force applications." Sponsor: AFOSR/MOA. Funding: $21,669.

"Stress Analysis of SiC MEMS fuzes using Raman spectroscopy." Sponsor: AFRL/MNGS. Funding: $2,324.

MATHEWS, KIRK A., (ENP)

"AFTAC/TM - AFIT/EN MOA 2004 Research." Sponsor: AFTAC/TMN. Funding: $42,032.

MAYBECK, PETER S., (ENG)

"Cost-Function-Based Gaussian Mixture Reduction Applied to Target Tracking." Sponsor: AFOSR/NM. Funding: $52,784.

MCMULLAN, RICHARD J., Maj (ENY)

"Scramjet Flow Field Control Using Magnetogasdynamics." Sponsor: AFOSR/MOA. Funding: $31,389.

"High-Performance/High-Fidelity Tool for Magnetogasdynamic Flow Control." Sponsor: AFRL/VAAC. Funding: $20,000.

MILLER, JOHN O., (ENS)

"Air Force Standard Analysis Toolkit (AFSAT) Support." Sponsor: AF/XIWM. Funding: $65,000.

"Agent Modeling for Defense Modeling and Simulation Office." Sponsor: AFRL/HES. Funding: $26,154.

"Research Support for NSSA." Sponsor: NSSA. Funding: $25,000.

"Research Support for National Security Space Office (NSSO)." Sponsor: NSSA. Funding: $25,000.

MILLS, ROBERT F., (ENG)

"Development of an Insider Threat Laboratory." Sponsor: NSA. Funding: $20,000.

MOORE, JAMES T., (ENS)

"Application of Metaheuristics to Air Force Problems." Sponsor: AFOSR/NI. Funding: $22,408.

"Application of Metaheuristics to Air Force Problems." Sponsor: AFOSR/NM. Funding: $68,301.

OXLEY, MARK E., (ENC)

"The Performance of Sensor/Classifier Fusion." Sponsor: AFRL/SNAT. Funding: $20,000.

"Mathematical Theory of the Integration of Sensing, Processing, and Exploitation." Sponsor: DARPA. Funding: $60,649.

PACHTER, MEIR (ENG)

"Cooperative Control and Estimation." Sponsor: AFOSR/MOA. Funding: $52,260.

"Batch Maximum Likelihood Estimation for Tracking." Sponsor: AFRL/SNAT. Funding: $20,000.

"The Instantaneous Dynamic Range of EW Receivers." Sponsor: AFRL/SNRP. Funding: $10,000.

"Cooperative Control." Sponsor: AFRL/VACA. Funding: $20,000.

"Strategies for Human-Automaton Resource Entity Deployment." Sponsor: DARPA. Funding: $6,676.

PALAZOTTO, ANTHONY N., (ENY)

"Gouging Mitigation by Considering the Effects of Coatings, Nonequilibrium Thermodynamics and Material Failure." Sponsor: AFOSR/NM. Funding: $101,159.

"Thermal Evaluations of Polymers." Sponsor: AFRL/MLBC. Funding: $5,000.

"High Cycle Fatigue." Sponsor: AFRL/PR. Funding: $25,000.

"Model Aided Damage Detection in Composite Structures." Sponsor: AFRL/VA. Funding: $17,796.

"Evaluation of Coatings Applied to a Dummy Blade." Sponsor: AFRL/VA. Funding: $30,000.

"Acoustic Effects on Plates." Sponsor: AFRL/VASM. Funding: $20,000.

"Evaluation of Constitutive Constants for High Strain Rates." Sponsor: AFRL/VASM. Funding: $18,000.

PERRAM, GLEN P., (ENP)

"Manufacture of YBCO Tapes: Gas Phase Optical Diagnostics." Sponsor: AFOSR/MOA. Funding: $30,107.

"Closed Cycle Chemical Laser: ElectriCOIL." Sponsor: AFOSR/NL. Funding: $81,058.

"Optical Diagnostics for MOCVD deposition of HTS films." Sponsor: AFRL/PRPG. Funding: $20,000.

"High Energy Laser Weapons: Modeling and Simulation Phase IIB, Delivery of Engagement Codes." Sponsor: High Energy Laser Joint Technology Office. Funding: $420,000.

PETERSON, GILBERT L., (ENG)

"Blind Steganalysis with Geometric Hyper-Dimensional Classifiers." Sponsor: AFRL/IF. Funding: $20,000.

"Blind Steganography Detection Using a Computational Immune System Approach." Sponsor: AFRL/IFEC. Funding: $10,277.

PETROSKY, JAMES C., LTC (ENP)

"Characterization of Radiation Effects on Fuze Components and Systems." Sponsor: AFRL/MN. Funding: $1,975.

"Studies and Educational Activities in Applied Nuclear Sciences." Sponsor: DTRA. Funding: $162,393.

QUINN, DENNIS W., (ENC)

"Reverse Engineering of Gene Networks." Sponsor: AFOSR/MOA. Funding: $4,526.

"Bioinformatic Support for Toxicogenomics." Sponsor: DAGSI. Funding: $23,543.

RAINES, RICHARD A., (ENG)

"Technical, Teaching, and Resource Support for the Software Protection Initiative and Center for INFOSEC Education and Research." Sponsor: AFRL/SNA. Funding: $158,760.

"Secure Communication in a Mobile Wireless Network Environment." Sponsor: NSA/CSS. Funding: $236,222.

"Tuition and Resource Support for the AFIT Center for Information Security Education and Research (CISER)." Sponsor: NSA/CSS. Funding: $217,915.

RAQUET, JOHN F., (ENG)

"Advanced GPS Technology and Use of Pseudolites for Flight Reference System Development." Sponsor: 746TS/XPR. Funding: $50,286.

"Improved Algorithms for Target Tracking." Sponsor: AFOSR. Funding: $14,000.

"Advanced Navigation Technology Sensor Suite." Sponsor: AFOSR PIE DURIP. Funding: $234,480.

"Non-GPS Navigation Using Optical Measurements and Signals of Opportunity." Sponsor: DARPA. Funding: $15,000.

"Non-GPS Navigation Using Optical Measurements and Signals of Opportunity." Sponsor: AFRL/MNG. Funding: $10,000.

"INS Simulation and Modeling for Hardware-in-the-loop Simulation." Sponsor: AFRL/SNR. Funding: $15,000.

"Non-GPS Precision Navigation." Sponsor: AFRL/SNRP. Funding: $40,000.

"Use of Pulsar X-Ray Signals to Improve GPS Satellite Orbit and Clock Estimation." Sponsor: AFSPC. Funding: $11,250.

REEDER, MARK F., (ENY)

"Measurement of Force and Moment Coefficients For A Fixed Wing Micro Air Vehicle." Sponsor: AFRL/MNAV. Funding: $8,230.

"Combined Computational and Experimental Aerodynamic Study of a Micro Air Vehicle." Sponsor: AFRL/MNAV. Funding: $25,000.

"Wind Tunnel Experiments Characterizing Air Vehicle Models Manufactured Via Rapid Prototyping." Sponsor: AFRL/VA. Funding: $50,000.

ROH, WON B., (ENP)

"Nonlinear optical effects in fibers and their applications to high energy lasers." Sponsor: AFRL/DEL. Funding: $86,035.

TALBERT, MICHAEL L., Lt Col (ENG)

"Image Exploitation Using Hybrid Information Retrieval Systems." Sponsor: AFOSR/MOA. Funding: $42,184.

TEMPLE, MICHAEL A., (ENG)

"Phase II Technical Support, RF Sensor Technology Division." Sponsor: AFRL/SNR. Funding: $13,782.

"Interferometric Radar Clutter Suppression." Sponsor: DAGSI. Funding: $31,459.

TENNEY, CURTIS G., Maj (ENV)

"Cost Analysis Research in Support of OSD Program Analysis and Evaluation." Sponsor: OSD. Funding: $32,625.

TERZUOLI, ANDREW J., JR., (ENG)

"RF Enhancement Sensor." Sponsor: AFRL/SNR. Funding: $13,500.

"Performance Assessment for Foliage-Penetrating Radar Target Detection." Sponsor: DAGSI. Funding: $22,798.

TRAGESSER, STEPHEN G., (ENY)

"Formation Flying Maneuvers and Mission Design." Sponsor: AFRL/VSS. Funding: $9,000.

"Microsatellite Rendezvous with Noncooperative Targets." Sponsor: NASIC. Funding: $17,772.

TUTTLE, RONALD F., (ENP)

"Passive Ranging Using Atmospheric Oxygen Absorption Spectrum." Sponsor: NASIC. Funding: $60,000.

"Advance Geospacial Intelligence Education." Sponsor: NIMA. Funding: $750,000.

"Cross-Modal Analysis of Planning Meetings." Sponsor: NSA/VACE (ARDA). Funding: $11,642.

WALTER, JOERG D., Maj (ENY)

"Architectural Design for Micro-Aerial Vehicle Systems." Sponsor: AFRL/MNAV. Funding: $37,039.

WEEKS, DAVID E., (ENP)

"Non-adiabatic Dynamics of the Collision B($2P_{1/2}$) + H_2 (n,j) <-> B ($2P_{3/2}$) + H_2 (n',j')." Sponsor: AFOSR/MOA. Funding: $10,051.

WOOD, AIHUA W., (ENC)

"The Stability of Three-Dimensional Electromagnetic Computations Using Time-Domain Hybrid Methods." Sponsor: AFOSR/MOA. Funding: $80,677.

"Verification & Validation for Computational Electromagnetics Codes." Sponsor: HPTi. Funding: $23,390.

YEO, YUNG KEE (ENP)

"SiC and SiO_2/SiC Characterization for Device Applications." Sponsor: AFOSR/MOA. Funding: $167,757.

"Magnetic Properties of Cr- and Mn-implanted GaN." Sponsor: AFOSR/MOA. Funding: $27,809.

3.5 REFEREED JOURNAL PUBLICATIONS

[*Denotes duplicate entry, multiple faculty authors.]

ABRAMSON, MARK A., Lt Col (ENC)

Abramson, Mark A., "Mixed Variable Optimization of a Load-Bearing Thermal Insulation System Using a Filter Pattern Search Algorithm," *Optimization and Engineering*, Vol. 5, No. 2, pp. 157-177 (2004).

Abramson, Mark A., Charles Audet, and J. E. Dennis, Jr., "Generalized Pattern Searches with Derivative Information," *Mathematical Programming*, Vol. 100, No. 1, pp. 3-25 (2004).

BALDWIN, RUSTY O., (ENG)

*B. S. Peterson, R. O. Baldwin, and R. A. Raines, "Inquiry Packet Interference in Bluetooth Scatternets," *ACM Mobile Computing and Communications Review*, April 2004, Vol. 8, No. 2, pp. 66-75.

BAUER, KENNETH W., JR., (ENS)

*Flietstra, T.D., K.W. Bauer, and J.P. Kharoufeh. "Integrated Feature and Architecture Selection for Radial Basis Neural Networks," *International Journal of Smart Engineering System Design*, 5: 507-516 (2003).

*Wright, Samuel A., Kenneth W. Bauer, Jr., and Mark E. Oxley, "The covalidation of dissimilarly structured strategic airlift models," *Mathematical and Computer Modelling*, Vol. 39, No. 6-8, pp. 677-696 (2004).

BULUTOGLU, DURSUN A., (ENC)

Bulutoglu, D. A. and C. S. Cheng, "Construction of E(s^2)-optimal supersaturated designs," *Annals of Statistics*, Vol 32, pp. 1662-1678 (2004).

Bulutoglu, D. A. and C. S. Cheng, "Hidden projection properties of some nonregular fractional factorial designs and their applications," *Annals of Statistics*, Vol 31, pp. 1012-1026 (2003).

Bulutoglu, D.A. and Cheng, C.S. (2003). "Hidden Projection Properties of Some Non-Regular Fractional Factorial Designs and Their Applications." Annals of Statistics, 31, 1012-1026.

Bulutoglu, D.A. and Cheng, C.S. (2004). "Construction of E(s^2)-Optimal Supersaturated Designs." Annals of Statistics, 32, 1662-1678.

CAIN, STEPHEN C., (ENG)

Cain, S. C., "Bayesian-Based Subpixel Brightness Temperature Estimation From Multichannel Infrared GOES Radiometer Data," *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 42, pp 188-201, (2004).

Cain, S. C., "Design of an image projection correlating wavefront sensor for adaptive optics," *Optical Engineering* Vol. 43, pp 1670-1681, (2004).

CANFIELD, ROBERT A., (ENY)

Bae, Ha-Rok; Grandhi, Ramana V.; and Canfield, Robert A. (2004), "Epistemic Uncertainty Quantification Techniques Including Evidence Theory for Large-Scale Structures," *International Journal of Computers and Structures*: *Advances in Probabilistic Mechanics and Structural Reliability,* Volume 82, May 2004, pp. 1101-1112.

Bae. H.-R.; Grandhi, R.V.; and Canfield, R.A. (2004), "Successive Matrix Inversion (SMI) Method for Reanalysis of Engineering Structural Systems," *AIAA Journal*, Vol. 42, No. 8, August 2004, pp. 1529–1535.

Bae, Ha-Rok, Grandhi, Ramana V., and Canfield, Robert A. (2003), "Uncertainty Quantification of Structural Response Using Evidence Theory," *AIAA Journal*. Vol. 41, No. 10, October 2003, pp. 2062–2068.

Canfield, Robert A. (2004), "Multi-Point Cubic Surrogate Functions for Sequential Approximate Optimization," *Journal of Structural and Multidisciplinary Optimization*, Vol. 27, No. 5, July 2004, pp. 323–336.

Choi, Seung-Kyum; Grandhi, Ramana V.; and Canfield, Robert A. (2004), "Structural Reliability Under Non-Gaussian Stochastic Behavior," *Computers & Structures*: *Advances in Probabilistic Mechanics and Structural Reliability,* Volume 82, pp. 1113-1121, May 2004.

Choi, Seung-Kyum; Grandhi, Ramana V.; Canfield, Robert A.; and Pettit, Chris L., (2004), "Polynomial Chaos Expansion with Latin Hypercube Sampling for Estimating Response Variability," *AIAA Journal*., Volume 41, No. 6, pp. 1191–1198, June 2004.

Soundappan, Prabhu; Nikolaidis, Efstratios; Haftka, Raphael T.; Grandhi, Ramana V.; and Canfield, Robert (2004), "Comparison of Evidence Theory and Bayesian Theory for Uncertainty Modeling," *Reliability Engineering and System Safety,* Volume 85, Issues 1-3, July-September 2004, pp. 295-311.

COBB, RICHARD G., (ENY)

*Moody, D. C., R. A. Raines, R. G. Cobb, and A. N. Palazotto, "The Design and Analysis of a Space-Based Experiment for Inflatable Structures," *AOC (Association of Old Crows) Transactions*, Vol. 1, No. 1, August 2004, pp. 106-134.

FRANKE, MILTON E., (ENY)

*Hamilton, Christopher E., King, P. I., and Franke, M. E., "Isomer Energy Source in a Hybrid Jet Engine for High Altitude Reconnaissance Flight," *AIAA Journal of Aircraft*, Vol. 41, No. 1, January-February 2004, pp. 151-155.

GOLTZ, MARK N., (ENV)

Christ, J.A. and M.N. Goltz, "Containment of Groundwater Contamination Plumes: Minimizing Drawdown by Aligning Capture Wells Parallel to Regional Flow," *Journal of Hydrology, 286*(1-4):52-68, 2004.

GRIMAILA, MICHAEL R., (ENV)

Grimaila, M.R. and A. S. Kulkarni, "Information Security Challenges: Camera Phones," *Information Systems Security Association Journal*, August 2004, pp 26-31.

Grimaila, M.R., "Maximizing the Educational Value of Business Information Security Curriculum," *IEEE Security and Privacy*, Vol. 2, No. 1, Jan.-Feb. 2004, pp. 56-60.

HAVRILLA, MICHAEL J., (ENG)

S. Dorey, M. Havrilla, L. Frasch, C. Choi and E. Rothwell, "Stepped-waveguide material characterization technique", Invited Paper*, Antenna Propagation Society (APS) Magazine,* pp. 170-175, Feb. 2004.

J. Oh, E. Rothwell, B. Perry and M. Havrilla, "Natural resonance representation of the transient field reflected by a conductor-backed layer of Debye material", *Journal of Electromagnetic Waves and Applications*, vol. 18, no. 5, pp. 571-589, May 2004.

HEILMANN, Maj SHARON G., (ENV)

Lee, J., Heilmann, S. G. & Near, J. P., "Blowing the whistle on sexual harassment: Test of a model of predictors and outcomes," *Human Relations,* 57(3), 297-322, 2004.

HEMINGER, ALAN R., (ENV)

Heminger, Alan R., with K. E. Kolekofski, "Beliefs and Attitudes Affecting Intentions to Share Information in an Organizational Setting", *Information and Management*, 2012 (2003) pp 1-12.

HENGEHOLD, ROBERT L., (ENP)

*Ahoujja, Mo, H. C. Crocket, M. B. Scott, Y. K. Yeo, and R. L. Hengehold, "Photoluminescence characterization of defects introduced in 4H-SiC during high energy proton irradiation and their annealing behavior," *Mat. Res. Soc. Symp. Proc.* **815**, J5.21 (2004).

* Ryu, M. –Y., Y. K. Yeo, E. A. Chitwood, R. L. Hengehold, and T. Steiner, "Electrical and optical activation studies of Si-implanted $Al_xGa_{1-x}N$ by Hall-effect and photoluminescence measurements," *2003 International Symposium on Compound Semiconductors*, IEEE 22-27 (2004).

HICKS, MICHAEL J., (ENV)

Hicks, Michael J. "Do Rural Areas in the U.S. Need Microfinance? Some Early Evidence from the CRA Data" *Journal of International Banking Regulation,* Vol 5(4) March 2004.

Hicks, Michael J. "A Quasi-experimental Analysis of the Impact of Casino Gambling on Regional Economic Performance" *Proceedings of the National Tax Association, 2003.*

JOHNSON, ALAN W., (ENS)

*Swartz, S.M. and A.W. Johnson, "A Multi-Method Approach to the Combat Air Forces Mix and Deployment Problem," *Mathematical and Computer Modeling,* 39(6-8): 773-798 (2004).

KHAROUFEH, JEFFEREY P., (ENS)

*Flietstra, T., K. Bauer, and J.P. Kharoufeh. "Integrated Feature and Architecture Selection for Radial Basis Neural Networks", *International Journal of Smart Engineering System Design,* 5: 507-516 (2003).

Kharoufeh, J.P. and N. Gautam. "Deriving Link Travel Time Distributions via Stochastic Speed Processes," *Transportation Science,* 38(1): 97-106 (2004).

Kharoufeh, J.P. and N. Gautam. "A Fluid Queuing Model for Link Travel Time Moments," *Naval Research Logistics,* 51(2): 242-257 (2004).

*Kladitis, P., V. Bright, and J.P. Kharoufeh. "Uncertainty in Manufacture and Assembly of Multiple-Joint Solder Self-Assembled Microelectromechanical Systems (MEMS)," *Journal of Manufacturing Processes,* 6(1), 32-50 (2004).

Sherman, N. and J.P. Kharoufeh. "Analytical modeling of Joint Reception, Staging, Onward Movement, and Integration," *Mathematical and Computer Modeling,* 39(6-8), 799-815 (2004).

KING, PAUL I., (ENY)

*Hamilton, Christopher E., King, P. I., and Franke, M. E., "Isomer Energy Source in a Hybrid Jet Engine for High Altitude Reconnaissance Flight," *AIAA Journal of Aircraft*, Vol. 41, No. 1, January-February 2004, pp. 151-155.

*Maple, R.C., King, P.I., Orkwis, P.D., Wolff, J.M., "Adaptive Harmonic Balance Method for Non-Linear Time Periodic Flows, " *Journal of Computational Physics,* No. 193, Issue 2, 20 Jan 2004, pp. 620-641.

*Subramanian, C.S., King, P.I., Reeder, M.F., Ou, S. and Rivir, R.B., "Effects of Strong Irregular Roughness on the Turbulent Boundary Layer," *Flow, Turbulence and Combustion* (formerly 'Applied Scientific Research'), Volume 72, Issue 2-4, 2004, pp. 349-368.

KLADITIS, PAUL E., Capt (ENG)

R. A. Coutu Jr., P. E. Kladitis, K. D. Leedy, and R. L. Crane, "Selecting metal alloy electric contact materials for MEMS switches," *Journal of Micromechanics and Microengineering*, Vol. 14, no. 8, pp. 1157-1164, August 2004.

R. A. Coutu, Jr., P. E. Kladitis L. A. Starman, and J. R. Reid, "A Comparison of Micro-Switch Analytic, Finite Element, and Experimental Results," *Sensors and Actuators A: Physical*, Vol. 115, no. 2-3, pp. 252-258, September 2004.

*P. E. Kladitis, V. M. Bright, and J. P. Kharoufeh, "Uncertainty in Manufacture and Assembly of Multiple-Joint Solder Self-Assembled Microelectromechanical Systems (MEMS)," *Journal of Manufacturing Processes*, Vol. 6, no. 1, pp. 32-50, 2004.

MALL, SHANKAR (ENY)

Jin, O. and Mall, S., "Effects of Slip on Fretting Behavior: Experiments and Analysis," *Wear*, Vol. 256, 671-684, 2004.

Lee, H., Jin, O. and Mall, S., "Fretting Fatigue Behavior of Ti-6Al-4V with Dissimilar Mating Materials," *International Journal of Fatigue*, Vol. 26, 393-402, 2004.

Lee, H. and Mall, S., "Effects of Dissimilar Materials and Contact Force on Fretting Behavior of Ti-6Al-4V," *Tribology International*, Vol. 37, 35-44, 2004.

Lee, H. and Mall, S., "Stress Relaxation Behavior of Shot-Peened Ti-6Al-4V under Fretting Fatigue at Elevated Temperature", *Materials Science and Engineering*, Vol. 336, 412-420, 2004.

Magaziner, R., Jin, O. and Mall, S, "Slip Regime Explanation of Observed Size Effects in Fretting", *Wear*, Vol. 257, 190-197, 2004.

MAPLE, RAYMOND C., Lt Col (ENY)

*Maple, R. C., King, P. I., Orkwis, P. D., Wolff, J. M., "Adaptive harmonic balance method for nonlinear time-periodic flows", *Journal of Computational Physics* 193(2), 20 Jan 04, pp. 620-641.

MAYBECK, PETER S., (ENG)

*J. R. Vasquez and P. S. Maybeck, "Enhanced Motion and Sizing of Bank in Moving-Bank MMAE," *IEEE Transactions on Aerospace and Electronic Systems,* Vol. 39, No. 3, July 2004.

MELOUK, SHARIF H., (ENS)

Chang, P., P. Damodaran, and S. Melouk. "Minimizing Makespan on Parallel Batch Processing Machines," *International Journal of Production Research*, 42(19): 4211-4220 (2004).

Melouk, S., P. Damodaran, and P. Chang. "Minimizing Makespan for Single Machine Batch Processing with Non-identical Job Sizes using Simulated Annealing," *International Journal of Production Economics*, 87(2): 141-147 (2004).

MOORE, JAMES T., (ENS)

*Barnes, J.W., V.D. Wiley, J.T. Moore, and D.M. Ryer. "Solving the Aerial Fleet Refueling Problem using Group Theoretic Tabu Search," *Mathematical and Computer Modelling,* 39(6-8): 617-640 (2004).

Cho, Y.K., J.T. Moore, and R.R. Hill. "Developing a New Greedy Heuristic Based on Knowledge Gained Via Structured Empirical Testing," *International Journal of Industrial Engineering*, 10(4): 504-510 (December 2003).

Combs, T.E. and J.T. Moore. "A Hybrid Tabu Search/Set Partitioning Approach to Tanker Crew Scheduling," *Military Operations Research*, 9(1): 43-56 (2004).

Crino, J.R., J.T. Moore, J.W. Barnes, and W.P. Nanry. "Solving the Theater Distribution Vehicle Routing and Scheduling Problem Using Group Theoretic Tabu Search," *Mathematical and Computer Modelling*, 39(6-8): 599-616 (2004).

Harder, R.W., R.R. Hill, and J.T. Moore. "A Java Universal Vehicle Router for Routing Unmanned Aerial Vehicles," *International Transactions in Operational Research*, 11(3): 259-276 (May 2004).

Johnstone, D.P., R.R. Hill, and J.T. Moore. "Mathematically Modeling Munitions Pre-Positioning and Movement," *Mathematical and Computer Modelling*, 39(6-8): 759-772 (2004).

OXLEY, MARK E., (ENC)

*Wright, Samuel A., Kenneth W. Bauer, Jr., and Mark E. Oxley, "The covalidation of dissimilarly structured strategic airlift models," *Mathematical and Computer Modelling*, Vol. 39, No. 6-8, pp. 677-696 (2004).

PACHTER, MEIR (ENG)

*Mellen, G. , M. Pachter and J. Raquet, "Closed-Form Solution for Determining Emitter Location Using Time Difference of Arrival Measurements," *IEEE Trans. on Aerospace and Electronic Systems*, Vol. 39, No. 3, pp 1056-1058, (2003).

Pachter, M., and T. Nguyen: "An Efficient GPS Position Determination Algorithm," *Navigation, the Journal of the Institute of Navigation,* Vol. 50, No. 2, pp. 131-141 (2003).

PALAZOTTO, ANTHONY N., (ENY)

Laird, D., and A. Palazotto, "Effects of Temperature on the Process of Hypervelocity Gouging", *AIAA Journal*, Vol. 41, November 2003, pp 2251-2260.

Laird, D., and A. Palazotto, "Gouging Development During Hypervelocity Sliding Impact", *International Journal of Impact Engineering*, Vol. 30, No. 2, February 2004, pp 205-223.

Lanning, D., T. Nicholas and A. Palazotto, "HCF Notch Predictions Based On Weakest-Link Failure Models", *International Journal of Fatigue*, Vol. 25, 2003, pp 835-841.

Voyiadjis, G., R. Abu Al-Rub and A. Palazotto, "Non-local Coupling of Viscoplasticity and Anisotropic Viscodamage for Impact Problems Using the Gradient Theory", *Archives of Mechanics*, Vol. 55, No. 1, 2003, pp 39-89.

PATTERSON, KIRK A., Maj (ENS)

Grimm, C.M., T.M. Corsi, and K.A. Patterson. "Diffusion of Supply Chain Technologies," *Transportation Journal*, 43(4): 5-23 (Summer 2004).

PERRAM, GLEN P., (ENP)

*Robert S. Pope, Paul J. Wolf, and Glen P. Perram, "A Study of Collision Broadening in the O_2 A-Band with the Noble Gases Using Fourier Transform Spectroscopy," *Journal of Molecular Spectroscopy*, 223: 205 (2004).

RAINES, RICHARD A., (ENG)

*B. S. Peterson, R. O. Baldwin, and R. A. Raines, "Inquiry Packet Interference in Bluetooth Scatternets," *ACM Mobile Computing and Communications Review*, Vol 8, No. 2, pp. 66-75, April 2004.

*M. A. Temple, K. L. Sitler, R. A. Raines, and J. A. Hughes, "High Range Resolution (HRR) Improvement using Synthetic HRR Processing and Stepped-Frequency Polyphase Coding," *IEE Proceedings on Radar, Sonar, and Navigation*, Vol. 151, No. 1, February 2004, pp. 41-47.

RAQUET, JOHN F., (ENG)

Warren, D. and J. Raquet, "Broadcast vs. Precise GPS Ephemerides: An Historical Perspective," *GPS Solutions*, Vol 7, No. 3, pp. 151-156, December 2003.

REEDER, MARK F., (ENY)

*Subramanian, C.S., King, P.I., Reeder, M.F., Ou, S. and Rivir, R.B., "Effects of Strong Irregular Roughness on the Turbulent Boundary Layer," *Flow, Turbulence and Combustion* (formerly 'Applied Scientific Research'), Volume 72, Issue 2-4, 2004, pp. 349-368.

ROH, WON B., (ENP)

Baek, S. H. and W. B. Roh, "Single-mode Raman fiber laser based upon multi-mode fiber," *Opt. Lett.* 29: 153-155 (2004)

STAATS, RAYMOND W., Lt Col (ENS)

H.D. Sherali, R.W. Staats, and A.A. Trani. "An Airspace Planning and Collaborative Decision Making Model Part I – Probabilistic Conflicts, Workload, and Equity Considerations," *Transportation Science*, 37(4): 434-456 (2003).

SWARTZ, STEPHAN M., Lt Col (ENS)

*Kahler, Harry, William A. Cunningham and Stephen M. Swartz. "Depot Repair Capacity as a Criterion for Transportation Mode Selection in the Retrograde Movement of Reparable Assets," *Journal of Transportation Management*, 15(1), 2004.

O'Brien, Kristina and Stephen M. Swartz. "A Comparison of Implementation Issues and Strategies for Radio Frequency Identification Technologies between the U.S. Military and Private Sector Organizations," *Journal of Transportation Managemen*t, 15(2), 2004.

*Swartz, Stephen M. and Alan Johnson. "A Multi-Method Approach to the Combat Air Forces Mix and Deployment Problem." *Mathematical and Computer Modelling*, 39(6-8): 773-798 (2004).

TEMPLE, MICHAEL A., (ENG)

*M.A. Temple, K.L. Sitler, R.A. Raines, and J.A. Hughes, "High Range Resolution (HRR) Improvement Using Synthetic HRR Processing with Stepped-Frequency Polyphase Coding," *IEE Proceedings: Radar, Sonar, and Navigation*, Vol. 151, No. 1, Feb 2004, pp. 41-47.

TERZUOLI, ANDREW J., JR., (ENG)

D. F. Fuller, A. J. Terzuoli, P. J. Collins, R. Williams, "An Approach to Object Clarification Using Dispersive Scattering Centers," *IEE Proceedings on Radar, Sonar, and Navigation*, Vol. 151, No. 2, pp. 85-90, April 2004.

THAL, ALFRED E., JR. Lt Col (ENV)

Jurk, D. M., S. P. Chambal, and A. E. Thal, Jr., "Using Value-Focused Thinking to Select Innovative Force Protection Ideas," *Military Operations Research,* 9(3):31-43, 2004.

WEIR, JEFFERY D., Maj (ENS)

Weir, J.D. and E.L. Johnson. "A Three Phase Approach to Solving the Bidline Problem," *Annals of Operations Research,* 127: 283-308 (2004).

WHITE, EDWARD D., III, (ENC)

* Sipple, V. P., E. D. White, and M. A. Greiner, "Surveying cost growth," *Defense Acquisition Review Journal*, Vol. 11, No. 1, pp. 78-91 (2004).

Unger, E. J., M. A. Gallagher, and E. D. White, "R&D budget-driven cost and schedule overruns," *Journal of Cost Analysis and Management*, Summer, pp. 80-97 (2004).

* White, E. D., V. P. Sipple, and M. A. Greiner, "Using logistic and multiple regression to estimate engineering cost risk," *Journal of Cost Analysis and Management*, Summer, pp. 67-79 (2004).

WILEY, VICTOR D., Maj (ENS)

*Barnes, J.W., V.D. Wiley, J.T. Moore, and D.M. Ryer. "Solving the Aerial Fleet Refueling Problem using Group Theoretic Tabu Search," *Mathematical and Computer Modelling,* 39(6-8): 617-640 (2004).

WOLF, PAUL J., (ENP)

*Pope, Robert S., Paul J. Wolf, and Glen P. Perram, *"*A Study of Collision Broadening in the O_2 A-Band with the Noble Gases Using Fourier Transform Spectroscopy*"* Journal of Molecular Spectroscopy*, 223: 205 (2004).

WOOD, AIHUA W., (ENC)

*Fleming, J., W. D. Wood, and A. W. Wood, "Locally corrected Nystrom method for electromagnetic scattering by bodies of revolution," *J. Computational Phys*ics, Vol. 196, No. 1, pp. 41-52 (2004).

Van, T. and A. W. Wood, "Analysis of transient electromagnetic scattering from over-filled cavities," *SIAM J. Applied Mathematics,* Vol. 64, No. 2, pp. 688-708 (2004).

WRIGHT, SAMUEL A., Maj (ENC)

*Wright, Samuel A., Kenneth W. Bauer, Jr., and Mark E. Oxley, "The covalidation of dissimilarly structured strategic airlift models," *Mathematical and Computer Modelling*, Vol. 39, No. 6-8, pp. 677-696 (2004).

YEO, YUNG KEE (ENP)

*Ahoujja, Mo, H. C. Crocket, M. B. Scott, Y. K. Yeo, and R. L. Hengehold, "Photoluminescence characterization of defects introduced in 4H-SiC during high energy proton irradiation and their annealing behavior," *Mat. Res. Soc. Symp. Proc.* 815: J5.21(2004).

*Ryu, M. –Y., Y. K. Yeo, E. A. Chitwood, R. L. Hengehold, and T. Steiner, "Electrical and optical activation studies of Si-implanted $Al_xGa_{1-x}N$ by Hall-effect and photoluminescence measurements," *2003 International Symposium on Compound Semiconductors*, IEEE 22-27 (2004).

Wu, Pan, Gaurav Saraf, Yicheng Lu, David Hill, Leszek S Wielunski, Robert A. Bartynski, Mee-Yi Ryu, Jeremy A. Raley, and Y. K.Yeo, "Ion-beam induced sharpening of ZnO nanotips," *Appl. Phys. Lett*. 85: 1247 (2004).

3.6 OTHER PUBLICATIONS

[*Denotes duplicate entry, multiple faculty authors.]

3.6.1 GRADUATE RESEARCH PAPERS

(NOTE: Students in non-thesis graduate program at AFIT may write graduate research papers. Substantive papers are reported here upon the recommendation of the department.)

3.6.1.1 GRADUATE MOBILITY MANAGEMENT (GMO)

Brown, Mark A. *The Joint Movement Center: Manager Of Iraqi Freedom Theater Airlift.* Faculty Advisor: Maj Kirk A. Patterson, DSN 785-3636 x4653.

Carrabba Pete L. *The Right Place At The Right Time- An Analysis Of High Altitude Airdrop And The Joint Precision Airdrop System.* Faculty Advisor: Dr. James T. Moore, DSN 785-3636 x4528.

DeVore, Jeffrey W. *Reverse Logistics: Has The Implementation Of Reverse Logistics Met The Objectives Of Air Mobility Command?* Faculty Advisor: Maj Bradley E. Anderson, DSN 785-3636 x4335.

Duffy, Dennis P. *The Past, Present, and Future of the Air Force's Future Total Force*. Faculty Advisor: Dr. James T. Moore, DSN 785-3636 x4528.

Eaton, Casey D. *USTRANSCOM's Acquisition Re-Engineering: An Analysis Of The Barriers And Benefits.* Faculty Advisor: Dr. James T. Moore, DSN 785-3636 x4528.

Falzarano, Thomas G. *Air Force Organizational Adoption Of Remotely Piloted Vehicles.* Faculty Advisor: Maj Daniel T. Holt, DSN 785-3636 x4800.

Haddock, Michael D. *Becoming A Network-Centric Military: The Case For Applying Business Process Reengineering Concepts.* Faculty Advisor: Dr. Alan R. Heminger, DSN 785-3636 x4797.

Hodge, Stephen L. *Turn Back At The Border – Airlift Imc Operations In Operation Enduring Freedom*. Faculty Advisor: Lt Col Stephan P. Brady, DSN 785-3636 x4701.

Kopp, Ken W. *Improvement Of Air Mobility Command Airlift Scheduling.* Faculty Advisor: Dr. James T. Moore, DSN 785-3636 x4528.

Layton, Ricardo J. *New Era: Civil-Military Cooperative Efforts In Post-Conflict Operations.* Faculty Advisor: Dr. Alan R. Heminger, DSN 785-3636 x4797.

Lindsey, Brian W. *Maffs And Military Support To Civil Authorities A Study In Command And Control.* Faculty Advisor: Lt Col (Ret.) Stephen Swartz, (940) 565-3673.

Moritz, Eric J. *Reducing C-17 Pilot Training Delays.* Faculty Advisor: Dr. William A. Cunningham, III, DSN 785-6565 x4283.

Ritter, Stephen P. *The Application Of Radio Frequency Identification Technology To Overcome Three Common Aerial Port Challenges: A Concept.* Faculty Advisor: Dr. William A. Cunningham, III, DSN 785-6565 x4283.

Simon, Cristian J.T. *A Case Study of Jumping From the C-17 and the C-130; A Better Platform for Paratroopers?* Faculty Advisor: Maj Kirk A. Patterson, DSN 785-3636 x4653.

Theisen, Craig G. *"On the Fly" Supply Trains Redefining Maneuver Warfare with Pre-Planned Aerial Resupply.* Faculty Advisor: Maj Bradley E. Anderson, DSN 785-3636 x4646.

Williamson, Richard E. Jr. *C-17a Special Operations Low Level II (SOLL II) Supporting the Combatant Commander.* Faculty Advisor: Dr. James T. Moore, DSN 785-3636 x4528.

3.6.1.2 MANAGEMENT (IMGM)

Higdon, Anthony A. *Applications of Geographic Information Systems in United States Air Force Emergency Management Operations.* AFIT/MGM/ENV/04S-01, Faculty Advisor: Capt David D. Bouvin, DSN 785-2998.

3.6.1.3 LOGISTICS MANAGEMENT (IMLM)

Bulldis, John S. *Strategic Airlift Munitions Planning Factors*. Faculty Advisor: Dr. Alan W. Johnson, DSN 785-3636 x4703.

Chadwick, Glenn S. *Modeling No-Show Passengers on PACOM Exercise Airlift*. AFIT/MLM/ENS/04-02, Faculty Advisor: Maj Kirk A. Patterson, DSN 785-3636 x4653.

Coley, David M. *Decentralized Aircraft Maintenance with a Centralized Jet Engine Dispatch at Travis AFB*. Faculty Advisor: Maj John E. Bell, DSN 785-3636 x4511.

Ellison, Vikki L. *Analysis of Frustrated Vendor Hazardous Material Shipments within the Defense Airlift System*. AFIT/MLM/ENS/04-04, Faculty Advisor: Maj John E. Bell, DSN 785-3636 x4511.

Fisch, John N. *Towards an Effective Management Strategy for Passive RFID Implementation*. AFIT/MLM/ENS/04-05, Faculty Advisor: Dr. William A. Cunningham III, DSN 785-6565 x4283.

Griffith, Paul E. *Decision Criteria for Common Air Force Automated Test Systems*. Faculty Advisor: Maj John E. Bell, DSN 785-3636 x4511.

Hunt, Clint H. *Can the Communications Reserve Air Fleet/Voluntary Intermodal Sealift Agreement Type Program Be Used by the Department of Defense to Secure the Use of Commercial Satellite Communications*. Faculty Advisor: Dr. William A. Cunningham III, DSN 785-6565 x4283.

Koch, David M. *Towards an Effective Management Strategy for Passive RFID Implementation*. AFIT/MLM/ENS/04-05, Faculty Advisor: Dr. William A. Cunningham III, DSN 785-6565 x4283.

O'Brien, Kristina M. *Estimating the Effects of Radio Frequency Identification (RFID) Tagging Technologies on the Army's War-Time Logistics Network*. AFIT/MLM/ENS/04-09, Faculty Advisor: Lt Col (Ret.) Stephen M. Swartz.

Pelletier, Dana C. *Probability Distribution Analysis of Air Mobility Planning Factors*. Faculty Advisor: Lt Col Robert T. Brigantic, DSN 785-3636 x4624.

Roberts, William P. *Implementing an In-Service F-16 Avionics Unique Item Identification Program*. AFIT/MLM/ENS/04-10, Faculty Advisor: Maj Bradley E. Anderson, DSN 785-3636 x4646.

Smith, Raymond H., Jr. *Collaborative Planning, Forecasting, and Replenishment in the Grocery Industry and Defense Commissary Agency*. AFIT/MLM/ENS/04-11, Faculty Advisor: Lt Col Stephan P. Brady, DSN 785-3636 x4701.

3.6.1.4 OPERATIONAL SCIENCES (IGOS)

Abeyta, Derek A. *Educating the Air Force Space Professional*. Faculty Advisor: Lt Col Raymond Staats, DSN 785-3636 x4518.

Brown, Jeffrey S. *Modeling and Analysis of CENTCOM's Theater Air Distribution Systems*. Faculty Advisor: Maj Victor D. Wiley, DSN 785-3636 x4601.

Butler, Rudolph E., III. *Using Decision Analysis to Increase Commander's Confidence for Employment of Computer Network Operations*. Faculty Advisor: Dr. Richard F. Deckro, DSN 785-6565 x4325.

Gendron, Gerald R., Jr. *A Feasibility Study of a "CROSS-IDE" (Cross-Intermediate Developmental Education) Thesis Rating Method*. Faculty Advisor: Dr. James T. Moore, DSN 785-3636 x 4528.

Greene, Christopher V. *Application of Value Focused Thinking to Assess United States Tactical Nuclear Weapon Support to NATO*. Faculty Advisor: Maj Jeffery D. Weir, DSN 785-3636 x4538. Sponsor: US European Command/J5.

Greenstreet, Kenneth M. *Examination of Optimal Range/ Payload Metrics for Strategic Airlift Aircraft*. Faculty Advisor: Lt Col Robert T. Brigantic, DSN 785-3636 x4624.

Iannaccone, Alfred A. *Use of Response Surface Methodology (RSM) to Conduct Post-Optimality Analysis on the Combat Forces Assessment Model (CFAM)*. Faculty Advisor: Maj Jeffery D. Weir, DSN 785-3636 x4538.

Leong, Gary N. *Use of Response Surface Methodology (RSM) to Conduct Post-Optimality Analysis on the Combat Forces Assessment Model (CFAM)*. Faculty Advisor: Dr. James T. Moore, DSN 785-3636 x4528.

3.6.2 FACULTY PAPERS

ANTHENIEN, RALPH A. JR (ENY)

Zdenek, J., and Anthenien, R.A., "Ion Based High-Temperature Pressure Sensor," *42nd Aerospace Sciences Meeting,* Reno, NV 5-9 Jan. AIAA-2004-0470 (2004).

BALDWIN, RUSTY O., (ENG)

*J. Lopez, R. A. Raines, M. A. Temple, R. O. Baldwin, and J. P. Stephens, "An Empirical Study of Electromagnetic Interference Caused by Ultrawideband Transmissions in an IEEE 802.11a Wireless Local Area Network," *2004 IEEE Radio and Wireless Conference*, Atlanta, GA, September 2004, pp. 517-520.

*R. B. Noel, R. O. Baldwin, R. A. Raines, and M. A. Temple, "Wireless LAN Performance in the Presence of Bluetooth Interferers," *2003 Australian Telecommunications, Networks and Applications Conference,* Melbourne, Australia, December 2003, pp. M1A.1-M1A.5.

*B. S. Peterson, R. O. Baldwin, and J. P. Kharoufeh, "A Specification-Compatible Bluetooth Inquiry Simplification," *Hawaii International Conference on System Sciences-HICSS-37*, Big Island, Hawaii, January 2004, pp. 307-315.

*B. S. Peterson, R. O. Baldwin, and M. A. Temple, "Non-cooperative Synchronization for a Bluetooth Piconet: Algorithm and Results," *IEEE MILCOM 2003,* Boston, MA, October 2003, Presented in the Classified Information Assurance Session, 8 pages.

BARTCZAK, SUMMER E., Lt Col (ENV)

Sasser, D. P. & Bartczak, S.E. (2004). *Identifying the Benefits of Knowledge Management in the Department of Defense: A Delphi Study*. Proceedings of the Americas Conference on Information Systems, New York, NY, pp. 2217-2224.

BAUER, KENNETH W., JR., (ENS)

*Bjerkaas, Kristopher S., Mark E. Oxley, and Kenneth W. Bauer, Jr., "Consistency Results for the ROC Curves of Fused Classifiers," *Proceedings of SPIE, Signal Processing, Sensor Fusion, and Target Recognition XIII*, Editor: Ivan Kadar, Vol. 5429, pp. 361-372, Orlando, FL, April 2004.

*Bjerkaas, Kristopher S., Mark E. Oxley, and Kenneth W. Bauer, Jr., "*Evaluating the Fusion of Automatic Target Classifier Systems*," Great Lakes Photonics Symposium, on compact disc, Cleveland, OH, 10 June 2004.

*Hill, Justin M., Mark E. Oxley, and Kenneth W. Bauer, Jr., "Receiver Operating Characteristic Curves and Classifier Fusion," *Proceedings of the Artificial Neural Networks in Engineering Conference (ANNIE 2003),* Editors: C. Dagli, A. Buczak, J. Ghosh, M. Embrechts, O. Ersoy, pp. 864-869, St. Louis, MO, 1-4 November 2003.

Trevor I. Laine and Kenneth W. Bauer, "Feature Selection Assessment and Comparison using Two Saliency Measures in an Elman Recurrent Neural Network," *Proc. Int'l Joint Conf. on Neural Networks*, IEEE Press, pp. 2807-2812, Portland, OR, 20-24 July 2003.

Trevor I. Laine and Kenneth W. Bauer, Jr., "A Mathematical Framework for the Optimization of Rejection and ROC Thresholds in the Fusion of Correlated Sensor Data," *Proceedings of SPIE, Multisensor, Multisource Information Fusion: Architectures, Algorithms, and Applications 2004*, Vol. 5434, pp. 37-48, Orlando, FL 12-16 April, 2004.

*Leap, Nathan J., Paul Clemans, Kenneth W. Bauer, Jr., and Mark E. Oxley, "*An Investigation of the Effects of Correlation, Autocorrelation, and Sample Size on Classifier Fusion and Optimal Classifier Ensembles*," Automatic Target Recognition Science and Technology Transition Symposium: Understanding Operational Needs and Emerging Challenges, on compact disc, Air Force Institute of Technology, WPAFB, OH, 15-17 June 2004.

*Oxley, Mark E. and Kenneth W. Bauer, Jr., "*AFIT Sensor Fusion Research*," Automatic Target Recognition Science and Technology Transition Symposium: Understanding Operational Needs and Emerging Challenges, on compact disc, Air Force Institute of Technology, WPAFB, OH, 15-17 June 2004.

*Schubert, Christine M., Nathan J. Leap, Mark E. Oxley, and Kenneth W. Bauer, Jr., "Quantifying the Correlation Effects of Fused Classifiers," *Proceedings of SPIE, Signal Processing, Sensor Fusion, and Target Recognition XIII*, Editor: Ivan Kadar ,Vol. 5429, pp. 373-383, Orlando, FL, April 2004.

*Schubert, Christine M., Mark E. Oxley, and Kenneth W. Bauer, Jr., "*On the Correlation of Fused ATR Classifiers*," Great Lakes Photonic Symposium, on compact disc, Cleveland, OH, 10 June 2004.

*Storm, Susan A., Kenneth W. Bauer, Jr. and Mark E. Oxley, "An Investigation of the Effects of Correlation in Classifier Fusion," *Proceedings of the Artificial Neural Networks in Engineering Conference (ANNIE 200*3), Editors: C. Dagli, A. Buczak, J. Ghosh, M. Embrechts, O. Ersoy, pp. 619-624, St. Louis, MO, 1-4 November 2003.

BLECKMANN, CHARLES A., (ENV)

*Sitzabee, W. E., C. A. Bleckmann, and E.C. England. *"An evaluation of Endangered Species Act exemptions in the Department of Defense and the U.S. Air Force,"* Federal Facilities Environmental Journal. 15:19-28, 2004.

CAIN, STEPHEN C., (ENG)

Cain, S., *"Atmospheric turbulence profile estimation using a single laser guide star,"* Proceedings of the SPIE, Vol 5413, pp 50-57.

Cain, S., *"Deconvolution of laser pulse profiles from 3D ladar temporal returns,"* Proceedings of the SPIE, Vol 5558, pp 214-223.

Cain, S., *"Three-dimensional laser radar sensor modeling and validation via a Monte Carlo Rayleigh-Sommerfeld wave optics approach,"* Proceedings of the SPIE, Vol 5412, pp 360-368.

Macdonald, A., Cain. S. and Armstrong E., "*Comparison of registration techniques for speckle,"* Proceedings of the SPIE, Vol 5558, pp 202-213.

Macdonald, A., Cain. S. and Armstrong E., *"Image restoration techniques for partially coherent 2-D ladar imaging systems,"* Proceedings of the SPIE, Vol 5562, pp 10-18.

CANFIELD, ROBERT A., (ENY)

Bae, Ha-Rok; Grandhi, R.V.; and Canfield, Robert A. (2004), "Accelerated Engineering Design Optimization Using Successive Matrix Inversion Method," 10th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Albany, New York, Aug. 30-1, 2004, Paper #AIAA-2004-4377.

Bae, Ha-Rok; Grandhi, R.V.; and, Canfield, Robert A. (2004), "An Efficient Successive Reanalysis Technique for Engineering Structure," 45th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, Palm Springs, California, Apr. 19-22, 2004, Paper #AIAA-2004-1870.

Rasmussen, Cody, and Canfield, Robert A. (2004), "Joined-Wing Sensor-Craft Configuration Design," 45th AIAA/ASME/ASCE/AHS Structures, Structural Dynamics, and Materials Conference, Palm Springs, California, April 19-22, Paper #AIAA-2004-1760.

Rasmussen, Cody; Canfield, Robert A.; and Blair, Maxwell (2004), "Optimization Process for Configuration of Flexible Joined-Wing," 10th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Albany, New York, Aug. 30-1, 2004, Paper #AIAA-2004-4330.

Choi, Seung-Kyum; Grandhi, R.V.; and Canfield, Robert A. (2004), "Optimization of Stochastic Mechanical Systems using Polynomial Chaos Expansion," 10th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Albany, New York, Aug. 30-1, 2004, Paper #AIAA-2004-4590.

COBB, RICHARD G., (ENY)

Cobb, R.G., Lindemuth, S., Slater, J., and Maddux, M., "Development and Test of a Rigidizable Inflatable Structure Experiment", Paper #AIAA-2004-1666, 45th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, 2004 AIAA Gossamer Spacecraft Forum, Palm Springs, CA, 19 Apr 2004.

DECKRO, RICHARD F., (ENS)

LTC Michael Kwinn, Lt Col Edward Pohl, and Richard F. Deckro, "Combat Consultants", *Phalanx*, Vol. 36, No. 4 (December, 2003), pp. 10-11 & 30.

Michael J. Kwinn, Daniel Ragsdale, John Brence, Tom Morel, Edward A. Pohl, Stephen Goldman, Mark Gorak, Eric Tollefson, Richard F. Deckro, Curtis Carver, "Operation Enduring Freedom Assessment System Development", *Proceedings of the US South Korean Defense Department's Operations Research Symposium*, South Korea, April 2004.

Kristopher A. Pruitt, Richard F. Deckro and Stephen P. Chambal, "Modeling Homeland Security: Structuring Key Objectives Through Affinity Diagramming", *The Proceedings of the Thirty-Third Annual Meeting of the Western Decision Science Institute*, edited by Cynthia Pavett, (2004), pp. 362-366.

DUCKRO, DONALD E., Lt Col (ENC)

Duckro, Donald E., *"Final Capacity Analysis Report,"* Headquarters and Support Activities Joint Cross Service Group, Report HSA JCSG-D-04-129, Pentagon, VA, 27 September 2004.

ENGLAND, ELLEN C., Lt Col (ENV)

Duke, England, Weir, *"Value Focused Energy Solutions,"* The Military Engineer, 96:631(49-50), September-October 2004.

*England, Morgan, Usrey, Bleckmann, Greiner, *"Life Cycle Cost of a Green Roof,"* International Life Cycle Assessment and Life Cycle Management on-Line Conference, July 11-24, 2004.

FIORINO, STEVEN T., Lt Col (ENP)

Fiorino, S. T., "Using Space-Based Radar to Derive Fully Integrated, Real-Time Weather Information," *Air and Space Power Journal*. XVIII, No. 2. (2004).

FRANKE, MILTON E., (ENY)

Brock, M. A. and Franke, M. E., "Two-Stage-to-Orbit Reusable Launch Vehicle Propulsion Performance Study," Paper #AIAA-2004-3903, 40th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, Ft Lauderdale, FL, 11-14 July 2004.

Franke, M. E. and Ari, G., "Use of Cargo Aircraft for Launching Precision-Guided Munitions," Paper #AIAA-2004-1250, 42nd AIAA Aerospace Sciences Meeting and Exhibit, Reno, NV, 5-8 January 2004, 11 pages.

GODA, MATTHEW E., (ENG)

Brooks, Matthew R, and Goda, Matthew E., "*Atmospheric simulation using a liquid crystal wavefront controlling device,*" Proc of SPIE vol 5553, 2004, Denver CO.

Nelson, Joel, M., Goda, P. Sydney, C., Sabol, D. Talent, D. O'Connell, and M. Murai., "*Daylight Astrometry and Design Studies for the LEO Raven*." AAS/AIAA Spaceflight Mechanics Conference, Maui, Hawaii, February 8-13, 2004, AAS 04-192.

GOLTZ, MARK N., (ENV)

Goltz, M.N., *"Development and Application of an In Situ Technology to Treat Various Soil and Groundwater Contaminants",* Proceedings, International Symposium on Soil Pollution Prevention: Policy and Remediation Technology, Korea Environment Institute*,* Seoul, Korea, pp. 89-110, 15 October 2003.

*Knarr, M.R., M.N. Goltz, G.B. Lamont, and J. Huang, *"In situ Bioremediation of Perchlorate-Contaminated Groundwater using a Multi-Objective Parallel Evolutionary Algorithm,"* Proceedings 2003 Congress on Evolutionary Computation, Canberra, Australia, December 8-12, 2003.

GRAHAM, SCOTT R., MAJ (ENG)

S. Graham, G. Baliga, and P. R. Kumar, *"The convergence of control with communication and computation: Proliferation, architecture, design, and middleware,"* Proceedings of the 43rd IEEE Conference on Decision Control, 14-17 Dec 2004.

S. Graham and P. R. Kumar, *"Time in general-purpose control systems: The control time protocol and an experimental evaluation,"* Proceedings of the 43rd IEEE Conference on Decision and Control, 14-17 Dec 2004.

G. Baliga, S. Graham, L. Sha, and P. R. Kumar, "*Service continuity in networked control using Etherware,"* IEEE Distributed Systems Online, 2004.

G. Baliga, S. Graham, L. Sha, P.R. Kumar, *"Etherware: Domainware for Wireless Control Networks."* Proceedings of the 7th IEEE International Symposium on Object-Oriented Real-Time Distributed Computing, May 12-14, 2004.

GUSTAFSON, STEVEN C., (ENG)

T. W. Albrecht and S. C. Gustafson, "*Hidden Markov Models for Classifying SAR Target Images"*, Proc. SPIE Vol. 5427, No. 38, Orlando, FL, April 2004.

S. C. Gustafson and T. D. Hunt, "*Optimal Image Interpolation Using Gaussian Radial Basis Functions",* Proc. SPIE, Vol. 5298, No. 75, San Jose, CA, January 2004.

D. R. Parker, S. C. Gustafson, and T. D. Ross, "*Bayesian Mean and Variance for Target Recognition System Discrimination and Confidence Metrics*", ATRWG Symp, WPAFB, OH, June 2004.

D. R. Parker, S. C. Gustafson, and T. D. Ross, "*Integrated Receiver Operating Characteristic and Confidence Error Metrics for Assessing the Performance of Automatic Target Recognition Systems"*, Proc. SPIE Vol. 5427, No. 46, Orlando, FL, April 2004.

HALE, TODD B., Maj (ENG)

Caldwell, J. T. and T. B. Hale. "*Space-Time Adaptive Processing for Forward Looking Arrays*", in Proceedings of the 2004 IEEE Radar Conference, pages 514–519. Institute of Electrical and Electronics Engineers (IEEE), IEEE Aerospace and Electronic Systems Society, Philadelphia, PA. April 2004.

Corbell, P. M. and T. B. Hale. "*3-Dimensional STAP Results Using the Cross-Spectral Metric*", in Proceedings of the 2004 IEEE Radar Conference, pages 610–615. Institute of Electrical and Electronics Engineers (IEEE), IEEE Aerospace and Electronic Systems Society, Philadelphia, PA. April 2004.

Luminati, J. E. and T. B. Hale. "*Steering Vector Mismatch: Analysis and Reduction*", in Proceedings of the 2004 IEEE Radar Conference, pages 592–597. Institute of Electrical and Electronics Engineers (IEEE), IEEE Aerospace and Electronic Systems Society, Philadelphia, PA. April 2004.

Smith, B. E. and T. B. Hale. "*An Analysis of the Effect of Windowing on Selected STAP Algorithms*", in Proceedings of the 2004 IEEE Radar Conference, page 598-603. Institute of Electrical and Electronics Engineers (IEEE), IEEE Aerospace and Electronic Systems Society, Philadelphia, PA. April 2004.

HASTRITER, M. LARKIN, Maj (ENG)

W.C. Chew, J.M. Song, T.J. Cui, S. Velamparambil, L. Hastriter, and B. Hu "*Review of large scale computing in electromagnetics with fast integral equation solvers*," Computer Modeling in Engineering & Sciences, Vol. 5, No. 4, Apr 2004, pp. 361-372.

M. L. Hastriter and W. C. Chew, "*Comparing Xpatch, FISC, and ScaleME Using a Cone-Cylinder*" in IEEE Antennas and Propagation Society International Symposium*,* Volume 2, 20-26 June 2004, pp. 2007-2010.

M. L. Hastriter and W. C. Chew, "*Role of Numerical Noise in Ultra Large-Scale Computing*" in IEEE Antennas and Propagation Society International Symposium, Volume 3, 20-26 June 2004, pp. 3373-3376.

HAVRILLA, MICHAEL J., (ENG)

*S. Dorey, M. Havrilla, W. Baker, D. Nyquist and E. Rothwell, "*Error estimates of stepped waveguide material characterization measurements*, " APS/URSI Conference Proceedings, p. 369, Monterey, CA, June 2004.

S. Dorey, M. Havrilla, L. Frasch, C. Choi and E. Rothwell, "*Stepped-waveguide electromagnetic material characterization technique,*" Antenna Measurement Techniques Association (AMTA) Conference Proceedings, pp. 232-237, Irvine, CA, October 2003.

*S. Dorey, M. Havrilla, W. Wood, D. Nyquist and E. Rothwell, "*An expression for the physical optics current for a thick resistive layer,"* National Radio Science Meeting Abstracts, p.52, Boulder, CO, January 2004.

L. Kempel, M. Havrilla, S. Balasubramaniam and S. Schneider, "*Calibrated modeling measurements of materials,"* submitted, Appl. Comp. Electro. Society Conference Abstracts, p.19, Syracuse, N.Y., April, 2004.

HEMINGER, ALAN R., (ENV)

Heminger, Alan, R., with D. M. Kelley, Captain, USAF, *"A Delphi Assessment of the Digital Rosetta Stone Model,"* Hawaii International Conference on System Sciences (HICSS-37), January 2004.

HENGEHOLD, ROBERT L., (ENP)

*Johnson, P.M., M.A. Marciniak, R.L. Hengehold and D.E. Weeks, "Deviation of carrier dynamics in MWIR photonic structures from theoretical predictions," *Proceedings of the 2004 Great Lakes Photonics Symposium*, (SPIE, 2004).

HUDGENS, BRYAN J., (ENV)

Hudgens, Bryan J., "The Art of the Strategist," by William A. Cohen, PhD (Book Review), accepted for publication in *The Journal of Applied Management and Entrepreneurship* (2004).

Hudgens, Bryan J., "Operation Excellence: Succeeding in Business and Life the U.S. Military Way," by Mark Bender (Book Review), accepted for publication in *The Journal of Applied Management and Entrepreneurship* (2004).

JACQUES, DAVID R., (ENY)

*Decker, D., Jacques, D., Pachter, M., "Decision Factors for Cooperative Search, Classification and Target Attack using a Multi-Warhead Air Vehicle", Proceedings of the 2004 AIAA Guidance, Navigation and Control Conference, Providence, RI, Aug 04.

Jacques, D.R., "A Theoretical Foundation for Cooperative Search, Classification, and Target Attack", Chapter 11, Recent Developments in Cooperative Control and Optimization, Kluwer Academic Publishers, 2004.

*Jacques, D., Spenny C., Walter, J., "A Defense Focused Systems Engineering Curriculum", Proceedings of the IEEE Aerospace Sciences Conference, Big Sky, MT, Feb 04.

Osteroos, R., Pachter, M., Jacques, D.R., "Full Capability Formation Flight Control", Paper #AIAA-2004-5333, Proceedings of the 2004 AIAA Guidance, Navigation and Control Conference, Providence, RI, 16-19 Aug 04.

*Spenny, C., Jacques, D.R., "A Perspective on Systems Engineering Under the New US Department of Defense Acquisition Policy", 14th Annual INCOSE Symposium, Toulouse, France, 19-24 Jun 2004.

Zinn, A.W., Distefano, G., Jacques, D.R., "The Use of Integrated Architectures to Support Agent Based Simulation: An Initial Investigation", 14th Annual INCOSE Symposium, Toulouse, France, 19-24 Jun 2004.

KING, PAUL I., (ENY)

Beran, P.S., Pettit, C.L., Millman, D and King, P.I., "Spectral Methods for Stochastic Analysis of Aeroelastic Systems," International Conference on Spectral and High Order Methods, (ICOSAHOM 2004), Brown University, Providence, Rhode Island, June 21-25, 2004.

Casey, J., King, P.I. and Sondergaard, R., "Parameterization of Boundary Layer Control Dimples on a Low Pressure Turbine Blade," Paper #AIAA-2004-3570, 40th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Fort Lauderdale, FL, 11-14 Jul 2004.

*Millman, D.R., King, P.I., Maple, R.C. and Beran, P.S., "Predicting Uncertainty Propagation in a Highly Nonlinear System with a Stochastic Projection Method," Paper #AIAA-2004-1613, 45th AIAA/ASME Joint Structures, Structural Dynamics and Materials Conference, Palm Springs, CA, 19-22 April 2004.

Panzenhagen, K.L., King, P.I., Tucker, K.C. and Schauer, F.R., "Liquid Hydrocarbon Detonation Branching in a Pulse Detonation Engine," Paper #AIAA-2004-3401, 40th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Fort Lauderdale, FL, 11-14 Jul 2004.

Tucker, K.C., King, P.I., Bradley, R.P. and Schauer, F.R., "The Use of a Flash Vaporization System with Liquid Hydrocarbon Fuels in a Pulse Detonation Engine," Paper #AIAA-2004-0868, 42nd AIAA Aerospace Sciences Meeting, Reno, NV, 5-8 Jan 2004.

KLADITIS, PAUL E., Capt (ENG)

J. R. Caffey and P. E. Kladitis, "*The Effects of Ionizing Radiation on Microelectromechanical Systems (MEMS) Actuators: Electrostatic, Electrothermal, and Bimorph*," Proceedings of the 17th IEEE International Micro Electro Mechanical Systems Conference (MEMS 2004), pp. 133-136, Maastricht, the Netherlands, 25-29 January 2004.

R. A. Coutu, Jr. and P. E. Kladitis, "*Contact Force Models, including Electric Contact Deformation, for Electrostatically Actuated, Cantilever-Style, RF MEMS Switches*," Proceedings of the NSTI Nanotech 2004 Conference and Trade Show, vol. 2, pp. 219-222, Boston, MA, 7-11 March 2004.

F. R. Szabo and P. E. Kladitis, *"Design, Modeling and Testing of Polysilicon Optothermal Actuators for Power Scavenging Wireless Microrobots*," Proceedings of the 2004 International Conference on MEMS, NANO, and Smart Systems, Banff, Alberta, Canada, pp. 446-452, 25 – 27 August 2004.

LAMONT, GARY B., (ENG)

Lamont, Gary B., and David Caswell, "*Distributed Processor Allocation for Discrete Event Simulation and Digital Signal Processing using a Multiobjective Evolutionary Algorithm*," Proceedings of the Congress on Evolutionary Computation (CEC2003), pp. 1803-1811, December 2003.

Lamont, Gary B., and Richard O. Day, "*Force Field (PSP) Approximation Using Artificial Neural Networks,"* Proceedings of the Congress on Evolutionary Computation (CEC 2004), pp. 1020-1028, June 2004.

Lamont, Gary B., Richard O. Day, and Mark Kleeman, "*Analysis of a Parallel MOEA Solving the Multi-objective Quadratic Assignment Problem*," Proceedings of the Genetic and Evolutionary Computation Conference (GECCO 2004), pp. 402-403, June 2004.

Lamont, Gary B., Richard O. Day, and Mark Kleeman, "*Multi-Objective Evolutionary Search Performance with Explicit Building-Block Sizes for NPC Problem,"* Proceedings of the Congress on Evolutionary Computation (CEC 2004), pp. 728-736, June 2004.

Lamont, Gary B., Richard O. Day, and Mark Kleeman, "*Multi-Objective fast messy Genetic Algorithm Solving Deception Problems,"* Proceedings of the Congress on Evolutionary Computation (CEC2004), pp. 1502-1510, June 2004.

Lamont, Gary B., Richard O. Day, and Mark Kleeman, "*Solving the Multi-Objective Quadratic Assignment Problem using a fast messy Genetic Algorithm*, Proceedings of the Congress on Evolutionary Computation (CEC 2003), pp. 2277-2285, December 2003.

Lamont, Gary B., Mark Esslinger, Robert Ewing and Hoda Abdel-Aty-Zohdy, "*An Artificial Immune System Strategy for Robust Chemical Spectra Classification via Distributed Heterogeneous Sensors*," Proceedings of the Congress on Evolutionary Computation (CEC2004), pp. 1036-1044, June 2004.

*****Lamont, Gary B., Mark Knarr, Mark Goltz, and Junqi Huang**,** "*In Site Bioremediaiton of Perchlorate-Contaminated Groundwater using a Multi-Objective Parallel Evolutionary Algorithm,"* Proceedings of the Congress on Evolutionary Computation (CEC 2003), pp. 1604-1612, December 2003.

Lamont, Gary B., and Jesse Zydallis, "*Explicit Building-Block Multiobjective Evolutionary Algorithms for NPC Problems*, Proceedings of the Congress on Evolutionary Computation (CEC 2003), pp. 2685-2693, December 2003.

MAPLE, RAYMOND C., Lt Col (ENY)

*Millman, Daniel R., King, Paul I., Maple, Raymond C., Beran, Philip S., "Predicting Uncertainty Propagation in a Highly Nonlinear System with a Stochastic Projection Method", Paper #AIAA-2004-1613, 45th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, 19-22 April 2004.

MARCINIAK, MICHAEL A., (ENP)

*Abel, N.J., M.A. Marciniak and S.C. Cain, "Effects of aberrations on optical cross section measurements," *Proceedings of the 2004 Meeting of the Military Sensing Symposium Specialty Group on Infrared Countermeasures,* (2004).

*Johnson, P.M., M.A. Marciniak, R.L. Hengehold and D.E. Weeks, "Deviation of carrier dynamics in MWIR photonic structures from theoretical predictions," *Proceedings of the 2004 Great Lakes Photonics Symposium,* (SPIE, 2004).

*Perram, G.P. and M.A. Marciniak, "High Energy Laser Weapons: Technology Overview," *Proceedings of the SPIE Defense and Security Symposium 2004*, (SPIE, 2004).

MAYBECK, PETER S., (ENG)

* J. R. Gutierrez, P. S. Maybeck, and J. F. Raquet, "Multipath and GPS Signal Jamming Mitigation through Multiple Model Adaptive Estimation Applied to Ultra-Tightly Coupled GPS/INS Architecture," *Proceedings of the 60th Annual Meeting of the I.O.N.*, Dayton, Ohio, June 2004.

J. L. Williams and P. S. Maybeck, "Cost-Function-Based Hypothesis Control Techniques for Multiple Hypothesis Tracking," *Proceedings of the SPIE, Vol. 5428, pp. 167-179, SPIE Annual International Defense and Security Symposium*, Orlando, Florida, April 2004.

MCMULLAN, RICHARD J., Maj (ENY)

Earp, B. E., McMullan, R. J., and Gaitonde, D. V., "Magnetogasdynamic Flow Control of Irregular Mach Reflection," Paper #AIAA 2004-0753, *AIAA 42nd Aerospace Sciences Meeting and Exhibit*, 5-8 January 2004.

Earp, B. E., McMullan, R. J., and Gaitonde, D. V., "Numerical Simulation of Magnetogasdynamic Mach Reflection Flow Control," Paper #AIAA 2004-2558, *AIAA 35th Plasmadynamics and Lasers Conference*, 28 June – 1 July 2004.

McMullan, R. J., Lindsey, M. F., and Adamovich, I., "Experimental Validation of 3-D Magnetogasdynamic Compressible Navier-Stokes Solver," Paper #AIAA 2004-2269, *AIAA 35th Plasmadynamics and Lasers Conference*, 28 June – 1 July 2004.

MCNUTT, ROSS T., Lt Col (ENV)

Suddarth, S., R.T. McNutt, and W. Cooley, "Getting There FIRST." Air and Space Power Journal, pp. 39-50.Vol XVIII , No 1. Spring 2004.

MILLER, JOHN O., (ENS)

Faas, Paul D. and Miller, J.O., "Impact of an Autonomic Logistics System on the Sortie Generation Process," *Proceedings of the 2003 Winter Simulation Conference*, ed. S.E. Chick, P.J. Sanchez, D. Ferrin, and D.J. Morris, pp. 1021-1025, (2003).

OXLEY, MARK E., (ENC)

*Bjerkaas, Kristopher S., Mark E. Oxley, and Kenneth W. Bauer, Jr., "Consistency Results for the ROC Curves of Fused Classifiers," *Proceedings of SPIE, Signal Processing, Sensor Fusion, and Target Recognition XIII*, Editor: Ivan Kadar, Vol. 5429, pp. 361-372, Orlando, FL, April 2004.

*Bjerkaas, Kristopher S., Mark E. Oxley, and Kenneth W. Bauer, Jr., "Evaluating the Fusion of Automatic Target Classifier Systems," *Great Lakes Photonics Symposium*, on compact disc, Cleveland, OH, 10 June 2004.

*Hill, Justin M., Mark E. Oxley, and Kenneth W. Bauer, Jr., "Receiver Operating Characteristic Curves and Classifier Fusion," *Proceedings of the Artificial Neural Networks in Engineering Conference (ANNIE 2003),* Editors: C. Dagli, A. Buczak, J. Ghosh, M. Embrechts, O. Ersoy, pp. 864-869, St. Louis, MO, 1-4 November 2003.

*Leap, Nathan J., Paul Clemans, Kenneth W. Bauer, Jr., and Mark E. Oxley, "An Investigation of the Effects of Correlation, Autocorrelation, and Sample Size on Classifier Fusion and Optimal Classifier Ensembles," *Automatic Target Recognition Science and Technology Transition Symposium: Understanding Operational Needs and Emerging Challenges,* on compact disc, Air Force Institute of Technology, WPAFB, OH, 15-17 June 2004.

Magnus, Amy L. and Mark E. Oxley, "Techniques for Evaluating Classifiers in Application," *Proceedings of SPIE, Intelligent Computing: Theory and Applications II*, Editor: Kevin Priddy, Vol. 5421, pp. 134-141, Orlando, FL, April 2004.

*Oxley, Mark E. and Kenneth W. Bauer, Jr., "AFIT Sensor Fusion Research," *Automatic Target Recognition Science and Technology Transition Symposium: Understanding Operational Needs and Emerging Challenges,* on compact disc, Air Force Institute of Technology, WPAFB, OH, 15-17 June 2004.

Oxley, Mark E. and Steven N. Thorsen, "Fusion or Integration: What's the difference," *7th International Conference on Information Fusion* (FUSION 2004), pp. 429-434, Stockhlom, Sweden, 29 June 2004.

*Schubert, Christine M., Nathan J. Leap, Mark E. Oxley, and Kenneth W. Bauer, Jr., "Quantifying the Correlation Effects of Fused Classifiers," *Proceedings of SPIE, Signal Processing, Sensor Fusion, and Target Recognition XIII,* Editor: Ivan Kadar ,Vol. 5429, pp. 373-383, Orlando, FL, April 2004.

*Schubert, Christine M., Mark E. Oxley, and Kenneth W. Bauer, Jr., "On the Correlation of Fused ATR Classifiers," *Great Lakes Photonic Symposium*, on compact disc, Cleveland, OH, 10 June 2004.

*Storm, Susan A., Kenneth W. Bauer, Jr. and Mark E. Oxley, "An Investigation of the Effects of Correlation in Classifier Fusion," *Proceedings of the Artificial Neural Networks in Engineering Conference (ANNIE 2003),* Editors: C. Dagli, A. Buczak, J. Ghosh, M. Embrechts, O. Ersoy, pp. 619-624, St. Louis, MO, 1-4 November 2003.

Thorsen, Steven N. and Mark E. Oxley, "A Category Theory Description of Multisensor Fusion," *Proceedings of SPIE, Multisensor, Multisource Information Fusion: Architectures, Algorithms, and Applications 2004*, Editor: Belur V. Dasarathy, Vol. 5434, pp. 261-269, Orlando, FL, April 2004.

Thorsen, Steven N. and Mark E. Oxley, *"Comparing Fusors within a Category of Fusors," 7th International Conference on Information Fusion* (FUSION 2004), pp. 435-441, Stockhlom, Sweden, 29 June 2004.

Thorsen, Steven N. and Mark E. Oxley, "Multisensor Fusion Description using Category Theory," Paper No. 1330, *IEEE Aerospace Conference*, Big Sky, MT, 8-12 March 2003.

Thorsen, Steven, N. and Mark E. Oxley, "Receiver Operating Characteristics," *Automatic Target Recognition Science and Technology Transition Symposium: Understanding Operational Needs and Emerging Challenges*, on compact disc, Air Force Institute of Technology, Wright-Patterson Air Force Base, OH, 15-17 June 2004.

PACHTER, MEIR (ENG)

*Decker, D., D. Jacques and M. Pachter, ``*Establishment of Decision Factors in Support of Cooperative Wide Area Search and Engagement"*, Proceedings of the 2003 Conference on Decision and Control, Maui, Hawaii, December 9-12, 2003, paper No. ThAPI-2.

*Fisher, K., M. Pachter and J. Raquet, ``*Navigation with Time-Difference Of Arrival Measurements Obtained from Signals Of Opportunity"*, session D3-Military Navigation, Proceedings of the Institute Of Navigation Annual Meeting, June 7-9, 2004, Dayton, OH.

*Jacques, D. and M. Pachter, ``A Theoretical Foundation for Cooperative Search, Classification and Target Attack", book chapter, in ``Recent Developments in Cooperative Control and Optimization", Kluwer Academic, pp. 175-205 (2004).

E. Nelson and M. Pachter, ``*Linear Regression with Intercept*", Proceedings of the 2004 AIAA Guidance, Navigation and Control Conference, Providence, Rhode Island, August 16-19, 2004, AIAA paper No. AIAA-2004-4757.

M. Pachter, ``*Optical Flow for INS Aiding*", Proceedings of the 44th Israel Conference on Aerospace Sciences, Tel Aviv, Israel, February 25-26, 2004.

M. Pachter. R. Nelson and P. R. Chandler, ``*Concepts for Generating Coherent Phantom Radar Tracks Using Cooperating Vehicles",* Proceedings of the AIAA Guidance, Navigation and Control Conference, Providence, Rhode Island, August 16-19, 2004, AIAA paper No. 2004-5334.

Pachter, M., and A. Porter,``*Bearings-Only Measurements for INS Aiding: The 3D Case*", Proceedings of the American Control Conference, Boston, MA, June 30-July 2, 2004, paper FrP06.3.

*Schulz, C. S., D. Jacques and M. Pachter, ``Cooperative Control Simulation Validation Using Applied Probability Theory," book chapter in ``Theory and Algorithms for Cooperative Systems", Don Grundel et al Editors, World Scientific, 2004, pp. 482-498.

C. Schumacher, M. Pachter, L. S. Pachter and P. R. Chandler, ``*UAV Task Assignment with Timing Constraints via Mixed Integer Linear Programming",* Proceedings of the AIAA 3rd ``Unmanned Unlimited" Technical Conference, Workshop and Exhibit, Session UU 12, September 20-23, 2004, Chicago, IL, AIAA paper No. AIAA-2004-6410.

PATTERSON, KIRK A., Maj (ENS)

Patterson, K.A. and Condon, T., "Creative Approaches to Improving Segments of the Defense Transportation System", *Air Force Journal of Logistics,* Vol. 28. No. 2. Summer 2004.

Patterson, K.A. and Condon, T., "Supporting Special Operations Forces", *Air Force Journal of Logistics*, Vol 27. No 3 Fall 2003.

PERRAM, GLEN P., (ENP)

Mathew Lange, Carl Druffner, Patrick Kee, and Glen Perram, "Optical Diagnostics for the Pulsed Laser Deposition of $YBa_2Cu_3O_{7-x}$", *Proceedings of High Power Laser Ablation V*, SPIE **5448** 153 (2004).

Mathew Lange and Glen Perram, "Singlet Oxygen Kinetics in a Double Microwave Discharge" *Proceedings of High Power Laser Ablation V*, SPIE **5448** 1039 (2004).

PETERSON, GILBERT L., (ENG)

Laviers, K.R. and G.L. Peterson, "*Cognitive Robot Mapping with Polylines and an Absolute Space Representation,*" Proceedings of the IEEE 2004 International Conference on Robotics and Automation (ICRA), vol 4, pp. 3771-3776 (2004).

McBride, B.T., and G.L. Peterson, "*Blind Data Classification using Hyper-Dimensional Convex Polytopes*," Proceedings of the 17th International FLAIRS Conference, pp. 520-525 (2004).

RAINES, RICHARD A., (ENG)

*D. J. Clabaugh, M. A. Temple, R. A. Raines, and C. M. Canadeo, "*UWB Multiple Access Performance Using Time Hopped Pulse Position Modulation with Biorthogonal Signaling,"* 2003 IEEE Conference on Ultra Wideband Systems and Technologies, Reston, VA, November 16-19, 2003, pp. 330-333.

*G. H. Gunsch, R. A. Raines, and T. H. Lacey, "*Integrating the CDX into the Graduate Program*," 2003 IEEE International Conference on Systems, Man & Cybernetics, Washington DC, October 2003, pp. 4306-4310.

*J. Lopez, R. A. Raines, M. A. Temple, R. O. Baldwin, and J. P. Stephens, "*An Empirical Study of Electromagnetic Interference Caused by Ultrawideband Transmissions in an IEEE 802.11a Wireless Local Area Network*," Atlanta, GA, September 19-22, 2004, pp. 517-520.

*R. B. Noel, R. O. Baldwin, R. A. Raines, and M. A. Temple, "*Wireless LAN Performance in the Presence of Bluetooth Interferers,*" 2003 Australian Telecommunications, Networks and Applications Conference, October 2003.

RAQUET, JOHN F., (ENG)

Bouska, T. and J. Raquet, "*Development and Simulation of a Pseudolite-Based Flight Reference System*," Proceedings of 2004 National Technical Meeting of the Institute of Navigation, San Diego, CA, Jan 2004.

Eggert, R., J. Gutierrez, J. Raquet, "*Code and Phase Multipath Characterization for Beam-Steering Receivers*," Proceedings of 2004 National Technical Meeting of the Institute of Navigation, San Diego, CA, Jan 2004.

Eggert, R. and J. Raquet, "*Evaluating the Navigation Potential of the NTSC Analog Television Broadcast Signal*," Proceedings of ION GNSS-2004, Long Beach, CA, Sep 2004.

*Fisher, K., J. Raquet, and M. Pachter, "*Navigating with Time-Difference of Arrival Measurements Obtained from Signals of Opportunity,*" Proceedings of 2004 Annual Meeting of the Institute of Navigation, Dayton, OH, June 2004.

*Gutierrez, J, P. Maybeck, and J. Raquet, "*Multipath and GPS Signal Jamming Mitigation Through Multiple Model Adaptive Estimation Applied to Ultra-Tightly Coupled GPS/INS Architecture,*" Proceedings of 2004 Annual Meeting of the Institute of Navigation, Dayton, OH, June 2004.

Joffrion, J. and J. Raquet, "*Head Tracking for 3D Audio Using a GPS-Aided MEMS IMU*," Proceedings of 2004 National Technical Meeting of the Institute of Navigation, San Diego, CA, Jan 2004.

REEDER, MARK F., (ENY)

*Bjorge, S., Reeder, M. & Subramanian, C., "Flow Around an Object Projected from a Cavity into a Supersonic Freestream," Paper #AIAA Paper 2004-1253, 42nd Annual Aerospace Sciences Meeting and Exhibit, Reno NV, January 2004.

DeLuca, A., Reeder, M., Ol, M., Freeman, J., Bautista, I. & Simonich, M., "Experimental Investigation into the Aerodynamic Properties of a Flexible and Rigid Wing Micro Air Vehicle," Paper #AIAA Paper 2004-2396, presented at the AIAA Aerodynamic Measurement Technology and Ground Testing Conference, June 2004.

ROH, WON B., (ENP)

Grime, B. W., N. B. Terry, T. H. Russell, and W. B. Roh, "Efficient Multiple-beam Combining in Stimulated Brillouin Scattering Fiber Beam Combiner," *Technical Digest for the 2004 SSDLTR*, Albuquerque (2004).

SEETHARAMAN, GUNA (ENG)

J. Choudhury, G. Seetharaman and C. Cavanaugh., "*An Efficient Encoding Scheme for Ultra-fast A/D Converter,"* Proceedings of the IEEE Topical Conferences in Wireless Communication Technology. Honolulu, Hawaii. October 15-17, 2003.

A. Hafiane, S. Chaudhuri, G. Seetharaman, B. Zavidovique, "*Region Based Image Retrieval in GIS Database using Motif Co-occurrence Matrix"*, 3rd International Workshop On Pattern Recognition in Remote Sensing, August 27, 2004, Kingston University UK.

G. Seetharaman, H. Le, "*SmartSAM: A Multisensor Network Based Framework for Video Surveillance and Monitoring,"* Proceedings of the International Workshop on Mathematical Theory of Networked Sensors, Kathoilique Universite de Leuven, July 5-9, 2004.

Anant Utgikar, Guna Seetharaman and Ha Le., "*FPGA Implementable Architecture for Geometric Positioning,*" Proc. Of the IEEE International Conference on Field-Programmable Technology (FPT'03), The University of Tokyo, JAPAN December 15-17, 2003.

B. Zavidovique, S. Chaudhuri, G. Seetharaman, et.al, "*Image Retrieval using *– trees for GIS Application,"* Proceedings of the 8th World Conference on Systems, Cybernetics and Informatics. Orlando, Florida, July 18-21, 2004.

SWARTZ, STEPHEN M., Lt Col (ENS)

*Kahler, Harry, William A. Cunningham and Stephen M. Swartz. "Depot Repair Capacity as a Criterion for Transportation Mode Selection in the Retrograde Movement of Reparable Assets." *Journal of Transportation Management*. v15 n1 2004.

O'Brien, Kristina and Stephen M. Swartz. "A Comparison Of Implementation Issues and Strategies for Radio Frequency Identification Technologies Between the U.S. Military and Private Sector Organizations." *Journal of Transportation Managemen*t. v15, n2 2004.

*Swartz, Stephen M. and Alan Johnson. "A Multi-Method Approach to the Combat Air Forces Mix and Deployment Problem." *Mathematical and Computer Modelling*. v39, n6-8 2004.

TEMPLE, MICHAEL A., (ENG)

*D.J. Clabaugh, M.A. Temple, R.A. Raines, R.O. Baldwin and J.P. Stephens, "UWB Biorthogonal PPM in a Time Hopped Synchronous Network With Multipath Present," *8th World Multi-Conference on Systematics, Cybernetics, and Informatics* (SCI 2004), Orlando, FL, July 2004.

*D.J. Clabaugh, M.A. Temple, R.A. Raines, and C.M. Canadeo, "UWB Multiple Access Performance Using Time Hopped Pulse Position Modulation with Biorthogonal Signaling," *Proceedings of the 2003 IEEE Ultra Wideband Systems and Technologies Conference* (UWBST 2003), Reston, VA, 16-19 Nov 2003, pp. 330-333.

*J. Lopez, R.A. Raines, M.A. Temple, R.O. Baldwin, and J.P. Stephens, "An Empirical Study of Electromagnetic Interference Caused by Ultrawideband Transmissions in an IEEE 802.11a Wireless Local Area Network," Atlanta, GA, September 19-22, 2004, pp. 517-520.

*R.B. Noel, R.O. Baldwin, R.A. Raines and M.A. Temple, "Wireless LAN Performance in the Presence of Bluetooth Interferers," 2003 *Australian Telecommunications Networks and Applications Conference,* Melbourne, Australia, Dec 2003, pp. M1A.1-M1A.5.

*B. S. Peterson, R. O. Baldwin, and M. A. Temple, "Approaches for Non-cooperative Bluetooth Network Monitoring," *Proceedings of the 2003 IEEE Military Communications Conference* (MILCOM 2003), Boston, MA, October 2003.

TERZUOLI, ANDREW J., JR., (ENG)

P. Ya. Ufimtsev, A. J. Terzuoli, Jr. (ed.), R. D. Moore (trans.), "Theory of Diffraction in Electromagnetics," *Encino, CA, Tech Science Press*, 2003, ISBN: 0-9657001-7-8., Nov 2003.

TRAGESSER, STEPHEN G., (ENY)

Anderson, J. and Tragesser, S.G., "Optimal Constellation Design for Orbital Munitions Delivery System," Paper #AAS 04-113, AAS/AIAA Spaceflight Mechanics Meeting, Maui, HI, Feb. 2004.

Press, M.J., Tragesser, S.G., and Lovell, T.A., "Geometric Approach to Orbital Formation Mission Design," Paper #AAS 04-298, AAS/AIAA Spaceflight Mechanics Meeting, Maui, HI, Feb. 2004.

Straight, S.D., Tragesser, S.G., Howard, R. A. and Lovell, T.A., "Maneuver Design For Fast Satellite Circumnavigation," Paper #AAS 04-262, AAS/AIAA Spaceflight Mechanics Meeting, Maui, HI, Feb. 2004.

WEEKS, DAVID E., (ENP)

*Johnson, P.M., M.A. Marciniak, R.L. Hengehold and D.E. Weeks, "Deviation of carrier dynamics in MWIR photonic structures from theoretical predictions," *Proceedings of the 2004 Great Lakes Photonics Symposium,* SPIE, (2004).

WIESEL, WILLIAM E., (ENY)

Wiesel, William E. *Modern Astrodynamics*, ISBN 0-9748272-1-5, Aphelion Press, Summer 2004.

Wiesel, William E. *Modern Orbit Determination*, ISBN 0-9748272-0-7, Aphelion Press, Summer 2004.

3.7 SUBSTANTIAL CONSULTATIONS

[*Denotes Duplicate Entry, Multiple Faculty Members]

AROSTEGUI, MARVIN A., JR., Lt Col (ENS)

Storage & Supply Group, Joint Cross Steering Group, Base Realignment and Closure, 2003.

BULUTOGLU, DURSUN A., (ENC)

Provided statistical consulting to The Jackson Laboratory for designing breeding schemes to screen out Quantitative Trait Loci (QTL's) for various traits in mice.

DECKRO, RICHARD F., (ENS)

Member *CNA Weapons Effectiveness Working Group*, Chair Methodology Sub-Group

DELLA-ROSE, DEVIN J., Lt Col (ENP)

Della-Rose, Devin J.: Consultations with USAFA physics department faculty on chapters for the first-ever undergraduate space weather textbook, Sept 2004 – present.

Della-Rose, Devin J.: Substantial consultations with the 61S (physics) Force Development Team, HQ Air Force Weather Agency Applied Technology Directorate (HQ AFWA/DNX), and the USAFA Space Physics and Atmospheric Research Center (SPARC) to establish AFWA career-broadening assignments for 61S officers who pursue AFIT's space weather curriculum, Sept 2004 – present.

Della-Rose, Devin J.: Substantial consultations with the Air Force Weather (HQ AF/XOO-W) staff and 15W Force Development Team to promote 15W IDE officer assignments to attend AFIT's IDE space weather M.S. program, Aug 2004 – present.

Della-Rose, D. J., and C. G. Smithtro: Substantial consultation with the HQ Air Force Weather Agency Applied Technology Directorate (HQ AFWA/DNX) concerning space weather research topics for the AFIT GAP-06M class, Oct 2004.

DUCKRO, DONALD E., Lt Col (ENC)

Provided consultation to the Headquarters and Support Activities Joint Cross Service Group in support of Base Realignment and Closure with regard to military valuation and capacity analysis of all major administrative headquarters within the Department of Defense.

FIORINO, STEVEN T., Lt Col (ENP)

Fiorino, Steven T., Provided GPS dropsonde and atmospheric instrumentation expertise to Dr.James Greer, Senior Research Engineer, Center for Aircraft Structural Life Extension, U.S. Air Force Academy, CO, October 2004.

FRANKE, MILTON E., (ENY)

AFRL (Propulsion Directorate, Materials and Manufacturing Directorate, Armament Directorate)

Chair, ASME Rules Transition Project Team

Chair, Committee on Organization and Rules (a committee of the ASME Board of Governors)

GOLTZ, MARK N., (ENV)

Goltz, M.N., Helped the AF Center for Environmental Excellence evaluate groundwater contamination source removal research by the Colorado School of Mines and Colorado State University, Feb 04.

HALE, TODD B., Maj (ENG)

Consultant with National Air and Space Intelligence Center (NASIC) on evaluating current radar signal processing techniques with performance prediction and modeling

*M.A. Temple and T.B. Hale., "Phase II Technical Support, Development and Demonstration of RF Sensor Technologies," AFRL – Sensors Directorate, Mr Bill Moore and Mr Jim Stevens.

HEMINGER, ALAN R., (ENV)

Senior analyst of study of information aggregation risks in the use of GeoBase information system, for Col Brian Cullis (OSD-ATL) June – Sept 2004.

Senior analyst of study of strategies for implementing electronic records management Air Force-wide, for the Chief Information Officer of the Air Force, June – Sept 2004.

HICKS, MICHAEL J., (ENV)

Hicks, Michael J., *"Innovative Highway Financing Options"* Federal Highways Administration, US Department of Transportation (refereed report).

Hicks, Michael J. and Asha Puttaiah. *Growth Assessment and Recommendations: I-64 High Technology Corridor*, (2003) Rahall Appalachian Transportation Institute, TTP-33.

Hicks, Michael J., and Viktoriya Rusalkina. *School Consolidation and Educational Performance: An Economic Analysis of West Virginia High Schools,* (2004) A Report to the West Virginia School Building Authority.

Hicks, Michael J., and Viktoriya Rusalkina. *School Quality and Educational Outcomes: An Analysis of West Virginia Middle and High Schools. Regional Correlates of Educational Performance In West Virginia Middle and High Schools,* A Report to the West Virginia Legislature, December 2003.

JACQUES, DAVID R., (ENY)

BGen Bowlds (ASC) – A Systems Engineering Case Study on Avionics Modernization Programs (April-Sept 04).

R. Murphey (AFRL/MN) – A Review and Critique of the Weapon Data Link Program (Jul-Sept 04).

Col D. Walker (AFRL/CV) – Implementation and Application of Systems Engineering within the AFRL (April-Jun 04).

KLADITIS, PAUL E., Capt (ENG)

Problem Solution Panel Member, "Instrumenting the B-2 for Health Monitoring of the Aft Deck," AFRL/MLL, April 2004.

KUNZ, DONALD L., (ENY)

Consultant to the Special Operation SPO with the purpose of developing an in-house capability for rotorcraft analysis that will be applied to the Personnel Recovery Vehicle (PRV) program.

LAMONT, GARY B., (ENG)

Air Force Research Laboratory – Information Directorate (AFRL/IF); Bioinformatics, Evolutionary Computation, Parallel and Distributive Processing for Signal and Image Processing – Dr. Robert Ewing and Dr. Richard Linderman

Air Force Research Laboratory – Materials and Manufacturing Directorate (AFRL/MN): Protein Structure Prediction – Dr. Ruth Pachter

Air Force Research Laboratory - Sensors Directorate (AFRL/SNDD): High-Frequency Laser Design using Multi-objective Optimization, Dr. Thomas Nelson

Air Force Research Laboratory – Sensors Directorate (AFRL/SNZW): Parallel Simulation of UAVs, Mike Foster

MAPLE, RAYMOND C., Lt Col (ENY)

Provided consultation and software development services to 46SK/SKE, AF SEEK EAGLE office, with the aim of improving and adding new capabilities to the Beggar aircraft/store carriage and separation computational fluid dynamics code. These new capabilities are part of an ongoing store certification enterprise effort to improve sharing of tools and data across various Air Force and Navy organizations who conduct store certification activities.

MILLER, JOHN O., (ENS)

Senior member of team of analysts (including four OR M.S students) deployed for two weeks to USAFE in support of Exercise Austere Challenge 04. Served as AFEUR Deputy A9 during exercise and directed team of analysts serving in the Air and Space Operations Center at Ramstein AFB, Germany as well as analysts at the Warrior Prep Center.

MILLS, ROBERT F., (ENG)

Member of NSA-appointed team representing academia, industry, and government, chartered with developing national education and training standards for Information Security Systems Engineers. Work was performed under the auspices of the Committee for National Security Systems (CNSS), formerly known as the National Security Telecommunications and Information Systems Security Committee (NSTISSC).

PACHTER, MEIR (ENG)

Consultant to AFRL/VACA and member of AFRL/VACA, AFOSR Star Team.

PALAZOTTO, ANTHONY N., (ENY)

AFOSR Symposium T&E Symposium - June 22-23, 2004 -presented research on Gouging.

M. Derriso - AFRL/VA - reported on Structural Health Monitoring, February 2004 and December 2003.

B. Morrisey – AFRL/ML - discussed very high frequency rates - June 2004.

G. Schoeppner - AFRL/ML - discussed temperature effects on polymers - February 2004.

PERRAM, GLEN P., (ENP)

Perram, G.P, Ongoing discussions with the High Energy Laser working groups in his role as Chairman, Modeling and Simulation Technical Area Working Group, High Energy Laser Joint Technology Office, May 2002 – present.

POHL, ANTONY J., Maj (ENC)

Provided statistical consulting to the AFRL materials lab to predict F-16 landing gear failures.

Provided statistical consulting to the B-2 SPO on proposed engine inlet coating to prevent ice phobic events.

SMITHTRO, CHRISTOPHER G., (ENP)

*Della-Rose, D. J., and C. G. Smithtro: Substantial consultation with the HQ Air Force Weather Agency Applied Technology Directorate (HQ AFWA/DNX) concerning space weather research topics for the AFIT GAP-06M class, Oct 2004.

TALBERT, MICHAEL L., Lt Col (ENG)

Lead system architect for modernization of Aviator Custom Mask tracking system for 88th ABW/SG. Contains specification and tracking information for 1000's of custom mask inserts for all USAF Pilots.

TEMPLE, MICHAEL A., (ENG)

*M.A. Temple and T.B. Hale., "Phase II Technical Support, Development and Demonstration of RF Sensor Technologies," AFRL – Sensors Directorate, Mr Bill Moore and Mr Jim Stevens.

TERZUOLI, ANDREW J., JR., (ENG)

National Intel Council (Passive Sensors): Member Air & Missile Defense Advisory Board

WEBB, TIMOTHY S., Maj (ENC)

Provided statistical consultation and recommendations for the reliability demonstration testing of the Ground Multi-band Terminal (GMT). GMT is a $38.6M engineering and manufacturing development (EMD) effort developing a quad band satellite communications terminal for the USAF.

Senior statistical analyst developing a data collection plan for Man Portable Air Defense Systems (ManPADS) survivability of USAF transport aircraft.

3.8 PRESENTATIONS

[*Denotes duplicate entry, multiple faculty authors.]

ABRAMSON, MARK A., Lt Col (ENC)

Abramson, Mark A., "*NOMAD and NOMADm: Software Demonstrations*" (with Gilles Couture), Surrogate Optimization Workshop, Rice University, Houston, TX, 24-25 May 2004.

Abramson, Mark A., "*Pattern Search Algorithms for Engineering Optimization*," University of Dayton, Dayton, OH, 9 October 2003.

Abramson, Mark A., "*Pattern Search Algorithms for Mixed Variable Optimization*," Air Force Operations Research Symposium 2003, Hanscom AFB, MA, 22-24 October 2003.

Abramson, Mark A., "*A Second Order Analysis of Pattern Search*," Optimization Days 2004, Montreal, Canada, 10-12 May 2004.

Abramson, Mark A., "*Second Order Behavior of Pattern Search*," First International Conference on Continuous Optimization (ICCOPT-I), Rensselaer Polytechnic Institute, Troy, NY, 2-4 August 2004.

ANDERSON, BRADLEY E., Maj (ENS)

Anderson, Bradley E., "Upstream Optimal Linear Decision Modeling," Midwest Decision Sciences Institute, 2004 Proceedings, Cleveland, OH, April 2004.

ANTHENIEN, RALPH A. JR., (ENY)

Anthenien, R.A., Armstrong, J.M., "In-Situ Measurements of Local Equivalence Ratio using Chemi-luminesence in an Ultra Compact Combustor" 29th AIAA Dayton-Cincinnati Aerospace Sciences Meeting, Dayton OH, 9 Mar 2004.

BAILEY, WILLIAM F., (ENP)

Josyula, E. and W.F. Bailey and K. Xu, "Nonequilibrium Relaxation in Hypersonic Flows", presented at the AIAA Thermophysics Conference., Portland, OR, June 2004.

BAUER, KENNETH W., JR., (ENS)

Albrecht, Timothy W. and Kenneth W. Bauer, Jr., "Fusion of Two Single-Feature Hidden Markov Model Classifiers Operating on MSTAR SAR Ground Targets Across Aspect Angle," ATR S&T Transition Symposium, "Understanding Operational Needs and Emerging Challenges," Air Force Institute of Technology, WPAFB, OH, 15-17 June 2004.

Albrecht, Timothy W. and Kenneth W. Bauer, Jr., "Model Complexity in Hidden Markov Models," *72nd MORS Symposium*, NPS, Monterey, CA, 22 – 24 June 2004.

*Bjerkaas, Kristopher S., Mark E. Oxley, and Kenneth W. Bauer, Jr., "*Consistency Results for the ROC Curves of Fused Classifiers*," SPIE, Signal Processing, Sensor Fusion, and Target Recognition XIII, Orlando, FL, 12-16 April 2004.

*Bjerkaas, Kristopher S., Mark E. Oxley, and Kenneth W. Bauer, Jr., "*Evaluating the Fusion of Automatic Target Classifier Systems*," Great Lakes Photonics Symposium, on compact disc, Cleveland, OH, 10-11 June 2004.

*Clemans, P., Kenneth W. Bauer, and Mark E. Oxley, "*Maximizing Classifier Accuracy by Varying Fusion Techniques*," 72nd MORS Symposium, Naval Post-Graduate School, Monterey, CA. 22 – 24 June 2004.

*Hill, Justin M., Mark E. Oxley, and Kenneth W. Bauer, Jr., "*Receiver Operating Characteristic Curves and Classifier Fusion*," Artificial Neural Networks in Engineering Conference (ANNIE 2003), St. Louis, MO, 4 November 2003.

Laine, Trevor I. and Kenneth W. Bauer, Jr., "A Mathematical Framework to Optimize Rejection and ROC Thresholds of Correlated Sensor Data Fused through Time," ATR S&T Transition Symposium, "Understanding Operational Needs and Emerging Challenges," Air Force Institute of Technology, WPAFB, OH, 15-17 June 2004.

Laine, Trevor I. and Kenneth W. Bauer, Jr., "A Mathematical Framework to Optimize Rejection and ROC Thresholds of Correlated Sensor Data Fused Through Time," *72nd MORS Symposium,* NPS, Monterey, CA, 22 – 24 June 2004.

*Leap, Nathan J., Kenneth W. Bauer, and Mark E. Oxley, "*Data Correlation, Sample Size, and Feature Selection Effects on Fusion Techniques*," 72nd MORS Symposium, Naval Post-Graduate School, Monterey, CA, 22 – 24 June 2004.

*Leap, Nathan J., Kenneth W. Bauer, Jr., and Mark E. Oxley, "An Investigation of the Effects of Correlation, Autocorrelation, and Sample Size in Classifier Fusion", *72nd MORS Symposium*, NPS, Monterey, CA, 22 – 24 June 2004.

*Leap, Nathan J., Paul Clemans, Kenneth W. Bauer, Jr., and Mark E. Oxley, "*An Investigation of the Effects of Correlation, Autocorrelation, and Sample Size on Classifier Fusion and Optimal Classifier Ensembles*," Automatic Target Recognition Science and Technology Transition Symposium: Understanding Operational Needs and Emerging Challenges, on compact disc, Air Force Institute of Technology, WPAFB, OH, 15-17 June 2004.

*Oxley, Mark A. and Kenneth W. Bauer, Jr., "*AFIT Sensor Fusion Research*," Automatic Target Recognition Science and Technology Transition Symposium: Understanding Operational Needs and Emerging Challenges, on compact disc, Air Force Institute of Technology, Wright-Patterson Air Force Base, OH, 15-17 June 2004.

*Oxley, Mark E. and Kenneth W. Bauer, Jr., "*ATR Fusion Research*," AFOSR review, Pasadena, CA, 9 August 2004.

*Schubert, Christine M., Nathan J. Leap, Mark E. Oxley, and Kenneth W. Bauer, Jr., "*Quantifying the Correlation Effects of Fused Classifiers*," SPIE, Signal Processing, Sensor Fusion, and Target Recognition XIII, Orlando, FL, 12-16 April 2004.

*Schubert, Christine M., Mark E. Oxley, and Kenneth W. Bauer, Jr., "*On the Correlation of Fused ATR Classifiers*," Great Lakes Photonic Symposium, on compact disc, Cleveland, OH, 10-11 June 2004.

*Storm, Susan A., Kenneth W. Bauer, Jr., and Mark E. Oxley, "*An Investigation of the Effects of Correlation in Classifier Fusion*," Artificial Neural Networks in Engineering Conference (ANNIE 2003), St. Louis, MO, 4 November 2003.

BELL, JOHN E., Maj (ENS)

*Bell, J.E. and McMullen, P.R. "Recognizing Patterns in Intervention to Improve Logistics Decision Making," Invited presentation at INFORMS 2003, October, 2003, Atlanta, GA.

*Bell, J.E. and McMullen, P.R. "A Simulated Annealing Approach for the Composite Facility Location and Resource Allocation Problem," 50th Annual North American Meetings of the Regional Science Association International, November 2003. Philadelphia, PA.

CAIN, STEPHEN C., (ENG)

Cain, S. C, "Algorthmic Enhancements for the Laser Vision System," Laser Vision Program Management Review, Orlando, FL, July 2004.

CANFIELD, ROBERT A., (ENY)

Canfield, Robert A. (2004), "Analytical Certification and Multidisciplinary Integration," *4th Annual Dayton Area Graduate Studies Institute Symposium*, Dayton, Ohio, March 2.

Canfield, Robert A. (2003), "A Joined-Wing Aeroelastic Design with Geometric Non-Linearity," NATO Research and Technology Agency Advanced Course on *Novel Aircraft Design Concepts for the 21st Century*, Instituto Superior Tecnico, Lisbon, Portugal, Oct 20–22.

Canfield, Robert A. (2003), "Sensor-Craft Airframe Concepts," *Long Endurance/High Altitude Intelligence/Surveillance/Reconnaissance Conference*, Wright-Patterson AFB, Ohio, October 27–29.

CHILTON, LAWRENCE K., (ENC)

Chilton, Lawrence K., "*hp Finite Element Methods*," Invited Speaker, Mathematics Department Colloquium, Brigham Young University, Provo, UT, 6 January 2004.

Chilton, Lawrence K., "*Markov Chain Monte Carlo Methods for Image Analysis*," Pacific Northwest National Labs, Statistical and Mathematical Sciences Division, Richland, WA, 21 September 2004.

Chilton, Lawrence K., "*Weapon System Modeling With Uncertainty – Two Examples*," Invited Speaker, Pacific Northwest National Labs, Statistical and Mathematical Sciences Division, Richland, WA, 8 June 2004.

DECKRO, RICHARD F., (ENS)

J. Darin Loftis, Richard F. Deckro, Stephen P. Chambal, and T.S. Kelso, "The Air Warrior's Value of National Security Space", *INFORMS Atlanta*, October 2003.

Greg Parnell and Dick Deckro, "The Value of Intelligence", *INFORMS Atlanta*, October 2003.

Kristopher Pruitt, Richard F. Deckro, and Stephen P. Chambal, "Modeling Homeland Security: A Capabilities Based Approach", *INFORMS Atlanta*, October 2003.

Edward A. Pohl, Michael Kwinn, Dick Deckro, "Eliciting Information from the Decision Maker: Interfacing with Afghanistan Operations Decision Makers", *Military Operations Research Workshop on Decision Aids/Support to Joint Operations Planning*, Omaha, NE, November 2003.

Edward A. Pohl, Michael Kwinn, Dick Deckro, "Establishing an Operational Assessment Decision Support Tool for Ongoing Operations", *8th United States/German Operations Research Symposium*, Dresden, Germany, November 2003.

*William E. Woodward, Richard F. Deckro, Jeffrey P. Kharoufeh, and Stephen P. Chambal, "Modeling and Measuring Military Capability Risk", *CORS/INFORMS International Meeting,* Banff, Alberta, Canada, May 2004.

Capt Timothy Porter, Maj Stephen P. Chambal, and Richard F. Deckro, "Value-Focused Thinking in the Presence of Weight Ambiguity: A Solution Technique Using Monte Carlo Simulation", *72nd MORS Symposium*, Monterey CA, June 2004.

*Capt Sara Sterling, Richard F. Deckro, and James W. Chrissis, "Aggregation Techniques for Social Network Analysis", *72nd MORS Symposium*, Monterey CA, June 2004.

*1st Lt Damon B. Richardson, Richard F. Deckro, Maj Victor D. Wiley, "Modeling and Analysis of Post-Conflict Reconstruction", *21st International Symposium on Military Operations Research*, Dolce Norton Manor, Sutton Scotney, Hampshire, UK, Aug 30 – Sept 3, 2004.

DELLA-ROSE, DEVIN J., (ENP)

Della-Rose, D. J., "Air Force Institute of Technology Space Weather Education." Presented at the 2nd Joint Oversight Board for Meteorology (JOBM) meeting, Naval Postgraduate School, on 11 Aug 2004.

Della-Rose, D. J., "Air Force Institute of Technology Space Weather Research Update." Presented at the 2nd Air Force Weather Agency (AFWA) Research and Development Summit, Omaha, NE, on 9 Sep 2004.

Keyser, H. L., B. S. Green, D. J. Della-Rose, J. J. Sojka, P. J. Erickson, M. R. Hairston, and F. J. Rich, "Comparison of DMSP SSIES Density and Temperature Measurements with Ground-Based Incoherent Scatter Radar Data." Presented at the 2003 American Geophysical Union Fall Conference, San Francisco, CA, on 11 December 2003.

FIORINO, STEVEN T., Lt Col (ENP)

Fiorino, Steven T., "Evaluation of Uncertainty in Atmospheric Effects Impacts on Weight-Constrained High Energy Laser Weapon System Effectiveness in Air-to-Ground Scenarios." Presented at the 2004 Air Force Weather Research and Development Summit, Omaha, NE 9 Sep 2004.

Fiorino, Steven T., "The HELEEOS Atmospheric Effects Package: A Probabilistic Method for Evaluating Uncertainty in Low-Altitude High Energy Laser Effectiveness," Presented at the 2004 Annual Directed Energy Professional Society Symposium, Rockville, MD, 20 Oct 2004.

FRANKE, MILTON E., (ENY)

Brock, M. A. and Franke, M. E., "Two-Stage-to-Orbit Reusable Launch Vehicle Propulsion Performance Study," Paper #AIAA-2004-3903, accepted for presentation at the 40th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, Ft Lauderdale, FL, 11-14 July 2004.

Franke, M. E. and Ari, G., "Use of Cargo Aircraft for Launching Precision-Guided Munitions," Paper #AIAA-2004-1250, 42st AIAA Aerospace Sciences Meeting and Exhibit, Reno, NV, 5-8 January 2004, 11 pages.

GODA, MATTHEW E., (ENG)

J Schmidt, B. Duncan, E. Watson, M. Goda, "*Statistics of Uplink Signal Fades in Ground-to-Air Laser Communication,*" Great Lakes Photonics Symposium, Cleveland, OH, May 2004.

GOLTZ, MARK N., (ENV)

Agrawal, A., S.W. Niekamp, K.G. Boggs, D.L. Phillips, M.D. Welling, M.R. Stevens, and M.N. Goltz, "*In Situ* Treatment of Groundwater Contaminated with Nitroaromatics and Chlorinated Hydrocarbons," Fourth International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey California, 24-27 May 2004.

Agrawal, A., K. Pallavi, and M.N. Goltz, "Reduction of Nitrate and Nitrite with Pd/Al_2O_3 Catalyst with Formate and H_2 as Electron Donors at Bench Scale: Implications for In Situ Treatment of Nitrate Contaminated Groundwater," Division of Geochemistry, 227th ACS National Meeting, Anaheim, CA, 28 March-1 April 2004.

Goltz, M.N., "Development and Application of an *In Situ* Technology to Treat Various Soil and Groundwater Contaminants," Proceedings, International Symposium on Soil Pollution Prevention: Policy and Remediation Technology, Korea Environment Institute, Seoul, Korea, 15 October 2003.

Huang, J., M.E. Close, L. Pang, and M.N. Goltz, "Innovative Method to Measure Flux of Dissolved Contaminants in Groundwater," Fourth International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey California, 24-27 May 2004.

*Knarr, M.R., J. Huang, G.B. Lamont, and M.N. Goltz, "Multi-objective Optimization of an In Situ Bioremediation Technology to Treat Perchlorate-Contaminated Groundwater," Conference on Accelerating Site Closeout, Improving Performance, and Reducing Costs Through Optimization, Dallas, Texas, 15-17 June 2004.

Wood, A.L., M.D. Annable, J.W. Jawitz, C.G. Enfield, R.W. Falta, M.N. Goltz, and P.S.C. Rao, "Impact of DNAPL Source Treatment on Contaminant Mass Flux," Fourth International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey California, 24-27 May 2004.

GUSTAFSON, STEVEN C., (ENG)

S. C. Gustafson and D. R. Parker, "*Bayesian Mean and Variance Functions for Gaussian Radial Basis Function Interpolation",* AFIT Seminar, March 2004.

S. C. Gustafson and D. R. Parker, "*Bayes-Optimal Mean and Variance Functions for Receiver Operating Characteristics",* AFIT Seminar, February 2004.

HALE, TODD B., Maj (ENG)

Caldwell, James T. and Todd B. Hale. *"Forward Looking Radar: Interference Modeling, Characterization, and Suppression."* In Sensor Technology Algorithm Research (STAR) Workshop. Air Force Research Laboratory, Sensors Directorate, Wright-Patterson AFB, OH. September 2004.

Muend, P. E. and T. B. Hale. "*Cross Range Smear Characterization in Xpatch ISAR Images*", in 2004 EMCC (Electromagnetic Code Consortium) Annual Meeting. 2004. Accepted for publication March 2004.

HENGEHOLD, ROBERT L., (ENP)

*Ahoujja, Mo., H. C. Crocket, M. B. Scott, Y. K. Yeo, and R. L. Hengehold. "Photoluminescence characterization of defects introduced in 4H-SiC during high energy proton irradiation and their annealing behavior." Presented at the Spring Meeting of the Materials Research Society held on 12-16 April 2004 in San Francisco.

*Ahoujja, Mo., Said Elhamri, Rex Berney, Y. K. Yeo, and R. L. Hengehold. "Influence of arsenic and silicon doping on the electrical properties of GaN epitaxial layers grown by MOCVD." Presented at the March 2004 Meeting of the American Physical Society, held on 22-26 March 2004 in Montreal, Canada.

*Cumblidge, K, P.M. Johnson, M.A. Marciniak, R.L. Hengehold and D.E. Weeks, "Time-Resolved Photoluminescence Spectra of Mid-Infrared Quantum Well Laser Structures." Presented at the Ohio Optics Consortium Fall 2003 Meeting, held on 12 Nov 2003 in Dayton, OH.

*Johnson, P.M., M.A. Marciniak, R.L. Hengehold and D.E. Weeks, "Deviation of carrier dynamics in MWIR photonic structures from theoretical predictions." Presented at the 2004 Great Lakes Photonics Symposium held on 7-11 June 2004 in Cleveland, OH.

*Johnson, P.M., K. Cumblidge, M.A. Marciniak, R.L. Hengehold, D.E. Weeks and G.W. Turner, "Excitation- and structure-dependence of recombination mechanisms in antimony-based MWIR photonic devices." Presented at the American Physical Society March 2004 Meeting (B10 9) held on 22-26 March 2004 in Montreal, Canada.

*Ryu, M. Y., Y. K. Yeo, E. A. Chitwood, R. L. Hengehold, and T. Steiner, "Electrical activation studies of ion-implanted $Al_xGa_{1-x}N$ with Si." Presented at the March 2004 Meeting of the American Physical Society, held on 22-26 March 2004 in Montreal, Canada.

*Ryu, M. Y., Y. K. Yeo, E. A. Chitwood, R. L. Hengehold, and T. Steiner, "Electrical Activation Studies of Si-implanted $Al_xGa_{1-x}N$ as a Function of Ion Dose, Anneal Temperature, and Anneal time" Presented at the 12th International Symposium on the Physics of Semiconductors and Applications (ISPSA-24), held on March 14-16, 2004 in Gyeongju, Korea.

HICKS, MICHAEL J., (ENV)

Hicks, Michael J "Broadband Telecommunications and Rural Growth" West Virginia Technology Conference, (August, 2004).

Hicks, Michael J., "A Quasi-experimental Analysis of the Impact of Casino Gambling on Regional Economic Performance" *Proceedings of the National Tax Association, 2003.*

Hicks, Michael J., *Small Manufacturing Firms and the West Virginia Economy*, Made Right Here Conference, (March, 2004).

Hicks, Michael J., *School Quality and Educational Outcomes* West Virginia Board of Education (July, 2004).

Hicks, Michael J., *School Quality and Educational Outcomes* West Virginia Legislative Oversight Committee on Education (December, 2003).

HUDGENS, BRYAN J., (ENV)

Hudgens, Bryan J., "Trends in Global Purchasing and Supply Management," Presentation to the *Institute for Supply Management,* Dayton OH, February 2004.

JACQUES, DAVID R., (ENY)

*Decker, D., Jacques, D., Pachter, M., "Decision Factors for Cooperative Search, Classification and Target Attack using a Multi-Warhead Air Vehicle", Proceedings of the 2004 AIAA Guidance, Navigation and Control Conference, Providence, RI, Aug 04.

Jacques, D.R., "Cooperative Search, Classification and Attack for Autonomous Air Vehicles", International Quality and Productivity Centre's (IQPC's) 4th Annual UCAV Conference, London, England, 25-26 October 2004.

*Jacques, D., Spenny C., Walter, J., "A Defense Focused Systems Engineering Curriculum", Proceedings of the IEEE Aerospace Sciences Conference, Big Sky, MT, Feb 04.

*Osteroos, R., Pachter, M., Jacques, D.R., "Full Formation Flight Control", Proceedings of the 2004 AIAA Guidance, Navigation and Control Conference, Providence, RI, Aug 04.

*Spenny, C., and Jacques, D.R., "A Perspective on Systems Engineering Under the New US Department of Defense Acquisition Policy", 14th Annual INCOSE Symposium, Toulouse, France, 19-24 Jun 2004.

Zinn, A.W., Distefano, G., Jacques, D.R., "The Use of Integrated Architectures to Support Agent Based Simulation: An Initial Investigation", 14th Annual INCOSE Symposium, Toulouse, France, 19-24 Jun 2004.

JOHNSON, ALAN W., (ENS)

*Brigantic, R. and A. Johnson, "Strategic Airlift En Route Analysis and Considerations to Support the Global War on Terrorism," European En Route Infrastructure Committee Conference, Stuttgart GE, 17-19 August 2004.

Johnson, A. and J. Bulldis, "Strategic Airlift Munitions Planning Factors," INFORMS National Meeting, Denver CO, 25-27 October 2004.

Johnson, A. and M. Gill, "Stryker Brigade Airlift Deployment," INFORMS National Meeting, Denver CO, 25-27 October 2004.

Johnson, A., M. Gill, and J. Bulldis, "An Analysis of Global En Route Hazardous Cargo Infrastructure Capabilities and Requirements," 72nd MORS Symposium, Naval Postgraduate School. 22-24 June 2004.

KHAROUFEH, JEFFEREY P., (ENS)

Cox, S. and J.P. Kharoufeh (2003) Markov reward models for lifetime estimation in prognostics. Invited Session, *INFORMS Annual Meeting*, Atlanta, GA, October 19-22, 2003.

*Peterson, B., Baldwin, R., and J.P. Kharoufeh (2004). A specification-compatible Bluetooth inquiry simplification. *The 37th Hawaii International Conference on System Sciences (HICSS)*, Waikaloa, Hawaii, January 5-8, 2004.

*Woodward, W.E., Deckro, R.F., Kharoufeh, J.P., and S.P. Chambal (2004). Modeling and measuring military capability risk, *CORS/INFORMS Joint International Meeting*, Banff, Alberta, Canada, May 16-19, 2004.

KING, PAUL I., (ENY)

Beran, P.S., Pettit, C.L., Millman, D. and King, P.I., "Spectral Methods for Stochastic Analysis of Aeroelastic Systems," International Conference on Spectral and High Order Methods, (ICOSAHOM 2004), Brown University, Providence, Rhode Island, June 21-25, 2004.

Casey, J., King, P.I. and Sondergaard, R., "Parameterization of Boundary Layer Control Dimples on a Low Pressure Turbine Blade," Paper #AIAA-2004-3570, 40th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Fort Lauderdale, FL, 11-14 Jul 2004.

*Millman, D.R., King, P.I., Maple, R.C. and Beran, P.S., "Predicting Uncertainty Propagation in a Highly Nonlinear System with a Stochastic Projection Method," Paper #AIAA 2004-1613, 45th AIAA/ASME Joint Structures, Structural Dynamics and materials Conference, Palm Springs, CA, April 19-22, 2004.

Panzenhagen, K.L., King, P.I., Tucker, K.C. and Schauer, F.R., "Liquid Hydrocarbon Detonation Branching in a Pulse Detonation Engine," Paper #AIAA-2004-3401, 40th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Fort Lauderdale, FL, 11-14 Jul 2004.

Tucker, K.C., King, P.I., Bradley, R.P. and Schauer, F.R., "The Use of a Flash Vaporization System with Liquid Hydrocarbon Fuels in a Pulse Detonation Engine," Paper #AIAA-2004-0868, 42nd AIAA Aerospace Sciences Meeting, Reno, NV, 5-8 Jan 2004.

KLADITIS, PAUL E., Capt (ENG)

P. E. Kladitis, "Mechanical Computing With MEMS," Invited Talk, HKN Professional Society Meeting, 6 November 2003

LAMONT, GARY B., (ENG)

*Lamont, Gary B., Kevin P. Anchor, Paul D. Williams, Gregg H. Gunsch, "*Evolutionary Algorithm Approaches for Detecting Computer Network Intrusion*, Proceedings of the GECCO 2004 Workshop on Military and Security Applications of Evolutionary Computation, June 2004.

Lamont, Gary B., David Caswell, Richard Day, Traci Keller, "*Design of Military Applications with Evolutionary Algorithms,*" Proceedings of the GECCO 2004 Workshop on Military and Security Applications of Evolutionary Computation, June 2004.

Lamont, Gary B., and Traci A. Keller**, "***Optimization of A Quantum Cascade Laser Operating In the Terahertz Frequency Range Using A Multiobjective Evolutionary Algorithm,"* Proceedings of the 17th International Conference on Multiple Criteria Decision Analysis (MCDM '04), August 2004.

*Lamont, Gary B., Yong Kim, Rusty Baldwin, Guna Seetharaman, "*Designing Evolvable Hardware for Military Systems*," Proceedings of the GECCO 2004 Workshop on Military and Security Applications of Evolutionary Computation, June 2004.

*Lamont, Gary B., Mark R. Knarr, Junqi Huang and Mark N. Goltz, "*Multi-Objective Optimization of an In Situ Bioremediation Technology to Treat Perchlorate-Contaminated Groundwater*, Conference on Accelerating Site Closeout, Improving Performance, and Reducing Costs Through Optimization, June 2004.

LOTT, JAMES A., (ENG)

M. C. Harvey, E. M. Ochoa, J. A. Lott, and T. R Nelson Jr., "Toward the Development of Hybrid MEMS Tunable Optical Filters and Lasers", Proceedings of the 2004 International Conference on Compound Semiconductor Manufacturing Technology, Miami Beach, Florida (3-6 May 2004).

A. R. Kovsh, N. N. Ledentsov and J. A. Lott, "Long-Wavelength (1.3 -1.5 μm) Quantum Dot Lasers Based on GaAs", Invited Talk, Proceedings SPIE 5349-06 Photonics West '04, San Jose, CA (26-29 Jan 2004).

J. A. Lott, "1.3 μm InGaAs/GaAs Vertical Cavity Surface Emitting Lasers with Active Regions Containing Multiple Sets of Quantum Dot Sheets", Proceedings SPIE Microelectronics, MEMS, and Nanotechnology, Perth, Australia (10-12 Dec 2003).

J. A. Lott, "Low-Dimensional Semiconductor Structures for Lasers and Light Emitters: Microcavities and Nanowires", Proceedings 2004 Nanomaterials for Defense Symposium, Wailea, Hawaii (22-26 February 2004).

J. A. Lott, "Multiple Stacks of InAs/InGaAs Quantum Dots for GaAs-Based 1.3 μm Vertical Cavity Surface Emitting Lasers", Proceedings IEEE Lasers and Electro-Optics Society Annual Meeting, Tucson, Arizona, (26-30 Oct 2003).

J. A. Lott, "Vertical Cavity Surface Emitting Lasers on GaAs Substrates with Self-Assembled InGaAs Quantum Dot Active Regions", Proceedings of the First US-Korean Workshop on Nanoelectronics, Seoul, Korea (10-11 May 2004).

MALL, SHANKAR (ENY)

Hutson, A., Lee, H. and Mall, S., "Effect of Dissimilar Metals on Fretting Fatigue Behavior of Ti-6Al-4V," Proceedings of 9th National Turbine Engine High Cycle Fatigue Conference, March, 16-19, 2004, Pinehurst, CA.

Lee, H. and Mall, S., "Stress Relaxation and Fretting Fatigue Behavior of Titanium Alloys," Proceedings of 9th National Turbine Engine High Cycle Fatigue Conference, March, 16-19, 2004, Pinehurst, CA.

MAPLE, RAYMOND C., Lt Col (ENY)

Parker G., Maple R., Beran P., "Dynamic Aeroelastic Analysis of Wing/Store Configurations", 29th Dayton-Cincinnati Aerospace Science Symposium (DCASS), Dayton, OH, 9 March 2004.

MARCINIAK, MICHAEL A., (ENP)

Abel, N.J. and M.A. Marciniak, "An investigation of discrepancies in optical cross section measurements and calculations." Presented at the Ohio Optics Consortium Fall 2003 Meeting, held on 12 Nov 2003 in Dayton, OH.

*Abel, N.J., M.A. Marciniak and S.C. Cain, "Effects of aberrations on optical cross section measurements." Presented at the 2004 Meeting of the Military Sensing Symposium Specialty Group on Infrared Countermeasures (G-7) held on 27-29 April 2004 in Monterey, CA.

*Bartell, R.J., G.P. Perram and M.A. Marciniak, "Comparison of Solid State Laser and COIL Weight-Constrained Weapon Systems Effectiveness in Advanced Tactical Laser Scenarios." Presented at the DEPS Modeling & Simulation Conference held on 9-11 March 2004 at Huntsville, Alabama.

*Bartell, R.J., G.P. Perram and M.A. Marciniak, "Overview of the High Energy Laser End-to-End Operational Simulation Parametric Engagement Level Model." Presented at the Directed Energy Professional Society 6th Annual Symposium held on 20-24 October 2003 in Albuquerque, NM.

*Cumblidge, K, P.M. Johnson, M.A. Marciniak, R.L. Hengehold and D.E. Weeks, "Time-Resolved Photoluminescence Spectra of Mid-Infrared Quantum Well Laser Structures." Presented at the Ohio Optics Consortium Fall 2003 Meeting, held on 12 Nov 2003 in Dayton, OH.

*Johnson, P.M., K. Cumblidge, M.A. Marciniak, R.L. Hengehold, D.E. Weeks and G.W. Turner, "Excitation- and structure-dependence of recombination mechanisms in antimony-based MWIR photonic devices." Presented at the American Physical Society March 2004 Meeting (B10 9) held on 22-26 March 2004 in Montreal, Canada.

*Johnson, P.M., M.A. Marciniak, R.L. Hengehold and D.E. Weeks, "Deviation of carrier dynamics in MWIR photonic structures from theoretical predictions." Presented at the 2004 Great Lakes Photonics Symposium held on 7-11 June 2004 in Cleveland, OH.

Morris, T.A., M.A. Marciniak, W.D. Wood, G.C. Wollenweber and K.W. Ayer, "Infrared Measurements of a Turbofan Engine in an Altitude Test Cell." Presented at the Ohio Optics Consortium Fall 2003 Meeting, held on 12 Nov 2003 in Dayton, OH.

*Perram, G.P. and M.A. Marciniak, "High Energy Laser Weapons: Technology Overview." Presented at the SPIE Defense and Security Symposium 2004 held on 12-16 April 2004 in Orlando, FL.

MAYBECK, PETER S., (ENG)

Peter S. Maybeck, "Cost-Function-Based Hypothesis Control Techniques for Multiple Hypothesis Tracking," AFOSR Workshop and Contractors' Meeting on Optimization and Discrete Mathematics, Pasadena, California, 9-10 August 2004.

MCMULLAN, RICHARD J., Maj (ENY)

Earp, B. E., McMullan, R. J., and Gaitonde, D. V., "Magnetogasdynamic Flow Control of a Mach Reflection," 29th Dayton-Cincinnati Aerospace Science Symposium (DCASS), Dayton, OH, 9 March 2004.

Harrington, B. H., McMullan, R. J., and Gaitonde, D. V., "Magnetogasdynamic Flow Acceleration in a Scramjet Nozzle," 29th Dayton-Cincinnati Aerospace Science Symposium (DCASS), Dayton, OH, 9 March 2004.

Lindsey, M. F., McMullan, R. J., and Gaitonde, D. V., "Magnetogasdynamic Energy Extraction from Scramjet Inlet Flow," 29th Dayton-Cincinnati Aerospace Science Symposium (DCASS), Dayton, OH, 9 March 2004.

McNUTT, Lt Col ROSS T., (ENV)

McNutt, Ross T. and Ken Farkus. "Reducing Acquisition Response Time: Conference Workshop", Defense Acquisition 2004 Conference Workshop Institute for Defense and Government Advancement, Crystal City, VA, January 27, 2004.

MILLER, JOHN O., (ENS)

Cook, Mike and Miller, J.O. "Improving the Estimation of Military Worth of the Advanced Tactical Laser Through Simulation Aggregation," Directed Energy Modeling and Simulation Conference. Huntsville, AL Mar 2004.

Long, Scott and Miller, J.O. "Assessing the upper bound of performance for a Gaussian fit to HEL Irradiance Patterns," Directed Energy Modeling and Simulation Conference. Huntsville, AL Mar 2004.

MOORE, JAMES T., (ENS)

Cho, Y. K., J. T. Moore, and R. R. Hill, "Developing a New Algorithm for the Multidimensional Knapsack problem using Lagrange Multipliers and the Core Problem", Proceedings of the 8th Annual International Conference on Industrial Engineering Theory, Applications & Practice, Las Vegas, Nevada- Nov 10-12, 2003.

Cho, Y. K., J. T. Moore, and R. R. Hill, "Insights Gained via an Empirical Analysis of Multidimensional Knapsack Problems", Proceedings of the 2004 Industrial Engineering Research Conference, Houston, TX, May 16-19, 2004.

Harwig, J.M., J.W. Barnes, and J.T. Moore, "An Adaptive Tabu Search Approach for 2-Dimensional Orthogonal Packing Problems", Military Operations Research Society Symposium, Monterey, CA, 22-24 Jun 2004.

OXLEY, MARK E., (ENC)

*Bjerkaas, Kristopher S., Mark E. Oxley, and Kenneth W. Bauer, Jr., "*Consistency Results for the ROC Curves of Fused Classifiers*," SPIE, Signal Processing, Sensor Fusion, and Target Recognition XIII, Orlando, FL, 12-16 April 2004.

*Bjerkaas, Kristopher S., Mark E. Oxley, and Kenneth W. Bauer, Jr., "*Evaluating the Fusion of Automatic Target Classifier Systems*," Great Lakes Photonics Symposium, Cleveland, OH, 10 June 2004.

*Clemans, P., Kenneth W. Bauer, and Mark E. Oxley, "*Maximizing Classifier Accuracy by Varying Fusion Techniques*," 72nd MORS Symposium, Naval Post-Graduate School, Monterey, CA. 22 – 24 June 2004.

*Hill, Justin M., Mark E. Oxley, and Kenneth W. Bauer, Jr., "*Receiver Operating Characteristic Curves and Classifier Fusion*," Artificial Neural Networks in Engineering Conference (ANNIE 2003), St. Louis, MO, 4 November 2003.

*Leap, Nathan J., Kenneth W. Bauer, and Mark E. Oxley, "*Data Correlation, Sample Size, and Feature Selection Effects on Fusion Techniques*," 72nd MORS Symposium, Naval Post-Graduate School, Monterey, CA, 22 – 24 June 2004.

*Leap, Nathan J., Paul Clemans, Kenneth W. Bauer, Jr., and Mark E. Oxley, "*An Investigation of the Effects of Correlation, Autocorrelation, and Sample Size on Classifier Fusion and Optimal Classifier Ensembles*," Automatic Target Recognition Science and Technology Transition Symposium: Understanding Operational Needs and Emerging Challenges, Air Force Institute of Technology, Wright-Patterson Air Force Base, OH, 15-17 June 2004.

Magnus, Amy L. and Mark E. Oxley, "*Techniques for Evaluating Classifiers in Application*," SPIE, Intelligent Computing: Theory and Applications II, Orlando, FL, 12-16 April 2004.

Oxley, Mark A., "*Finite Time Extinction of a Functional Diffusion-Absorption Equation*," Southeastern Atlantic Regional Conference on Differential Equations (SEARDCE), Kennesaw State University, Kennesaw, GA, 17-18 October 2003.

Oxley, Mark A., "*Mathematical Theory of the Integration of Sensing, Processing and Exploitation*," DARPA review, St. Petersburg, FL, 8 October 2003.

*Oxley, Mark A. and Kenneth W. Bauer, Jr., "*AFIT Sensor Fusion Research*," Automatic Target Recognition Science and Technology Transition Symposium: Understanding Operational Needs and Emerging Challenges, Air Force Institute of Technology, Wright-Patterson Air Force Base, OH, 15-17 June 2004.

*Oxley, Mark E. and Kenneth W. Bauer, Jr., "*ATR Fusion Research*," AFOSR review, Pasadena, CA, 9 August 2004.

Oxley, Mark E. and Steven N. Thorsen, "*Fusion or Integration: What's the difference*," 7th International Conference on Information Fusion (FUSION 2004), Stockhlom, Sweden, 29 June 2004.

*Schubert, Christine M., Nathan J. Leap, Mark E. Oxley, and Kenneth W. Bauer, Jr., "*Quantifying the Correlation Effects of Fused Classifiers*," SPIE, Signal Processing, Sensor Fusion, and Target Recognition XIII, Orlando, FL, 12-16 April 2004.

*Schubert, Christine M., Mark E. Oxley, and Kenneth W. Bauer, Jr., "*On the Correlation of Fused ATR Classifiers*," Great Lakes Photonic Symposium, Cleveland, OH, 10 June 2004.

*Storm, Susan A., Kenneth W. Bauer, Jr. and Mark E. Oxley, "*An Investigation of the Effects of Correlation in Classifier Fusion*," Artificial Neural Networks in Engineering Conference (ANNIE 2003), St. Louis, MO, 4 November 2003.

Thorsen, Steven N. and Mark E. Oxley, "*A Category Theory Description of Multisensor Fusion*," SPIE, Multisensor, Multisource Information Fusion: Architectures, Algorithms, and Applications 2004, Orlando, FL, 12-16 April 2004.

Thorsen, Steven N. and Mark E. Oxley, "*Comparing Fusors within a Category of Fusors*," 7th International Conference on Information Fusion (FUSION 2004), Stockhlom, Sweden, 29 June 2004.

Thorsen, Steven N. and Mark E. Oxley, "*Multisensor Fusion Description using Category Theory*," IEEE Aerospace Conference, Big Sky, MT, 8-12 March 2003.

Thorsen, Steven N. and Mark E. Oxley, "*Receiver Operating Characteristics*," Automatic Target Recognition Science and Technology Transition Symposium: Understanding Operational Needs and Emerging Challenges, Air Force Institute of Technology, Wright-Patterson Air Force Base, OH, 15-17 June 2004.

PALAZOTTO, ANTHONY N., (ENY)

Lanning, D., T. Nicholas and A. Palazotto, "Fatigue Failure Predictions at Stress Concentrations Using Critical Distance Methods", The 45th Structural Dynamics and Materials (SDM) Conference AIAA, Palm Springs, CA. April, 19-22, 2004.

Szmerekovsky, A., and A. Palazotto, " Numerical Analysis for a Study of the Mitigation of Hypervelocity Gouging", The 45th Structural Dynamics and Materials (SDM) Conference AIAA, Palm Springs, CA. April, 19-22, 2004.

*Vandawaker, R., A. Palazotto and Maj R. Cobb, "Experimental and Computational Analysis of Modes in Partially Constrained Plates", The 17th American Society of Civil Engineers (ASCE) Engineering Mechanics Conference, University of Delaware, Newark, DE. June 14-16, 2004.

Voyaidjis, G., R. Aba Al-Rub and A. Palazotto, "Determination of the Material Length Scale from Microbending of Thin Film", The 17th American Society of Civil Engineers (ASCE) Engineering Mechanics Conference, University of Delaware, Newark, DE. June 14-16, 2004.

Voyiadjis, G., R. Abu Al-Rub and A. Palazotto, "A Gradient Dependent Constitutive Model to Simulate Impact Damage Problems", The 45th Structural Dynamics and Materials (SDM) Conference AIAA, Palm Springs, CA. April, 19-22, 2004.

PERRAM, GLEN P., (ENP)

*Bartell, Richard J., Glen P. Perram, Michael A. Marciniak, "Comparison of Solid State Laser and COIL Weight-Constrained Weapon Systems Effectiveness in Advanced Tactical Laser Scenarios." Presented at the DEPS Modeling & Simulation Conference, 9-11 March 2004, Huntsville, Alabama.

*Bartell, Richard J., Glen P. Perram, Michael A. Marciniak, "Overview of the High Energy Laser End-to-End Operational Simulation Parametric Engagement Level Model." Presented at the Directed Energy Professional Society 6th Annual Symposium, Albuquerque, NM, October 2003.

Dills, Anthony N., Glen P. Perram, George Zimmer, "Detonation discrimination techniques using a Near-Infrared Focal Plane Array and a Visible CCD Camera." Presented at the Defense and Security Symposium 2004, 12-16 April 2004, Orlando, FL.

Druffner, Carl and Glen P. Perram, "Using High Speed Imagery During the Pulsed Laser Deposition of $YBa_2Cu_3O_{7-x}$ to Identify Key Process Control Parameters." Presented at the Materials Research Symposium Fall Meeting 2003, Boston, MA 1-5 Dec 2003.

Druffner, C. J., G. P. Perram, R.R. Biggers, P.N. Barnes, "Developing Optical Diagnostic Sensors to Determine $YBa_2Cu_3O_{7-x}$ Film Quality during Continuous Deposition." Presented at the 106th Annual Meeting of the American Ceramic Society, Indianapolis, IN 18-21 April 2004.

Gross, Kevin C., Anthony N. Dills and Glen P. Perram, "The Dynamics and Spectroscopy of Fireballs Arising from the Detonation of Conventional and Novel High Explosive Materials." Presented at the 7th Workshop on Infrared Emission Measurements by FTIR, 4-6 February 2004, Quebec City, Canada.

Hawks, Michael R. and Glen P. Perram, "Passive Ranging Using Atmospheric Oxygen Absorption Spectrum." Presented at the Directed Energy Professional Society 6th Annual Symposium, Albuquerque, NM, October 2003.

Kee, Patrick, Carl Druffner, and Glen P. Perram, "High Temperature Superconducting Generators for DEW Systems." Presented at the Directed Energy Professional Society 6th Annual Symposium, Albuquerque, NM, October 2003.

Kee, Patrick and Glen P. Perram, "Partitioning of energy among Translational, Electronic, and Vibrational States during Pulsed Laser Deposition of $YBa_2Cu_3O_{7-x}$". Presented at the Materials Research Symposium Fall Meeting 2003, Boston, MA 1-5 Dec 2003.

Lange, Mathew, Carl Druffner, Patrick Kee, and Glen Perram, "Optical Diagnostics for the Pulsed Laser Deposition of $YBa_2Cu_3O_{7-x}$". Presented at the High Power Laser Ablation Conference 2004, 25-30 April 2004, Taos, New Mexico.

Lange, Mathew and Glen Perram, "Singlet Oxygen Kinetics in a Double Microwave Discharge." Presented at the High Power Laser Ablation Conference 2004, 25-30 April 2004, Taos, New Mexico.

Lange, Matthew, Brian Smith, and Glen Perram, "Kinetics of the Electric Discharge Pumped Oxygen-Iodine Laser." Presented at the Directed Energy Professional Society 6th Annual Symposium, Albuquerque, NM, October 2003.

Perram, Glen, "HEL JTO Modeling and Simulation Technical Area Working Group Program Plan." Presented at the DEPS Modeling & Simulation Conference, 9-11 March 2004, Huntsville, Alabama.

*Perram, Glen P. and Michael A. Marciniak, "High Energy Laser Weapons: Technology Overview." Presented at the Defense and Security Symposium 2004, 12-16 April 2004, Orlando, FL.

RAINES, RICHARD A., (ENG)

"Center for Information Security Education and Research," presented to the Distinguished Review Board, Center for Information Security Education and Research, Wright Patterson AFB, OH, May 2004.

"Center for Information Security Education and Research," presented to the Office of the Secretary of Defense, Force Transformation, Wright Patterson AFB, OH, April 2004.

"Educating and Producing Information Operations/Assurance Professionals," presented to the 2004 Secure IT Conference, San Francisco, CA, April 2004.

"Educating and Producing Information Assurance/Operations Professionals," presented to the National University Security 2 Workshop, Clemson University, August 2004.

"Educating and Producing Information Assurance/Operations Warriors," presented at the United States Marine Corp Information Assurance Conference, Quantico VA, October 2003.

"Educating and Producing Information Operations Warriors," presented at the Air Force CIO Cyber Security Conference (CSC-III), Barksdale AFB, LA, October 2003.

"Educating and Producing Information Operations Warriors," presented to AF/XOI, Pentagon, August 2004.

"Educating and Producing Information Operations Warriors," presented to DoD Cyber Forensics Laboratory, Linthicum, MD, June 2004.

"Educating and Producing Information Operations Warriors," presented to NRO CIO (Dr. Susan Gragg), Chantilly, VA June 2004.

"Educating and Producing Information Operations Warriors," presented to NRO (BG Armor), Wright Patterson AFB, OH, April 2004.

"Educating and Producing Information Operations Warriors," presented to NRO (MG Latiff), Wright Patterson AFB, OH, August 2004.

"Graduate Education and Research in Information Assurance," presented to the Process Portfolio Manager at the Unified Cryptologic Architecture Office (NSA—Mr. Drake), Wright Patterson AFB, OH, May 2004.

RAQUET, JOHN F., (ENG)

Raquet, J., "GPS 101," Aeronautics Systems Center, Short Course, Wright-Patterson AFB, OH, March 2004.

Raquet, J., "GPS Fundamentals," 746th Test Squadron, Short Course, Holloman AFB, NM, November 2003.

Raquet, J., "GPS Jamming Fundamentals," 746th Test Squadron, Short Course, Holloman AFB, NM, November 2003.

Raquet, J., "GPS Receiver Design," 746th Test Squadron, Short Course, Holloman AFB, NM, November 2003.

REEDER, MARK F., (ENY)

*Bjorge, S., Reeder, M. & Subramanian, C., "Flow Around an Object Projected from a Cavity into a Supersonic Freestream," AIAA Paper #2004-1253, 42nd Annual Aerospace Sciences Meeting and Exhibit, Reno, NV, January 2004.

DeLuca, A., Reeder, M., Ol, M., Freeman, J., Bautista, I. & Simonich, M., "Experimental Investigation into the Aerodynamic Properties of a Flexible and Rigid Wing Micro Air Vehicle," AIAA Paper #2004-2396, presented at the AIAA Aerodynamic Measurement Technology and Ground Testing Conference, June 2004.

ROH, WON B., (ENP)

Grime, B. W., N. B. Terry, T. H. Russell, and W. B. Roh, "Efficient Multiple-beam Combining in Stimulated Brillouin Scattering Fiber Beam Combiner." Presented at the 2004 SSDLTR, Albuquerque, NM on 8-10 June 2004.

SEETHARAMAN, GUNA (ENG)

*G. Seetharaman, P. Kladitis, "*Computational aspects of 3-D image displays based on NEMS/MEMS enabled devices and new opportunities,"* International US-Korea Workshop on Nano-Technology. Seoul, Korea, May 10-12, 2004.

SMITHTRO, CHRISTOPHER G., (ENP)

Smithtro, C. G, "Ionospheric Sensitivity to Solar Variability on Timescales of Minutes to Years", invited talk presented at the NASA Living with a Star Workshop, Boulder, CO, March 2004.

Smithtro, C., T. Berkey, D. Thompson, J.J. Sojka, R.W. Schunk, "Observation and Modeling of Ionospheric Dynamics during Major Solar Flares." Presented at the Fall Meeting of the American Geophysical Union, San Francisco, CA, December 2003.

SPENNY, CURTIS H., (ENY)

*Spenny, C. H., and Jacques, D. R., "A Perspective on System Engineering under the New U. S. Department of Defense Acquisition Policy," 14th Annual INCOSE Symposium, Toulouse, France, June 2004.

STAATS, RAYMOND W., Lt Col (ENS)

R. W. Staats, H. D. Sherali, and A. A. Trani, *Airspace Planning and Collaborative Decision-Making Model and Analysis,* October 2003, INFORMS Annual Conference, Atlanta, GA.

TERZUOLI, ANDREW J. JR., (ENG)

A. J. Terzuoli, Jr., "Remote Sensing & Communications Initiative for Homeland, Air, & Missile Defense Surveillance," Proceedings of the 2003 AOC Passive & Covert Radar Conference, Seattle, WA, 21-23 Oct 2003.

A. J. Terzuoli, Jr., "Remote Sensing & Communications Initiative for Long Endurance High Altitude ISR," Proceedings of the Long Endurance High Altitude ISR Conference, Dayton, OH, 27-29 Oct 2003.

TRAGESSER, STEPHEN G., (ENY)

Anderson, J. and Tragesser, S.G., "Optimal Constellation Design for Orbital Munitions Delivery System," AAS/AIAA Spaceflight Mechanics Meeting, Maui, HI, Feb. 2004.

Press, M.J., Tragesser, S.G., and Lovell, T.A., "Geometric Approach to Orbital Formation Mission Design," AAS/AIAA Spaceflight Mechanics Meeting, Maui, HI, Feb. 2004.

Straight, S.D., Tragesser, S.G., Howard, R. A. and Lovell, T.A., "Maneuver Design For Fast Satellite Circumnavigation," AAS/AIAA Spaceflight Mechanics Meeting, Maui, HI, Feb. 2004.

WEEKS, DAVID E., (ENP)

*Cumblidge, K, P.M. Johnson, M.A. Marciniak, R.L. Hengehold and D.E. Weeks, "Time-Resolved Photoluminescence Spectra of Mid-Infrared Quantum Well Laser Structures." Presented at the Ohio Optics Consortium Fall 2003 Meeting, held on 12 Nov 2003 in Dayton, OH.

*Johnson, P.M., K. Cumblidge, M.A. Marciniak, R.L. Hengehold, D.E. Weeks and G.W. Turner, "Excitation- and structure-dependence of recombination mechanisms in antimony-based MWIR photonic devices." Presented at the American Physical Society March 2004 Meeting (B10 9) held on 22-26 March 2004 in Montreal, Canada.

*Johnson, P.M., M.A. Marciniak, R.L. Hengehold and D.E. Weeks, "Deviation of carrier dynamics in MWIR photonic structures from theoretical predictions." Presented at the 2004 Great Lakes Photonics Symposium held on 7-11 June 2004 in Cleveland, OH.

WEIR, JEFFERY D., Maj (ENS)

Schanding, G. and J.D. Weir, "Valuation of Security Benefits from Back-up Power Generation on Military Installations", Invited Session, INFORMS, Atlanta, GA, 19-22 October 2003.

WIESEL, WILLIAM E., (ENY)

Seo, J. S. and Wiesel, W. E., "Low Thrust Control Optimization for Satellite Formations," 14th AAS/AIAA Space Flight Mechanics Conference, Maui, Hawaii, February 2004.

Wiesel, W. E., "Relative Motion Dynamics about a Periodic Orbit," 14th AAS/AIAA Space Flight Mechanics Conference, Maui, Hawaii, February 2004.

WILEY, VICTOR D., Maj (ENS)

Brown, Jeffrey and Victor Wiley, "Modeling and Analysis of CENTCOM's Theater Air Distribution System", Institute for Operations Research and Management Sciences (INFORMS) Conference, Denver, CO, 23-27 Oct 2004.

*Moore, Jim, Todd Combs, J. Wesley Barnes, and Victor Wiley, "A Combined Adaptive Tabu Search and Set Partitioning Approach for the Crew Scheduling Problem", Institute for Operations Research and Management Sciences (INFORMS) Conference, Denver, CO, 23-27 Oct 2004.

YEO, YUNG KEE (ENP)

*Ahoujja, Mo., H. C. Crocket, M. B. Scott, Y. K. Yeo, and R. L. Hengehold. "Photoluminescence characterization of defects introduced in 4H-SiC during high energy proton irradiation and their annealing behavior." Presented at the Spring Meeting of the Materials Research Society held on 12-16 April 2004 in San Francisco.

*Ahoujja, Mo., Said Elhamri, Rex Berney, Y. K. Yeo, and R. L. Hengehold. "Influence of arsenic and silicon doping on the electrical properties of GaN epitaxial layers grown by MOCVD." Presented at the March 2004 Meeting of the American Physical Society, held on 22-26 March 2004 in Montreal, Canada.

Jeon, H. C., K. J. Chung, Yoon Shon, S. J. Lee, T. W. Kang, Y. K. Yeo, Y. H. Cho, and T. W. Kim. "Luminescence of band to band transitions in GaMnN thin films with high ferromagnetic transition temperatures." Presented at the 27th International Conference on the Physics of Semiconductors, held on 26-30 July 2004 in Flagstaff, Arizona.

*Ryu, M. Y., Y. K. Yeo, E. A. Chitwood, R. L. Hengehold, and T. Steiner, "Electrical activation studies of ion-implanted $Al_xGa_{1-x}N$ with Si." Presented at the March 2004 Meeting of the American Physical Society, held on 22-26 March 2004 in Montreal, Canada.

*Ryu, M. Y., Y. K. Yeo, E. A. Chitwood, R. L. Hengehold, and T. Steiner, "Electrical Activation Studies of Si-implanted $Al_xGa_{1-x}N$ as a Function of Ion Dose, Anneal Temperature, and Anneal time." Presented at the 12th International Symposium on the Physics of Semiconductors and Applications (ISPSA-24), held on March 14-16, 2004 in Gyeongju, Korea.

3.9 OTHER SIGNIFICANT PROFESSIONAL ACTIVITIES

ABRAMSON, MARK A., Lt Col (ENC)

Technical paper referee, Optimization and Engineering.

Technical paper referee, SIAM Journal on Optimization.

ANTHENIEN, RALPH A. JR., (ENY)

AIAA Aerospace Sciences Meeting Technical Reviewer

AIAA Propellants & Combustion Technical Committee, Best Paper Reviewer

Executive Co-chair 30th Dayton-Cincinnati Aerospace Sciences Symposium

Technical Program Co-chair 29th & 30th Dayton-Cincinnati Aerospace Sciences Symposium

BALDWIN, RUSTY O., (ENG)

Faculty Advisor for local chapter of Eta Kappa Nu Honor Society

Reviewer for *IEEE Computer*

Reviewer for *International Conference on Computer Communications and Networks*

Reviewer for *The Journal of Systems and Software.*

Reviewer for *Transactions on Mobile Computing*

BLECKMANN, CHARLES A., (ENV)

Reviewer – National Institute of Standards and Technology (NIST) Advanced Technology Program Proposals

Technical paper referee, *Journal of Contaminant Hydrology* and *Water Quality Research Journal of Canada*

BRADY, STEPHAN P., Lt Col (ENS)

Director of Certificate Programs, SOLE—International Society of Logistics

Member, Collaborative Planning, Forecasting and Replenishment (CPFR) Committee

Member, Council of Logistics Management

Member, Educational Advisory Committee, Collaborative Commerce Standards Institute

Member, SOLE (International Society of Logistics) Education Committee

Member, Voluntary Inter-industry Commerce Standards (VICS) Association

Reviewer, Journal of Business Logistics

Reviewer, Journal of Planning Literature

CAIN, STEPHEN C., (ENG)

Technical paper referee, IEEE transactions on biomedical engineering

CANFIELD, ROBERT A., (ENY)

Chair, AIAA Multidisciplinary Design Optimization Technical Committee

Consultant to the Special Operation SPO with the purpose of developing an in-house capability for rotorcraft analysis that will be applied to the Personnel Recovery Vehicle (PRV) program

President, AFIT Faculty Council

DECKRO, RICHARD F., (ENS)

Area Editor, Service Systems, Computers & Industrial Engineering

Editor, Military Operations Research

Editorial Advisory Board of Computer & Operations Research

Judge of Student Projects in Decision Analysis, USMA/DSE Capstone Conference

Member, CNA Weapons Effectiveness Working Group; Chair, Methodology Sub-Group

Member, MORS Publication Committee

Member, Organizing Committee - MORS Workshop, Global War on Terrorism Workshop

Member, Organizing Committee - MORS Workshop, Operations Analysis Support to Network Centric Operations

Technical Advisor, Working Group 8 – Information Operations/Information Warfare,
Military Operations Research Society

Vice President/President Elect, Military Applications Society, INFORMS

GOLTZ, MARK N., (ENV)

City of Beavercreek Environmental Advisory Committee

HALE, TODD B., Maj (ENG)

Sponsored *Electromagnetic Applications for the DoD* session at the 2004 Applied Computational Electromagnetics Society Conference, Syracuse, NY

Tau Beta Pi Faculty EE Advisor

Technical paper referee, IEE Electronic Letters

Technical paper referee, IEE Proceedings: Radar, Sonar & Navigation

Technical paper referee, IEEE Transactions on Aerospace & Electronic Systems (AES)

Waveform Diversity and Design Conference Committee, Corresponding Member

HAVRILLA, MICHAEL J., (ENG)

Reviewer for IEEE Transactions on Antennas and Propagation

Reviewer for IEEE Transactions on Education

Reviewer for Journal of Electromagnetic Waves and Applications

Session Co-Chair, "EM Applications in the DoD", ACES Conference, April 2004

Session Co-Chair, "Integral Equation Techniques", APS/URSI Conference, June 2004

Session Co-Organizer, "EM Applications in the DoD", ACES Conference, April 2004

HENGEHOLD, ROBERT L., (ENP)

Hengehold, Robert L., Member of the Executive Committee and Honors and Awards Chairman of the Ohio Section of the American Physical Society

HICKS, MICHAEL J., (ENV)

Board of Directors: Center for Economic Options, Inc.

Co-Editor: *Regional Economic Review*. 1999-2004

Current Referee: *Mid-American Journal of Business, Managerial and Decision Economics, Review of Regional Studies, Journal of Economics and Finance Education, Energy Journal, Education Economics*

Editorial board: *Applied Research in Economic Development*. 2002-present

Editorial board: *The Mid-American Journal of Business*. 2000-present

Rahall Appalachian Transportation Institute Advisory Council for Economic Development, June 2002-present

West Virginia Special Reclamation Fund Advisory Council (Senate confirmation, March 2003)

JACQUES, DAVID R., (ENY)

AIAA Guidance, Navigation and Control Technical Committee

Journal and Conference Paper Reviewer for AIAA, IEEE, INCOSE

INCOSE Corporate Board

Technical Program Co-Chair, Conference on Systems Engineering Research, Hoboken, NJ, Mar 05.

KHAROUFEH, JEFFEREY P., (ENS)

Named Associate Editor, IEEE Transactions on Reliability

KIM, YONG CHANG., (ENG)

Program Committee Member, IEEE International Symposium on Circuits and Systems

Review Committee Member, IEEE International Symposium on Circuits and Systems

Reviewer for IEEE Transactions on Computer-Aided Design

Reviewer for IEEE Transactions on VLSI Systems

KLADITIS, PAUL E., Capt (ENG)

AFIT IEEE Student Branch Advisor, 2002-Present

Chair of the Dayton Section IEEE Executive Committee, 2004-Present

Reviewer for DARPA BAA, Micro-Electrical Mechanical Systems Exchange, 2004

Reviewer Journal of Micromechanics and Microengineering

Reviewer Sensors and Actuators

Secretary of the Dayton Section IEEE Executive Committee, 2001-2002

Treasurer of the Dayton Section IEEE Executive Committee, 2002-2003

USAF representative to Korea for research collaboration, AOARD-AFOSR, 2004-present

USAF representative to India for research collaboration, AOARD-AFOSR, 2003-present

USAF representative to Japan for research collaboration, AOARD-AFOSR, 2003-present

KUNZ, DONALD L., (ENY)

Proposal reviewer, U.S. Army Research Office

Technical paper referee, *The Aeronautical Journal*

Technical paper referee, *AIAA Journal*

Technical paper referee, *IEEE Transactions on Control Systems Technology*

Technical paper referee, *Journal of Aircraft*

Technical paper referee, *Journal of the American Helicopter Society*

LAMONT, GARY B., (ENG)

AFIT Tau Beta Pi Executive Committee '92 to present

Chair of ACM Special Interest Group on Applications: July1999 to December 2003

Program Committee Member: EMO'05, GECCO'04

Technical Paper Reviewer: Genetic and Evolutionary Computation Conference (GECCO) 2003 and 2004

Technical Paper Reviewer: Journal of Evolutionary Computation, MIT Press 2001 to present

Technical Paper Reviewer: IEEE Congress on Evolutionary Computation (CEC) 2003 and 2004

Technical Paper Reviewer: IEEE Transactions on Evolutionary Computation, 2000 to present

MAPLE, RAYMOND C., Lt Col (ENY)

Session Chair, Dayton-Cincinnati Aerospace Sciences Symposium

MARTIN, RICHARD K., (ENG)

Technical paper referee, IEEE Communications Letters

Technical paper referee, IEEE Transactions on Signal Processing

Technical paper referee, IEEE Wireless Communications and Networking Conference

MAYBECK, PETER S., (ENG)

Dayton Section IEEE Student Activities Chair + member of Section's Executive Committee (consistently since '75)

MCMULLAN, RICHARD J., Maj (ENY)

Career Enhancement Chair, Dayton-Cincinnati AIAA Section

Session Chair, Dayton-Cincinnati Aerospace Sciences Symposium

Technical paper referee, AIAA Journal

MELOUK, SHARIF H., (ENS)

INFORMS Teaching Colloquium Participant

Professional Member, INFORMS Manufacturing and Service Operations Management Society (MSOM)

Professional Member, Institute of Industrial Engineers (IIE)

Professional Member, Institute for Operations Research and the Management Sciences (INFORMS)

Professional Member, Military Operations Research Society (MORS)

Reviewer, IEEE Transactions on Reliability

Reviewer, International Journal of Production Economics

MILLER, JOHN O., (ENS)

Reviewer for Military Operations Research Journal

Wright Scholar Mentor, Summer 2004

MILLS, ROBERT F., (ENG)

Programs Vice President, Dayton-Wright Chapter, Armed Forces Communications and Electronics Association

MOORE, JAMES T., (ENS)

Associate Editor, Military Operations Research

MULLINS, BARRY E., (ENG)

Technical Paper Reviewer: American Society for Engineering Education Annual Conference

Reviewer for Prentice Hall microcontroller academic texts

OXLEY, MARK E., (ENC)

Co-Chair, Automatic Target Recognition and Processing Technology Conference at Great Lakes Photonics Symposium (GLPS 2004), Cleveland, Ohio, 10-11 June 2004.

Host, Automatic Target Recognition Science and Technology Symposium, Air Force Institute of Technology, Wright-Patterson Air Force Base, OH, 15-17 June 2004.

Member, SPIE Conference Program Committee for Intelligent Computing: Theory and Applications II, Orlando, FL, April 2004.

Member, Steering Committee for Southeastern Atlantic Regional Conference on Differential Equations (SEARCDE).

Reviewer, Graduate Program in Applied Mathematics for the Department of Mathematics, University of Dayton, Dayton, Ohio.

PACHTER, MEIR (ENG)

Associate Editor of the Journal of Optimization Theory and Applications

Technical papers referee, AIAA

Technical papers referee, IEEE

PERRAM, GLEN P., (ENP)

Perram, Glen P, Member, High Energy Laser Joint Technology Office, Top Technical Area Working Group, May 2002 - present

PETERSON, GILBERT L., (ENG)

Invited Editor – The Handbook for Information Security

Reviewer for the Florida Artificial Intelligence Research Society

Reviewer for Graduate Research Day at the University of Tennessee

RAINES, RICHARD A., (ENG)

Session Chair, 2003 11th IEEE International Conference on Networks, Sydney Australia, October 2003

Technical Paper Referee, IEEE Communications Letters

RAQUET, JOHN F., (ENG)

Board of Advisors and Technical Paper Referee, GPS Solutions

Eastern Region Vice President, Institute of Navigation

Program Chair, 2004 Annual Meeting of the Institute of Navigation, Dayton, OH, June 2004.

Session Chair, ION GNSS-2004, Long Beach, CA, September 2004.

Technical Paper Referee, IEEE Transactions on Aerospace and Electronics Systems

REEDER, MARK F., (ENY)

Journal referee, ASME Journal of Fluids Engineering

SEETHARAMAN, GUNA (ENG)

DARPA Grand Challenge: Autonomous Ground Vehicles Navigating through the Mojave Desert. Charter member of Team CajubBot. Dynamic Tactical Routing Algorithms

Program Committee and Reviewer for International Conference on Pattern Recognition, The track on Computer Architecture, Oxford, August 2004.

Steering Committee and Program Committee of IEEE Seventh International Workshop on Computer Architecture for Machine Perception. CAMP2005, Sicily, Italy, July 2005.

STAATS, RAYMOND W., Lt Col (ENS)

Technical Paper Referee, Journal of Scheduling

Technical Paper Referee, Transportation Science

SWARTZ, STEPHEN M. Lt Col (ENS)

Executive Education Logistics Seminar, DFW Metroplex Technology Consortium

TEMPLE, MICHAEL A., (ENG)

Technical paper referee, IEE Proceedings, Part F: Radar, Sonar and Navigation

TERZUOLI, ANDREW J., JR., (ENG)

Local Chapter Chair for Joint IEEE Societies APS, MTT, GRS

Technical Paper Referee, *IEEE Trans. On Ant & Prop*

WHITE, EDWARD D., III, (ENC)

Associate Editor, Journal of Cost Analysis and Management.

Referee, Journal of Cost Analysis and Management.

Referee, Military Operations Research.

Reviewer of Textbooks for Thomson Learning.

3.10 SPECIAL RESEARCH AWARDS OR RECOGNITION

3.10.1 FACULTY

CANFIELD, ROBERT A., (ENY)

Associate Fellow, American Institute of Aeronautics and Astronautics, Jan 2000

KLADITIS, PAUL E., Capt (ENG)

Winner of the ASC Innovative Development through Employee Awareness (IDEA) Program, "The Effects of Ionizing Radiation on MEMS Actuators," 17 Feb 04.

KUNZ, DONALD L., (ENY)

AIAA Leadership Recognition Award for service as Technical Program Chair of the 2004 Structures, Structural Dynamics and Materials Conference

MAYBECK, PETER S., (ENG)

ASC Innovative Development through Employee Awareness (IDEA 2004-742) for Electrocardiogram Segmentation Using a Multiple Model Algorithm

MCMULLAN, RICHARD J., Maj (ENY)

2nd Place: 2003-2004 AIAA National Career Enhancement Award in Very Large Section Category

OXLEY, MARK E., (ENC)

Gage H. Crocker Outstanding Professor Award 2003, awarded May 2004.

STAATS, RAYMOND W., Lt Col (ENS)

Pritsker Doctoral Dissertation Award, 2d place, Institute of Industrial Engineers, 2004

TERZUOLI, ANDREW J., JR., (ENG)

IEEE Certificate of Appreciation

3.10.2 STUDENTS

Braziel, Carlos, Capt, Air Force Civil Engineer Support Agency (AFCESA) George K. Dimitroff Award (2004).

Butler,"Reb", Maj, Military Operations Research Society (MORS) Award (Sep 2004).

Clabaugh, Donald J., CMSgt, Armed Forces Communications-Electronics Association (AFCEA) Research Excellence Award in Command, Control, Communications and Intelligence (2004).

Cobb, William E., Capt, Association of Old Crows (AOC) Academic Research Excellence Award (2004).

Dorey, Sean P., Capt, AFIT Graduate School of Engineering and Management Dean's Award Winner from the Department of Computer and Electrical Engineering (2004).

Faulstich, Mark J., Capt, American Institute of Aeronautics and Astronautics (AIAA) Graduate Student Award for Research Excellence (2004) and the AFIT Graduate School of Engineering and Management Dean's Award Winner from the Department of Aeronautics and Astronautics (2004).

Finkelstein, Daniel E., AFIT Graduate School of Engineering and Management Capt, Dean's Award Winner from the Department of Operational Sciences (2004).

Gutierrez, Jose, Capt, Institution of Navigation (ION) Navigation Research Excellence Award (2004).

Leap, Nathan J., Capt, Military Operations Research Society (MORS) Award (Mar 2004).

Lopez, Juan, MSgt (Marine Corps), Armed Forces Communications-Electronics Association (AFCEA) Information Resource Management Award (2004).

Martin, Kyle, Capt, Society of Cost Estimating and Analysis (SCEA) Award (2004).

Morris, Thomas A., Capt, AFIT Graduate School of Engineering and Management Dean's Award Winner from the Department of Engineering Physics (2004).

Novak, Ryan, Capt, National Contract Management Association (NCMA) Thesis Award (2004).

Petit, Carey, Capt, Institute of Supply Management Thesis Award (2004).

Pike, William, Capt, Institute of Supply Management Thesis Award (2004).

Welling, Matthew D., Capt, AFIT Commandant's Award Winner (2004) and AFIT Graduate School of Engineering and Management Dean's Award Winner from the Department of Systems and Engineering Management (2004).

APPENDICES

APPENDIX A FACULTY CREDENTIALS

ABRAMSON, MARK A., Lt Col, Deputy Head, Assistant Professor of Mathematics, Department of Mathematics and Statistics, AFIT Appointment Date: 2002 (AFIT/ENC); BS, Brigham Young University, 1987; MS (2), Air Force Institute of Technology, 1994; MA, Rice University, 2001; PhD, Rice University, 2002. Lt Col Abramson's research interests include optimization and numerical analysis, particularly as applied to engineering design problems. His recent research has focused primarily on direct search algorithms for solving nonlinear and mixed variable programming problems. Lt Col Abramson's previous military assignments have been in test and evaluation, logistics policy analysis, and computer simulation and analysis of war plans. Tel. 937-255-3636 x4524 (DSN 785-3636 x4524), email: Mark.Abramson@afit.edu.

ALLEY, THOMAS G., Lt Col, Assistant Professor of Physics, Department of Engineering Physics, AFIT Appointment Date: 2003 (AFIT/ENP); BA, University of Utah, 1984; MS, Air Force Institute of Technology, 1987; PhD, University of New Mexico, 1998. Lt Col Alley's main research interests include nonlinear optics and laser devices. Specific application areas include thermal electric field poling in glass, fiber lasers, and nonlinear optical effects in glass and fibers. He previously taught at the US and Argentine Air Force Academies and has conducted and managed research in nonlinear optics and solid state lasers at the Air Force Research Laboratory. He has published 18 technical papers and reports. He is a member of the Optical Society of America. Tel. 937-255-3636 x4649 (DSN 785-3636 x4649), email: Thomas.Alley@afit.edu.

AMEND, JOSEPH H., III, Col, Department Head, Department of Systems and Engineering Management, AFIT Appointment Date: 1997 (AFIT/ENV) and Associate Professor of Civil Engineering, BS in Civil Engineering, AFIT Appointment Date: 1971; MS in Civil Engineering, 1972; PhD in Civil Engineering, 1975 from Virginia Polytechnic Institute and State University; and Air Command and Staff College, Montgomery, AL, 1988. Col Amend's research interests include engineering and facility management, groundwater flow, subsurface remediation and environmental management. Tel. 937-255-3636 x4591 (DSN 785-3636 x4591) email: Joseph.Amend@afit.edu.

ANDERSON, BRADLEY E., Maj, Assistant Professor of Logistics Management, Department of Operational Sciences, AFIT Appointment Date: 2002 (AFIT/ENS); Center for Operational Analysis (COA), BS, Meteorology, University of Wisconsin - Madison, 1990; MS, Logistics Management, Air Force Institute of Technology, 1996; MB, Business, Indiana University – Bloomington, 2002; PhD, Business, Indiana University - Bloomington, 2002. Maj Anderson's research interests include reparable inventory management, mixed integer programming, network models, supply chain management, and evolutionary algorithms. Tel. 937-255-3636 x4646 (DSN 785-3636 x4646), email: Bradley.Anderson@afit.edu.

ANTHENIEN, RALPH A. JR., Assistant Professor of Aerospace Engineering, Department of Aeronautics and Astronautics, AFIT Appointment Date: 2001 (AFIT/ENY); BS, University of California (UC) at Berkeley, 1993; MS UC Berkeley, 1996; PhD, UC Berkeley, 1998. Dr. Anthenien's research interests include development of combustors for gas turbine engines, smoldering combustion, combustion in microgravity, micro-scale combustion and combustion diagnostics, as well as thermal management and novel propulsion technologies. He is a licensed professional engineer of the state of Ohio. He is a member of the AIAA, ASME, SAE and the Combustion Institute. Tel. 937-255-3636 x4643 (DSN 785-3636 x4643), email: Ralph.Anthenien@afit.edu.

AROSTEGUI, MARVIN A., Lt Col, Assistant Professor of Logistics Management, Department of Operational Sciences, AFIT Appointment Date: 2003 (AFIT/ENS); BA, Applied Mathematics, University of California at Berkeley, 1987; MS, Logistics Management, Air Force Institute of Technology, 1992; PhD, Operations Management, University of Houston, 1997. Lt Col Arostegui's research interests include inventory theory, forecasting management, and supply chain management. Tel. 937-255-3636 x4510 (DSN 785-3636 x4510), email: Marvin.Arostegui@afit.edu.

BAILEY, WILLIAM F., Associate Professor of Physics, Department of Engineering Physics, AFIT Appointment Date: 1978 (AFIT/ENP); BS, United States Military Academy, 1964; MS, The Ohio State University, 1966; PhD, Air Force Institute of Technology, 1978. Professor Bailey's research interests center on weakly ionized gases and reactive kinetics, with special applications to semiconductor processing in gas discharges, shock characterization in ionized flows and solutions of the inhomogeneous electron kinetic equation. Dr. Bailey has published over 20 papers in refereed conference proceedings and international journals and chaired over 25 theses and dissertations. He is a member of Tau Beta Pi, Sigma Pi Sigma, and Sigma Xi. Tel. 937-255-3636 x4501 (DSN 785-3636 x4501), email: William.Bailey@afit.edu.

BAKER, WILLIAM P., Associate Professor of Mathematics, Department of Mathematics and Statistics, AFIT Appointment Date: 1994 (AFIT/ENC); BA, University of California at Irvine, 1969; MA, University of California at Irvine, 1970; PhD, Northwestern University, 1987. Dr. Baker's research interests include asymptotic and perturbation methods, wave propagation and scattering theory, applied mathematics, functional analysis, low observables, and numerical analysis. Dr. Baker's current research is in acoustical and electromagnetic scattering, and vibrational dynamics of composite sandwich material. His recent papers are on fractional derivative models of viscoelastic materials. Dr. Baker is a Master Navigator with prior military assignments in flight test, satellite communications, cruise missile and radar analysis. Tel. 937-255-3636 x4517 (DSN 785-3636 x4517), email: William.Baker@afit.edu.

BALDWIN, RUSTY O., Associate Professor of Computer Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 1999 (AFIT/ENG), BSEE, New Mexico State University, 1987; MS, Computer Engineering, Air Force Institute of Technology, 1992; PhD, Virginia Polytechnic Institute and State University, 1999. His research interests include computer communication networks, information warfare, performance modeling, and analysis and simulation of real-time communication systems. Tel. 937-255-6565 x 4445 (DSN 785-6565 x4445), email: Rusty.Baldwin@afit.edu.

BARR, DAVID R., Associate Professor Emeritus of Statistics, Department of Mathematics and Statistics, (AFIT/ENC); BA, Miami University, 1954; MA, Miami University, 1954; MS, Miami University, 1957; PhD, State University of Iowa, 1964. Dr. Barr's research interests include probability, statistics and stochastic processes, as well as the design of experiments. Tel. 937-255-3636 x4529 (DSN 785-3636 x4529), email: David.Barr@afit.edu.

BARTCZAK, SUMMER E., Lt Col, Assistant Professor of Information Resource Management, AFIT Appointment Date: 2002 (AFIT/ENV); BS, United States Air Force Academy, CO, 1986; MS of Information of Resource Management, Air Force Institute of Technology, Dayton, OH, 1990; Masters of Military Operational Art, Air Command and Staff College, Air University, Montgomery, AL, 1998; PhD in Management Information Systems, Auburn University, Auburn, AL, 2002. Lt Col Bartczak's research interests include information technology (IT)/knowledge management (KM) implementation and IT/KM strategy, innovation, and change. Tel. 937-255-3636 x4826 (DSN 785-3636 x4826), email: Summer.Bartczak@afit.edu.

BAUER, KENNETH W., JR., Professor of Operations Research, Dept of Operational Sciences, AFIT Appointment Date: 1996 (AFIT/ENS); Center for Operational Analysis (COA), BS, Miami University (Ohio), 1976; MEA, University of Utah, 1980; MS, Air Force Institute of Technology, 1981; PhD, Purdue University, 1987. Dr. Bauer's research interests include the statistical aspects of simulation, design of experiments, neural networks, and multivariate statistics. Tel. 937-255-6565 x4367 (DSN 785-6565 x4367), email: Kenneth.Bauer@afit.edu.

BAUMERT, STEPHEN E., Assistant Professor of Operations Research, Department of Operational Sciences, AFIT Appointment Date: 2004 (AFIT/ENS); BS, Mathematics, Rhodes College, 1998; MS, Industrial and Operations Engineering, University of Michigan, 2004; PhD, Industrial and Operations Engineering, University of Michigan, 2004. Dr. Baumert's research interests include the practice and the theory of stochastic global optimization algorithms and stochastic processes. Tel. 937-255-3636 x4539 (DSN 785-3636 x4539), email: Stephen.Baumert@afit.edu.

BELL, JOHN E., Maj, Assistant Professor of Logistics Management, Department of Operational Sciences, AFIT Appointment Date: 2003 (AFIT/ENS); Center for Operational Analysis (COA), BS, History, United States Air Force Academy, 1990; MS, Logistics Management, Air Force Institute of Technology, 1998; PhD, Management, Auburn University, 2003. Maj Bell's research interests include optimization of logistic systems, location analysis, hazardous materials transportation and heuristic search methods. Tel. 937-255-3636 x4511 (DSN 785-3636 x4511), email: John.Bell@afit.edu.

BIRJANDI ROSA H., Assistant Professor of Logistics Management, Department of Operational Sciences, AFIT Appointment Date: 2003 (AFIT/ENS); BS, Mathematics; MS, Applied Mathematics; PhD, Management Science / Operations Management, University of Maryland at College Park, 1998. Dr. Birjandi is interested in the area of Inventory Planning, production, distribution, and Mathematical programming models. Tel. 937-255-3636 x4512 (DSN 785-3636 x4512), email: Rosa.Birjandi@afit.edu**.**

BLECKMANN, CHARLES A., Associate Professor of Engineering and Environmental Management, Department of Systems and Engineering Management, AFIT Appointment Date: 1993 (AFIT/ENV); BA, Secondary Education (Biology), University of Evansville, 1967; MS, Biology, Incarnate Word College, 1971; PhD, Botany, University of Arizona, 1977. Dr. Bleckmann's research interests include water and wastewater analyses and treatment, hazardous waste identification and management, land treatment of wastes, groundwater monitoring and remediation, biodegradation of wastes, fuels microbiology, and bioassays. Tel. 937-255-3636 x4721 (DSN 785-3636 x4721), email: Charles.Bleckmann@afit.edu.

BLUE, PAUL A., Maj, Instructor of Aerospace Engineering, Department of Aeronautics and Astronautics, AFIT Appointment Date: 2004 (AFIT/ENY); BS, University of Nebraska - Lincoln, 1993; MS, University of Minnesota - Twin Cities, 1995; PhD (ABD), University of Minnesota - Twin Cities, 2004. Maj Blue's research interests include the guidance and control of aerospace vehicles and the flight-testing of advanced control concepts. His current research is focused on autonomous collision avoidance and path planning for UAVs and robust control of high-performance aircraft. Maj Blue's prior assignments include Flight Control Research Engineer at the Air Vehicles Directorate of the Air Force Research Laboratory and Exchange Engineer at the German Aerospace Center. He has several publications, including a textbook on robust control with Prof. Juergen Ackermann et al. Tel. 937-255-3636 x4714 (DSN 785-3636 x4714), email: Paul.Blue@afit.edu.

BRADY, STEPHAN P., Lt Col, Assistant Professor of Logistics Management, Department of Operational Sciences, AFIT Appointment Date: 1999 (AFIT/ENS); BA, Political Science, Western Maryland College, 1985; MPA, Public Administration, University of New Hampshire, 1994; MS, Logistics Management, Air Force Institute of Technology, 1992; PhD, Business Administration, Pennsylvania State University, 1999. Lt Col Brady's research interests include transportation, logistics and collaborative supply chain management and diffusion and adoption of innovation, consumable and reparable inventory management, simulation, and modeling. Tel. 937- 255-3636 x4701 (DSN 785-3636 x4701), email: Stephan.Brady@afit.edu.

BRIDGMAN, CHARLES J., Professor Emeritus of Nuclear Engineering, Department of Engineering Physics, (AFIT/ENP); BS, United States Naval Academy, 1952; MS, North Carolina State University, 1958; PhD, North Carolina State University, 1963. Dr. Bridgman's interests center around nuclear weapon effects and military nuclear power applications. He has been associated with nuclear weapon defense since 1952. He was a member of the first military team to be operational on the H-bomb. His current research interest is nuclear weapon fallout modeling. He is the author of a text book "Introduction to the Physics of Nuclear Weapons Effects" and of numerous technical articles in a wide variety of journals. In his 38 years on the AFIT faculty, he has chaired over 120 MS theses and PhD dissertations. He has received several awards including Tau Beta Pi Teacher of the Year and the Gage H. Crocker Outstanding Professor Award. Dr. Bridgman is a Fellow of the American Nuclear Society. Tel. 937-255-3636 x4679 (DSN 785-3636 x4679), email: Charles.Bridgman@afit.edu.

BRIGANTIC, ROBERT T., Lt Col, Assistant Professor of Operations Research, Department of Operational Sciences, AFIT Appointment Date: 2003 (AFIT/ENS); Center for Operational Analysis (COA), BS, Chemical Engineering, Oregon State University, 1983; MS, Space Operations, Air Force Institute of Technology, 1987; PhD, Operations Research, Air Force Institute of Technology, 1997. Lt Col Brigantic's research interests include Probability and Statistics, Modeling and Simulation, Artificial Intelligence and Pattern Recognition, Adaptive Optics, Digital Image Processing, Space Operations and Rocket Propulsion. Tel. 937-255-3636 x4624 (DSN 785-3636 x4624), email: Robert.Brigantic@afit.edu.

BULUTOGLU, DURSUN A., Assistant Professor of Statistics, Department of Mathematics and Statistics, AFIT Appointment Date: 2004, (AFIT/ENC); BS, University of Maryland at College Park, 1996; PhD, University of California, Berkeley, 2001. Dr.Bulutoglu's research interests include design of experiments and combinatorial problems in statistics. His recent papers are on optimization algorithms for finding E(s^2) optimal supersaturated designs. Tel. 937-255-3636 x4523 (DSN 785-3636 x4704), email: Dursun.Bulutoglu@afit.edu.

BUNCK, BENJAMIN F., Visiting Assistant Professor of Mathematics, Contractor, Department of Mathematics and Statistics, (AFIT/ENC); BS, University of Kansas, 1999; MS, Wichita State University 2001; PhD, Wichita State University, 2004. Dr. Bunck's current research interests include numerical analysis, numerical partial differential equations, and spectral methods in partial differential equations. Tel. 937-255-6565 x4402 (DSN 785-6565 x4402), email: Benjamin.Bunck@afit.edu.

BURGGRAF, LARRY W., Associate Professor of Engineering Physics, Department of Engineering Physics, AFIT Appointment Date: 1991 (AFIT/ENP); BA, Chemistry, Olivet Nazarene University, 1968; MS, Chemistry, Ohio State University, 1971; MA, Applied Mathematics, University of West Florida, 1977; PhD, Chemistry, University of Denver, 1981; Postdoctoral Associate, Computational Chemistry, Iowa State University, 1994. Dr. Burggraf conducts experimental and theoretical research in surface chemistry, surface spectroscopy and nuclear radiation spectroscopy to solve DoD and DOE problems in various areas including semiconductor chemistry; chemical, biochemical, and nuclear sensors; radiation imaging; and nuclear fuels chemistry. Dr. Burggraf's research currently applies physical chemistry tools including photoluminescence, secondary ion mass spectrometry, photoluminescence spectroscopy, infrared spectroscopy, Raman spectroscopy, atomic force microscopy, spectro-electrochemistry, and nuclear spectrometry to problems in chemical and biological detection, MEMS photothermal IR detectors, toxic interactions in cell membranes, photovoltaic cells, nuclear fuels detection, SiC processing chemistry, sol-gel processing, uranium oxide surface chemistry, and imaging hidden surfaces by gamma Compton tomography. Theoretical research to model surfaces and clusters centers on applying hybrid molecular mechanics / quantum mechanics models to predict structures, energies, dynamics and spectroscopy on surfaces of silicon, silicon carbide and uranium oxides. Dr. Burggraf has more than 30 publications. Tel. 937-255-3636 x4507 (DSN 785-3636 x4507), email: Larry.Burrgraf@afit.edu.

CAIN, STEPHEN C., Assistant Professor of Electrical Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2003 (AFIT/ENG), BSEE, University of Notre Dame, 1992; MSEE, Michigan Technological University, 1994; PhD, University of Dayton, 2001. His research interests include electro-optics, remote sensing, and signal processing. Tel. 937-255-3636 x4625 (DSN 785-3636 x4625), email: Stephen.Cain@afit.edu.

CALICO, ROBERT A., Jr., Professor of Aerospace Engineering and Dean of Graduate School of Engineering and Management, AFIT Appointment Date: 1972 (AFIT/EN), BS, University of Cincinnati, 1966; MS, University of Cincinnati, 1968; PhD, University of Cincinnati, 1971. Dr. Calico's research interests include aircraft stability and control, analytical dynamics, stability of non-linear systems, satellite dynamics, control theory, and vibration analysis. Tel. 937-255-3025 (DSN 785-3025), email: Robert.Calico@afit.edu.

CANFIELD, ROBERT A., Lt Col, Associate Professor in Aeronautics and Astronautics, Department of Aeronautics and Astronautics, 2000 (AFIT/ENY); BSE, Mechanical Engineering, Duke University, 1983; MS, Aeronautics and Astronautics, Stanford University, 1984; PhD, Engineering Mechanics, Virginia Polytechnic Institute and State University, 1992. Lt Col Canfield's research interests include structural optimization, multidisciplinary analysis and design methods, structural dynamics and controls, and aeroelasticity. He has published twenty-one journal articles and thirty-seven papers in conference proceedings on these topics. Lt Col Canfield was recently the program manager for computational mathematics in the Mathematics and Space Sciences Directorate at the Air Force Office of Scientific Research (AFOSR). He is an Associate Fellow of the American Institute of Aeronautics and Astronautics. Tel. 937-255-3636 x4723, (DSN 785-3636 x4723), email: Robert.Canfield@afit.edu.

CHILTON, LAWERENCE K., Associate Professor of Mathematics, Department of Mathematics and Statistics, AFIT Appointment Date: 2003, (AFIT/ENC); BA, University of California at San Diego, 1981; MS, University of Illinois at Urbana-Champaign, 1988; PhD, University of Maryland, Baltimore County, 1997. Dr. Chilton's research interests include finite element analysis, numerical analysis and scientific computing. His recent papers are on mixed finite element methods and mortar finite elements. Tel. 937-255-3636 x4523 (DSN 785-3636 x4523), email: Lawrence.Chilton@afit.edu.

CHRISSIS, JAMES W., Associate Professor of Operations Research, Department of Operational Sciences, AFIT Appointment Date: 1987 (AFIT/ENS); BS, University of Pittsburgh, 1975; MS, Virginia Polytechnic Institute and State University, 1977; PhD, Virginia Polytechnic Institute and State University, 1980. Dr. Chrissis' research interests include engineering optimization, mathematical programming, simulation, stochastic systems, and industrial engineering. Dr. Chrissis has been a member of the faculties of Virginia Tech and the University of South Florida. He is a member of the Institute for Operations Research and Management Sciences (INFORMS), The Society for Industrial and Applied Mathematics (SIAM), the Military Operations Research Society (MORS), The American Institute for Aeronautics and Astronautics (AIAA), and Sigma Xi. Tel. 937-255-3636 x4606 (DSN 785-3636 x4606), email: James.Chrissis@afit.edu.

COBB, RICHARD G., Assistant Professor of Aerospace Engineering, Department of Aeronautics and Astronautics, AFIT Appointment Date: 2001 (AFIT/ENY); BS, the Pennsylvania State University, 1988; MS, Air Force Institute of Technology, 1992; PhD, Air Force Institute of Technology, 1996. Research interests include dynamics and control of flexible space structures, vibration isolation and suppression, system identification techniques and applied applications of optimal control theory. Prior to teaching at AFIT, Dr. Cobb was responsible for the establishment of an Air Force wide Reliability Centered Maintenance program to enhance jet engine reliability. In recognition of his accomplishments, Dr. Cobb was selected as the 2001 Senior Military Engineer of the Year for the Aeronautical Systems Center. Prior to his assignment at WPAFB in September 1999, Dr. Cobb served as program manager for the Air Force Research Laboratory's TechSat 21 program, a revolutionary satellite technology program investigating the feasibility of using distributed micro-satellite constellations to satisfy Air Force global sensing requirements. While at Kirtland AFB NM, Dr. Cobb also served as the technical advisor for the Space Vehicles Technology Branch, and Chief of the Dynamic Systems Group. Tel. 937-255-3636 x4559 (DSN 785-3636 x4559), email: Richard.Cobb@afit.edu.

COLOMBI, JOHN M., Lt Col, Assistant Professor of Electrical Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2003 (AFIT/ENG), BSEE, University of Lowell, 1986; MSEE, Air Force Institute of Technology, 1992; PhD, Air Force Institute of Technology, 1996. His current research interest is systems architecturing of C2ISR Systems. Tel. 937-255-3355 x3347 (DSN 785-3355 x3347), email: John.Colombi@afit.edu.

COOMBER, PATRICIA, K., Col, Assistant Professor of Biology, Department of Operational Sciences, AFIT Appointment Date: 2004 (AFIT/ENS), BS, Zoology, Louisiana State University, 1978; MA, Management, Webster University, 1985; MS, Biology, University of Colorado at Colorado Springs, 1989; PhD, Neuroendocrinology, University of Texas, 1995. Col Coomber's professional and research interests include biological counterproliferation, homeland security, bioterrorism, and biotechnology issues. Tel. 937-255-6565 x4486 (DSN 785-6565 x4486), email: Patricia.Coomber@afit.edu.

CRITTENDEN, PAUL E., Visiting Assistant Professor of Mathematics, Contractor, Department of Mathematics and Statistics, (AFIT/ENC); BS, Mechanical Engineering, University of Nebraska at Lincoln, 1992; MS, Engineering Mechanics, University of Nebraska at Lincoln, 1995; PhD, Mathematics, University of Nebraska at Lincoln. Dr. Crittenden's research interests include scattering of electromagnetic waves, heat transfer, design of experiments, applied mathematics, asymptotic and perturbation methods and numerical analysis. Tel. 937-255-3636 x4702 (DSN 785-3636 x4702), email: Paul.Crittenden@afit.edu.

CUNNINGHAM, WILLIAM A., III, Professor of Logistics Management, Department of Operational Sciences, AFIT Appointment Date: 1994 (AFIT/ENS); BS, Business Administration, Missouri Southern State College, 1976; MS, Economics, Oklahoma State University, 1979; PhD, Economics, University of Arkansas, 1986. Dr. Cunningham's research interests include transportation, strategic mobility, activity-based costing, logistics management, public policy analysis, privatization, third-party logistics, international logistics, and international trade. Tel. 937-255-6565 x4283 (DSN 785-6565 x4283), email: William.Cunningham@afit.edu.

D'AZZO, JOHN J., Professor Emeritus, Department of Electrical and Computer Engineering, (AFIT/ENG); BEE, College of City of New York, 1941; MS, The Ohio State University, 1950; PhD, University of Salford, England, 1978. His research interests include guidance and control of aerospace vehicles, application of control theory to engineering systems, modal control theory, applications of flight control systems, formation flight control, digital control systems, and synthesis of multivariable control systems using digital controllers. Dr. D'Azzo is the co-author of a widely used series of textbooks on control theory. He is a Fellow of the IEEE and Associate Fellow of the AIAA. Tel. 937-255-3636 x4592 (DSN 785-3636 x4592), email: John.DAzzo@afit.edu.

DECKRO, RICHARD F., Professor of Operations Research, Department of Operational Sciences, AFIT Appointment Date: 1994 (AFIT/ENS); BSIE, State University of New York at Buffalo, 1972; MBA, Kent State University, 1973; DBA, Kent State University, 1976. Dr. Deckro's research and consulting interests are in the areas of information operations, applied mathematical programming and optimization, campaign planning, scheduling, network models, project management, engineering management, technology selection and management, and multi-criteria decision making. He is the Editor of *Military Operations Research* and Area Editor for Service Systems for *Computers & Industrial Engineering*, as well as a member of the editorial board of *Computers & Operations Research*. Tel. 937-255-6565 x4325 (DSN 785-6565 x4325), http://en.afit.edu/ens/deckro/, email: Richard.Deckro@afit.edu.

DELLA-ROSE, DEVIN J., **Maj,** Assistant Professor of Atmospheric Physics, Department of Engineering Physics, AFIT Appointment Date: 1999 (AFIT/ENP); BS, Astronomy and Physics, Texas Christian University, 1985; BS, Meteorology, The Pennsylvania State University, 1987; MS, Upper Atmospheric Physics, Utah State University, 1993; PhD, Physics, Utah State University, 1999. Maj Della-Rose's research interests include: space environment modeling, geomagnetism, ionospheric electrodynamics, and magnetospheric physics. Maj Della-Rose is a member of the American Geophysical Union. Tel. 937-255-3636 x4514 (DSN 785-3636 x4514), email: Devin.Della-Rose@afit.edu.

DENHARD, DAVID R., Maj, Assistant Professor of Operations Research, Department of Operational Sciences, AFIT Appointment Date: 2004 (AFIT/ENS); Center for Operational Analysis (COA), BS, Carnegie Mellon University, 1988; MS, Air Force Institute of Technology, 1995; PhD, Air Force Institute of Technology, 2001. Maj Denhard's research interests include combat modeling, applied statistics, modeling and simulation, probabilistic modeling, and decision analysis. Tel. 937-255-3636 x3325 (DSN 785-3636 x3325), email: David.Denhard@afit.edu.

DUCKRO, DONALD E., Lt Col, Assistant Professor of Statistics, Department of Mathematics and Statistics, AFIT Appointment Date: 2004 (AFIT/ENC); BChE, University of Dayton, 1984; BS, Louisiana Tech University, 1986; MS, University of Dayton, 1990; PhD, Air Force Institute of Technology, 1999. Lt Col Duckro's research interests include decision theory, particularly as applied to planning and programming; and statistical evaluation of neural networks. His recent research has focused primarily on capacity analysis for Base Realignment and Closure. Lt Col Duckro's previous military assignments involve satellite development, aircraft acquisition, a joint cross-service group for BRAC, and faculty positions at USAFA and NPS. Tel. 937-255-3636 x3320 (DSN 785-3636 x3320), email: Donald.Duckro@afit.edu.

ELDER, KEVIN LEE, Assistant Professor, Department of Systems and Engineering Management, AFIT Appointment Date: 2003 (AFIT/ENV); BS, Computer Applications, California State University, Fresno; MS, Management Information Systems, California State University, Fresno; Ph.D., Management Information Systems, University of Arizona. Dr. Elder's research interests are in the areas of IS curriculum, teaching methods, systems development, knowledge management, enterprise architecture, organizational strategy and Electronic Business. Tel. 937-255-3636 x4600 (DSN 785-3636 x4600), email: Kevin.Elder@afit.edu.

ENGLAND, ELLEN C., **Lt Col**, Assistant Professor, Department of Systems and Engineering Management, AFIT Appointment Date: 2002 (AFIT/ENV); BS, Industrial Engineering, University of Iowa, 1986; MS, General Administration, Central Michigan University, 1991; MS, Environmental Health, University of Minnesota, 1996; PhD, Environmental Engineering, University of Missouri-Rolla, Rolla, MO; 2003. Lt Col England's research interests include worker exposure assessment to hazardous chemicals and membrane bioreactor technology. Her previous assignments include Chief of Bioenvironmental Engineering Grand Forks and Malmstrom AFBs and Senior Industrial Hygienist, AFIERA, Brooks, AFB. Tel. 937-255-3636 x4711 (DSN 785-3636 x4711), email: Ellen.England@afit.edu.

FICKUS, MATTHEW C., Assistant Professor of Mathematics, Department of Mathematics and Statistics, AFIT Appointment Date: 2004, (AFIT/ENC); BS, University of Maryland, Baltimore County, 1995; MS University of Maryland, Baltimore County, 1997; PhD, University of Maryland, College Park, 2001. Dr. Fickus's research interests include pure and applied harmonic analysis, Fourier series, wavelets and frames. Tel. 937-255-3636 x4513 (DSN 785-3636 x4513), email: Matthew.Fickus@afit.edu.

FIORINO, STEVEN T., Lt Col, Assistant Professor of Atmospheric Physics, Department of Engineering Physics, AFIT Appointment Date: 2003 (AFIT/ENP); BS, Geography (Climatology), The Ohio State University, 1987; BS, Meteorology, Florida State University, 1989; MS, Atmospheric Dynamics, The Ohio State University, 1993; PhD, Physical Meteorology, Florida State University, 2002. Lt Col Fiorino's research interests include microwave remote sensing of the environment, development of weather signal processing algorithms, and environmental effects on military systems. He has published broadly in meteorological, directed energy and military journals. Lt Col Fiorino is a member of the American Meteorological Society and additionally holds a Master of Military Operational Art and Science from Air University (2003). Tel. 937-255-3636 x4506 (DSN 785-3636 x4506), email: Steven.Fiorino@afit.edu.

FRANKE, MILTON E., Professor of Aerospace Engineering, Department of Aeronautics and Astronautics, AFIT Appointment Date: 1959 (AFIT/ENY); BME, University of Florida, 1952; MSME, University of Minnesota, 1954; PhD, The Ohio State University, 1967. Research interests include fluid transmission lines, thrust vector control, high lift aerodynamics, fluidics, cavity acoustics, thrust augmenting ejectors, heat transfer, electrostatic cooling, boundary layers, ground-vehicle aerodynamics, lean initiatives, reusable launch vehicles, and engineering of complex systems. Dr. Franke has authored or co-authored over 100 technical articles. He holds five patents, was the recipient of the AFIT Charles A. Stone Award in 1986, and the AFIT Bernard A. Schriever Award in 1993. Dr. Franke is a retired colonel in the Air Force Reserve. He is chair of the Committee on Organization and Rules (a committee of the ASME Board of Governors), a past Vice President for Communications of the ASME (1990-1992), past Vice President for Systems and Design of the ASME (1993-1996), a Fellow of the ASME, and Associate Fellow of the AIAA. Tel. 937-255-3636 x4720 (DSN 785-3636 x4720), email: Milton.Franke@afit.edu.

GERTS, DAVID W., Assistant Professor of Nuclear Engineering, Department of Engineering Physics, AFIT Appointment Date: 2004 (AFIT/ENP); BS/BS, Michigan State University, 1994; MS, Air Force Institute of Technology, 1999; PhD, Air Force Institute of Technology, 2002. Capt Gerts's main research interests include neutral particle transport and computational physics. Specific application areas include nuclear detonation detection from satellites and computation of neutron and gamma ray cross sections. He previously led the research, development, and analysis branch for detecting world-wide nuclear detonations for the DoD and DoS. He is a member of the American Nuclear Society. Tel. 937-255-3636 x4571 (DSN 785-3636 x4571), email: David.Gerts@afit.edu.

GODA, MATTHEW E., Maj, Assistant Professor of Electrical Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2002 (AFIT/ENG); BS in Physics, University of Rochester, 1989; MSEE, Tufts University, 1996; PhD, University of Arizona, 2002. Maj Goda's research interests include Electro-optics, Image Processing, and Multi Resolution Representation. Tel. 937-255-3636 x4614 (DSN 785-3636 x4614), email: Matthew.Goda@afit.edu.

GOLTZ, MARK N., Professor of Engineering and Environmental Management**,** Department of Systems and Engineering Management, AFIT Appointment Date: 1996 (AFIT/ENV); BS, Cornell University, 1972; MS, University of California, Berkeley, 1973; PhD, Environmental Engineering and Science, Stanford University, 1986. Dr. Goltz specializes in modeling the physical, chemical, and biological processes that affect the fate and transport of organic contaminants in the subsurface. He is also interested in the implementation and commercialization of innovative groundwater remediation technologies. Tel. 937-255-3636 x4638 (DSN 785-3636 x4638), email: Mark.Goltz@afit.edu.

GRAHAM, ROBERT P., Jr., Maj, Assistant Professor of Computer Science and Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2002 (AFIT/ENG); BS Computer Science, Virginia Polytechnic Institute and State University, 1986; MS, Air Force Institute of Technology, 1988; PhD, Air Force Institute of Technology, 1997. Maj Graham's research interests include knowledge-based software engineering, formal methods, algebraic methods, and algorithm design. Tel. 937-255-3636 x4715 (DSN 785-3636 x4715), email: Robert.Graham@afit.edu.

GRAHAM, SCOTT R., Maj, Assistant Professor of Computer Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2004 (AFIT/ENG), BSEE, Brigham Young University, 1993; MSEE, Air Force Institute of Technology, 1999; PhD, University of Illinois Urbana-Champaign 2004. His research interests include networking, architecture, and systems integration. Tel. 937-255-3636 x4918 (DSN 785-3636 x4918), email: Scott.Graham@afit.edu.

GRIFFIS, STANLEY E., Maj, Assistant Professor of Logistics Management, Department of Operational Sciences, AFIT Appointment Date: 2001 (AFIT/ENS); Center for Operational Analysis (COA), BA, History, Assumption College, 1988; MS, Logistics Management, Air Force Institute of Technology, 1996; PhD, Business Administration, The Ohio State University, 2001. Research interests include logistics performance measurement, supply chain management, logistics information management. Tel. 937-255-3636 x4708 (DSN 785-3636 x4708), email: Stanley.Griffis@afit.edu

GRIMAILA, MICHAEL R., Assistant Professor of Information Resource Management, Department of Systems Engineering and Management, AFIT Appointment Date: 2004 (AFIT/ENV); Center for Information Security Education and Research (CISER), BS, Texas A&M University, 1993; MS, Texas A&M University, 1995; PhD, Texas A&M University, 1999. Dr. Grimaila's research interests include the development, implementation, management, and maintenance of enterprise Information Assurance (IA) programs; strategic IA resource allocation; development of standardized IA metrics; data mining for fraud and misuse detection; and development of effective IA education, training, and awareness campaigns. Tel. 937-255-3636 x4800 (DSN 785-3636 x4800), email: Michael.Grimaila@afit.edu.

GUSTAFSON, STEVEN C., Associate Professor of Electrical Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 1998 (AFIT/ENG); BS, University of Minnesota, 1967; MS, Duke University, 1969; PhD, Duke University, 1974. Dr. Gustafson is an author of more than 200 publicly available technical papers, proceedings, and reports, most of which relate to optical processing and pattern recognition technology. He has been initiator and principal investigator on more than $2 million in research contracts in these areas since 1990. Tel. 937-255-3636 x4598 (DSN 785-3636 x4598), email: Steven.Gustafson@afit.edu.

HALE, TODD B., Maj, Assistant Professor of Electrical Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2002 (AFIT/ENG); BSEE, Milwaukee School of Engineering, 1993; MSEE, Air Force Institute of Technology, 1997; PhD, Air Force Institute of Technology, 2002. Maj Hale's areas of expertise are radar, radar signal processing, adaptive interference suppression, space-time adaptive processing, waveform design, and synthetic aperture radar. Tel. 937-255-3636 x4639 (DSN 785-3636 x4639), email: Todd.Hale@afit.edu.

HALLORAN, TIMOTHY, J., **Lt Col,** Academic Instructor of Computer Science, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2004 (AFIT/ENG), B.S. in Computer Science, United States Air Force Academy, 1987; M.S. in Computer Engineering, Air Force Institute of Technology, 1993; Ph.D. in Software Engineering (expected 2005), Carnegie Mellon University. His research interests include assurance of reliability and security properties of software, collaborative software development tools, and the empirical study of software development. Tel. 937-255-2024 (DSN 785-2024).

HARTRUM, THOMAS C., Associate Professor Emeritus of Electrical Engineering, Department of Electrical and Computer Engineering, (AFIT/ENG); BEE, The Ohio State University, 1969; MS, The Ohio State University, 1969; MBA, Wright State University, 1979; PhD, The Ohio State University, 1973. Dr. Hartrum's research interests include parallel and distributed computing, and formal methods in software engineering. He has authored or co-authored over 20 conference and journal articles. He is currently conducting research in object-oriented modeling and formal methods in software engineering. He is a member of the IEEE. Tel. 937-255-2024 (DSN 785-2024).

HASTRITER, M. LARKIN, Maj, Assistant Professor of Electrical Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2003 (AFIT/ENG); BSEE, Brigham Young University, 1993; MSEE, Air Force Institute of Technology, 1997; PhD, University of Illinois, 2003. Maj Hastriter's areas of interest are computational electromagnetics, radar cross section, signature analysis, and scattering centers. Tel. 937-255-3636 x4639 (DSN 785-3636 x4639), email: Michael.Hastriter@afit.edu.

HAVRILLA, MICHAEL J., Assistant Professor of Electrical Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2002 (AFIT/ENG); BS, Michigan State University, 1987, MSEE, Michigan State University, 1989, PhD, Michigan State University, 2001. His research interests include electromagnetics, wave propagation, and electromagnetic propagation of materials. He is a member of the IEEE. Tel. 937-255-3636 x4582 (DSN 785-3636 x4582), email: Michael.Havrilla@afit.edu.

HEILMANN, SHARON, G., Maj, Instructor of Management**,** Department of Systems and Engineering Management, AFIT Appointment Date: 2004 (AFIT/ENV); BS, Organizational Communication, Eastern Michigan University, 1988; MA, Organizational Communication, Ohio University, 1989; MS, Logistics Management, Air Force Institute of Technology, 1998; Master of Business, Indiana University-Bloomington, 2003; PhD, Organizational Behavior / Human Resource Management, Indiana University-Bloomington, expected Fall 2004. Maj Heilmann's research interests include human resource management, sexual harassment and whistle-blowing, mentoring, and organizational turnover. Tel. 937-255-3636 x4553 (DSN 785-3636 x4553), email: Sharon.Heilmann@afit.edu.

HEMINGER, ALAN R., Associate Professor, Department of Systems and Engineering Management, AFIT Appointment Date: 1994 (AFIT/ENV); BA, Philosophy, University of Michigan, 1966; MS, Educational Psychology, California State University at Hayward, 1978; PhD, Management Information Systems, University of Arizona, 1988. Dr. Heminger's research interests include information resource management, computers and group problem-solving, reengineering, and long-term access to information. Tel. 937-255-3636 x4797 (DSN 785-3636 x4797), email: Alan.Heminger@afit.edu.

HENGEHOLD, ROBERT L., Professor of Physics and Head, Department of Engineering Physics, AFIT Appointment Date: 1961 (AFIT/ENP); BA, Thomas More College, 1956; MS, University of Cincinnati, 1961; PhD, University of Cincinnati, 1965. Professor Hengehold's research areas center around experimental solid state physics, semiconductor physics, optical diagnostics and electron and laser spectroscopy. He is the author of over 86 archival publications and over 200 presentations at technical meetings. He has served as advisor on over 17 doctoral dissertations and 80 Master's theses. He is currently carrying out studies of (1) compound semiconductor materials and superlattice structures for mid-infrared diode lasers and detectors using hot electron spectroscopy, and (2) wide bandgap semiconductors for UV detectors using cathodo- and photo-luminescence. This work involves collaborative efforts with the Directed Energy and the Sensors Directorates of AFRL and the MIT Lincoln Laboratory. He has received the Air University Commander's Award for Faculty Achievement in 1982, the Gage H. Crocker Outstanding Professor Award in 1996, the Outstanding Professional Achievement Award from the Affiliate Society Council of the Engineering and Science Foundation of Dayton in 1997, and the General Bernard A. Schriever Award for 1999. Tel. 937-255-2012 (DSN 785-2012), email: Robert.Hengehold@afit.edu.

HICKS, KERRY D., Lt Col, USAF Assistant Professor of Aerospace Engineering, Department of Aeronautics and Astronautics, AFIT Appointment Date: 2004 (AFIT/ENY), BS Aeronautical and Astronautical Engineering, University of Illinois (UIUC), 1985; MS Astronautical Engineering, Air Force Institute of Technology, 1986; PhD Astronautical Engineering, Air Force Institute of Technology, 1989. Lt Col Hicks' research interests include astrodynamics, re-entry dynamics, and electric space propulsion with emphasis on numerical solutions and mathematical modeling. He has published several conference papers and journal articles as well as DoD publications. He is a member of Tau Beta Pi and a Senior Member of AIAA. Tel. 937-255-3636 x4568 (DSN 785-3636 x4568), email: Kerry.Hicks@afit.edu.

HICKS, MICHAEL J., Assistant Professor of Economics, Department of Systems and Engineering Management, AFIT Appointment Date: 2004 (AFIT/ENV). BS Economics, 1984, Virginia Military Institute, MA Economics, University of Tennessee, 1997, PhD. Economics, University of Tennessee, 1998. U.S. Army Command and General Staff College, 2003. Dr. Hicks' research interests include public finance, regional economics, non-market valuation techniques in environmental and infrastructure analysis. Tel. 937-255-3636 x4605 (DSN 785-3636 x4605), email: Michael.Hicks@afit.edu.

HOLT, DANIEL T., Maj, Assistant Professor of Management, Department of Systems and Engineering Management, AFIT Appointment Date: 2004 (AFIT/ENV); BS, Electrical Engineering, University of Louisville, 1989; MA, Human Resource Development, Webster University, 1993; MS, Air Force Institute of Technology, 1995; and, PhD, Management Auburn, 2002. Maj Holt's research interests include organizational change, organizational development, human resource management, and attitude measurement. Tel. 937-255-3636 x4800 (DSN 785-3636 x4800), email: Daniel.Holt@afit.edu.

HOPKINSON, KENNETH M., Assistant Professor of Computer Science, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2004 (AFIT/ENG), BS, Computer Science, Rensselaer Polytechnic Institute, 1997; MS, Computer Science, Cornell University, 2002; PhD, Computer Science, Cornell University 2004. His research interests include distributed systems, networking, and simulation. Tel. 937-255-3636 x4579 (DSN 785-3636 x4579), email: Kenneth.Hopkinson@afit.edu.

HOUPIS, CONSTANTINE H., Professor Emeritus of Electrical Engineering, Department of Electrical and Computer Engineering, (AFIT/ENG); BS, University of Illinois, 1947; MS, University of Illinois, 1948; PhD, University of Wyoming, 1971. His research interests include guidance and control of aerospace vehicles, application of optimal control theory to engineering systems, flight control systems, digital control systems, computational and numerical methods for control system design, linear and nonlinear control theory, multivariable theory, and quantitative feedback theory. Professor Houpis has published numerous technical articles and textbooks. He is a registered professional engineer and a Fellow of the IEEE. Tel. 937-255-3636 x4615 (DSN 785-3636 x4615), email: Constantine.Houpis@afit.edu.

HUDGENS, BRYAN J., Director, Graduate Strategic Purchasing Program, Instructor of Strategic Purchasing and Supply Chain Management, Department of Systems and Engineering Management, AFIT Appointment Date: 2003 (AFIT/ENV); BA (Math), University of Pennsylvania, 1989; MS (Contract Management), AFIT, 1997; Doctoral Candidate, Marketing and Supply Chain Management, The University of Oklahoma. Major Hudgens' research focuses on supply chain relationships both within and between the commercial and governmental arenas, with special emphasis on the "upstream" (supplier) component of supply chains. He also enjoys exploring how organizations learn about their environments, recognize opportunities within the environment, and act on those opportunities. Finally, he has a research interest in government acquisition processes, especially when and how to transform those processes for greater effectiveness and efficiency. Tel. 937-255-3636 x4574 (DSN 785-3636 x4574), email: Bryan.Hudgens@afit.edu.

HUGHSON, MONTGOMERY C., Lt Col, Assistant Professor of Aerospace Engineering, Acting Deputy Department Head, CFD Laboratory Director, Department of Aeronautics and Astronautics, AFIT Appointment Date: 2000 (AFIT/ENY); AA Resource Management, Community College of the Air Force, 1989; BS Aerospace Engineering, University of Texas at Austin, 1984; MS Systems Analysis with Scientific Option, University of West Florida, 1989; MS Aeronautical Engineering, Air Force Institute of Technology at Wright-Patterson AFB, OH, 1990; MS Military Operational Art and Science, Air University at Maxwell AFB, AL, 2000; PhD Aerospace Engineering, Mississippi State University, 1998. His research interests include computational fluid dynamics and high-speed aerodynamics with an emphasis on algorithm development and aerospace vehicle applications. Lt Col Hughson is a senior member of the American Institute of Aeronautics and Astronautics (AIAA). Tel. 937-255-3069 (DSN 785-3069).

JACQUES, DAVID R., Assistant Professor of Aerospace Engineering, Department of Aeronautics and Astronautics, AFIT Appointment Date: 1999 (AFIT/ENY); BSME, Lehigh University, 1983; MSAE, Air Force Institute of Technology, 1989; PhD, Air Force Institute of Technology, 1995. Dr. Jacques' primary research is in the field of stability and control of air and space vehicles. He has published several papers on constrained optimal control synthesis, and co-authored a software toolbox that utilized his synthesis techniques. Current research addresses cooperative behavior and control for air and space vehicles, and general Systems Engineering theory and application. Dr. Jacques has extensive experience in munition system development and analysis, as well as ballistic system test. He is the curriculum chair for Systems Engineering and serves as Chief, Education and Training Division, AF Center for Systems Engineering. Tel. 937-255-3355 x3329 (DSN 785-3355 x3329), email: David.Jacques@afit.edu.

JOHN, GEORGE, Professor Emeritus of Nuclear Engineering, Department of Engineering Physics, (AFIT/ENP); BSc, Ohio State University, 1948; PhD, Ohio State University, 1952. Professor John's research areas are applications of nuclear radiation and radionuclides to problems in science and engineering. This includes applications of Mössbauer spectrometry to problems in materials sciences, analysis of radionuclides in the environment, development of nuclear radiation detectors and general techniques for detecting and analyzing nuclear radiation. Current research emphases are on applications of Mössbauer Spectrometry in the development of lubricants in collaboration with the Air Force Research Laboratory Materials Directorate at WPAFB. Other areas of interest are: the natural radiation background and health physics. Tel. 937-255-3636 x4837 (DSN 785-3636 x4837), email: George.John@afit.edu.

JOHNSON, ALAN W., Associate Professor of Logistics Management, Department of Operational Sciences, AFIT Appointment Date: 2004 (AFIT/ENS); BS, Mechanical Engineering, Montana State University, 1982; MS, Systems Management, Air Force Institute of Technology, 1989; PhD, Industrial and Systems Engineering, Virginia Polytechnic Institute and State University, 1996. Dr. Johnson's research interests include strategic mobility, discrete-event simulation, logistics management, reliability and maintainability, and discrete optimization and heuristics. Tel. 937-255-3636 x4703 (DSN 785-3636 x4703), email: Alan.Johnson@afit.edu.

KABRISKY, MATTHEW, Professor Emeritus, Department of Electrical and Computer Engineering, (AFIT/ENG); BEE, Polytechnic Institute of Brooklyn, 1951; MEE, Polytechnic Institute of Brooklyn, 1952; PhD, University of Illinois, 1964. His areas of expertise include information processing in the human central nervous system and mathematical models of the man machine interface. Dr. Kabrisky is the author and co-author of two books and 60 technical articles. He has chaired over 100 theses and dissertations in his 30+ years in the Department. Tel. 937-255-2024 (DSN 785-2024), email: Matthew.Kabrisky@afit.edu.

KHAROUFEH, JEFFREY P., Assistant Professor of Operations Research, Department of Operational Sciences, AFIT Appointment Date: 2001 (AFIT/ENS); BS, Ohio University, 1995; MS, Ohio University, 1997; PhD, Pennsylvania State University, 2001. Dr. Kharoufeh's primary research interest is the development and analysis of stochastic models in operations research. His application areas include reliability theory, optimal maintenance, and queueing systems. Tel. 937-255-3636 x4603 (DSN 785-3636 x4603), email: Jeffrey.Kharoufeh@afit.edu.

KIM, YONG C., Assistant Professor of Computer Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2003 (AFIT/ENG); BSCE, University of Washington, 1995; MSECE, University of Wisconsin, 1997; PhD, University of Wisconsin, 2002. His areas of interest are advanced computer architecture, VLSI design, test, design for testability, synthesis, CAD tools, reconfigurable and fault-tolerant computing. Tel. 937-255-3636 x4620 (DSN 785-3636 x4620), email: Yong.Kim@afit.edu.

KING, PAUL I., Professor of Aerospace Engineering, Department of Aeronautics and Astronautics, AFIT Appointment Date: 1991 (AFIT/ENY); BS, Arizona State University, 1971; MS, Air Force Institute of Technology, 1972; PhD, Oxford University, England, 1986. Former faculty member at the U.S. Air Force Academy and Cleveland State University, Cleveland, Ohio. Dr. King's research interests include internal and external aerodynamics and heat transfer (wings and bodies, turbomachinery and other applications). His research emphasizes experimentation and instrumentation. He has published over 70 articles and reports and chaired over 55 theses and dissertations. Tel. 937-255-3636 x4628 (DSN 785-3636 x4628), email: Paul.King@afit.edu.

KITCHEN, DONALD R., Col, Assistant Professor of Electrical Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2001 (AFIT/ENG), BS in Metallurgical Engineering, Ohio State University, 1973; MS in Electronics Engineering, Air Force Institute of Technology, 1978; MBA, University of Dayton, 1979; MS in Materials Science, Syracuse University, 1982; PhD, Syracuse University, 1995. Col Kitchen's areas of expertise are solid state science and technology, low observability, and material science. Tel. 937-255-2024 (DSN 785-2024).

KLADITIS, PAUL E., Capt, Assistant Professor of Electrical Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2001 (AFIT/ENG): BSEE, Wright State University, 1996; MSEE, Air Force Institute of Technology, 1997; PhD Mechanical Engineering, University of Colorado at Boulder, 2001. His areas of expertise include the design and fabrication of micro-electro-mechanical systems. He is a member of IEEE and Tau Beta Pi. Tel. 937-255-3636 x4595 (DSN 785-3636 x4595), email: Paul.Kladitis@afit.edu.

KUNZ, DONALD L., Associate Professor of Aerospace Engineering, Department of Aeronautics and Astronautics, AFIT Appointment Date: 2003 (AFIT/ENY); BS, Syracuse University, 1971; MS, Georgia Institute of Technology, 1972; PhD, Georgia Institute of Technology, 1976; Dr. Kunz's research interests include rotorcraft dynamics, vibrations, and loads, structural dynamics, aeroelasticity, multibody dynamics, smart structures, and computational structural mechanics. He has published more than 60 journal articles, conference papers, and technical reports. Prior to coming to AFIT, Dr. Kunz worked at the US Army Aeroflightdynamics Directorate, McDonnell Douglas Helicopter Company, Old Dominion University, and the US Army Aviation and Missile Command. He is an Associate Fellow of AIAA; a member of AHS, ASME, and ASEE; and a licensed professional engineer in the Commonwealth of Virginia. Tel. 937-255-3636 x4548 (DSN 785-3636 x4548), email: Donald.Kunz@afit.edu.

LAIR, ALAN V., Professor of Mathematics and Head, Department of Mathematics and Statistics, AFIT Appointment Date: 1982, (AFIT/ENC); BA, North Texas State University, 1970; MS, Texas Tech University, 1972; PhD, Texas Tech University, 1976. Dr. Lair's research interests include parabolic and elliptic partial differential equations, functional analysis, applied mathematics, and nonlinear diffusion. Dr. Lair has published several papers on the properties of solutions of various nonlinear equations. Tel. 937-255-3636 x4519 (DSN 785-3636 x4519), email: Alan.Lair@afit.edu.

LAMONT, GARY B., Professor of Electrical and Computer Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 1970 (AFIT/ENG); BA, of Physics, 1961; MSEE, 1967; PhD, 1970; University of Minnesota. His research interests include: parallel/distributed computation, combinatorial optimization problems, formal methods, software engineering, digital signal processing, analog and digital control systems, intelligent and distributed control systems, computational and numerical methods, evolutionary computation, and computer-aided design. Dr. Lamont has authored textbooks as well as over 125 papers on the above topics and on educational techniques. He has chaired over 200 MS theses and 25 PhD dissertations. Dr. Lamont was an engineering systems analyst for the Honeywell Corp. for six years. Tel. 937-255-3636 x4718 (DSN 785-3636 x4718), email: Gary.Lamont@afit.edu.

LARIVEE, DAVID R., Col, Assistant Professor of Operations Research and Head, Department of Operational Sciences, AFIT Appointment Date: 2002 (AFIT/ENS); Center for Operational Analysis (COA), BS, United States Air Force Academy, 1980; MS, University of North Carolina-Chapel Hill, 1985, D. Phil, Oxford University, 1993. Col LaRivee's research interests include combat modeling, force application from space and operational assessments. He is a member of the Institute for Operations Research and Management Science (INFORMS) and the Military Operations Research Society (MORS). Tel. 937-255-2549 (DSN 785-2549).

LEACH, SONIA E., Maj, Instructor of Management, Department of Systems and Engineering Management, AFIT Appointment Date: 2004 (AFIT/ENV); BS, Mathematics – Applied Analysis, The Pennsylvania State University, 1991; MS, Operations Research, Air Force Institute of Technology, 1997; Doctoral Candidate, Industrial Engineering, Arizona State University. Maj Leach's research interests include the role of modeling, simulation and analysis in the product development arena. Tel. 937-255-3636 x4796 (DSN 785-3636 x4796), email: Sonia.Leach@afit.edu.

LEARN, ANDREW W., Maj, Academic Instructor of Computer Science, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2003 (AFIT/ENG); BS, Pennsylvania State University, 1989; MS, Air Force Institute of Technology, 1999; MS, University of Rochester, 2001. Maj Learn's areas of interest include artificial intelligence, machine learning, and natural language grounding. Tel. 937-255-3636 x4541 (DSN 785-3636 x4541), email: Andrew.Learn@afit.edu.

LIEBST, BRADLEY S., Professor of Aerospace Engineering and Head, Department of Aeronautics and Astronautics, AFIT Appointment Date: 1989 (AFIT/ENY); BS, Wichita State University, 1978; MS, Massachusetts Institute of Technology, 1979; PhD, Massachusetts Institute of Technology, 1981. Dr. Liebst's research interests include eigenstructure assignment and control, stability and control of aerospace vehicles, passive and active control of large flexible structures, and aircraft handling qualities. He has published over 30 articles and reports and chaired over 40 theses and dissertations. Prior to teaching at AFIT, Professor Liebst was Assistant Professor of Aerospace Engineering for 6 years at the University of Minnesota where he was voted the 1987 Best Institute of Technology (U of M) Professor. Tel. 937-255-3636 x4636 (DSN 785-6565 x4636), email: Bradley.Liebst@afit.edu.

LOTT, JAMES A., Lt Col, Professor of Electrical Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 1993 (AFIT/ENG); BSEECS, University of California at Berkeley, 1985; MSEE, Air Force Institute of Technology, 1987; PhD, University of New Mexico, Albuquerque, 1993. Lt Col Lott's research interests include microelectronics, photonics, micro-electro-mechanical systems, and nanotechnology. His areas of expertise include epitaxial crystal growth, micro-fabrication, semiconductor physics and lasers. Tel. 937-255-3636 x4576 (DSN 785-3636 x4576), email: James.Lott@afit.edu.

LOWTHER, RONALD P., Lt Col, Deputy Head, Department of Engineering Physics and Assistant Professor of Atmospheric Physics, AFIT Appointment Date: 2000 (AFIT/ENP); BS, Computer Science, Chapman University, 1983; MS, Meteorology, Texas A&M University, 1989; PhD, Meteorology, Texas A&M University, 1998. Lt Col Lowther has chaired MS theses in the areas of numerical weather prediction model validation, long-range forecasting, seasonal weather predictions, severe storm forecasts, low cloud and visibility prediction, tropical storm intensity forecasting, and data mining of climatic parameters for both short and long-range predictive patterns. Lt Col Lowther's research interests are in the field of applied climatology concentrating on seasonal forecasting using global teleconnection patterns, especially the effects of weather and climate on DoD operations and weapon system performance. Lt Col Lowther is a member of the American Meteorological Society, National Weather Association, Air Weather Association, and the Association of American Geographers (Military Geographers). Tel. 937-255-3636 x4645 (DSN 785-3636 x4645), email: Ronald.Lowther@afit.edu.

MALL, SHANKAR, Professor, Department of Aeronautics and Astronautics, AFIT Appointment Date: 1986 (AFIT/ENY); BS, Mechanical Engineering, Banaras Hindu University, India, 1964; MS, Mechanical Engineering, Banaras Hindu University, 1966; PhD, Mechanical Engineering, University of Washington, 1977. Dr. Mall's research centers on composite and smart materials, fatigue and fracture. Dr. Mall has authored over 100 papers and has been the co-editor of a book and five conference proceedings. He is a Fellow of ASME, Associate Fellow of AIAA. He is also the Principal Materials Research Engineer, Materials and Manufacturing Directorate, Air Force Research Laboratory. He is associate editor of several journals. Tel. 937-255-3636 x4587 (DSN 785-3636 x4587), email: Shankar.Mall@afit.edu.

MAPLE, RAYMOND C., Lt Col, Associate Professor of Aerospace Engineering, Department of Aeronautics and Astronautics, AFIT Appointment Date: 2002 (AFIT/ENY); BS, Cornell University, 1985; MS, Air Force Institute of Technology, 1989; PhD, Air Force Institute of Technology, 2002. Lt Col Maple's interests include computational fluid dynamics and parallel computing, with an emphasis on algorithm development, visualization, fluid-structure interaction, and aircraft store separation applications. Lt Col Maple is a senior member of the American Institute of Aeronautics and Astronautics (AIAA). Tel. 937-255-3636 x4577 (DSN 785-3636 x4755), email: Raymond.Maple@afit.edu.

MARCINIAK, MICHAEL A., Assistant Professor of Physics, Department of Engineering Physics AFIT Appointment Date: 1999 (AFIT/ENP); BS, St. Joseph's College, 1981; BSEE, University of Missouri, 1983; MSEE, Air Force Institute of Technology, 1987; PhD, Air Force Institute of Technology, 1995. Lt Col Marciniak's research interests include material characterization of narrow-gap semiconductors for mid-infrared opto-electronic devices, and characterization of wide-bandgap, optically activated, high-power semiconductor devices. His previous assignments include the high-power semiconductor laser program at the Air Force Research Laboratory (AFRL), Kirtland AFB, NM, and the More Electric Aircraft program at AFRL, Wright-Patterson AFB, OH. Tel. 937-255-3636 x4529 (DSN 785-3636 x4529), email: Michael.Marciniak@afit.edu.

MARTIN, RICHARD K., Assistant Professor of Electrical Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2004 (AFIT/ENG), BSEE & BS Physics, University of Maryland at College Park, 1999; MSEE, Cornell University, 2001; PhD, Cornell University, 2004. His research interests include signal processing and communication systems. Tel. 937-255-3636 x4625, (DSN 785-3636 x4625), email: Richard.Martin@afit.edu.

MATHEWS, KIRK A., Professor of Nuclear Engineering, Department of Engineering Physics, AFIT Appointment Date: 1992 (AFIT/ENP); BS, California Institute of Technology, 1971; MS, Air Force Institute of Technology, 1982; PhD, Air Force Institute of Technology, 1983. Dr. Mathews' research interests center on computational methods for neutral particle radiation transport, and include blast and shock, nuclear weapons effects simulation, and deconvolution of radiation spectra. Dr. Mathews has published 14 papers in refereed journals and 16 conference proceedings, and has chaired 25 theses and 6 dissertations. He is a member of Tau Beta Pi. Tel. 937-255-3636 x4508 (DSN 785-3636 x4508), email: Kirk.Mathews@afit.edu.

MAYBECK, PETER S., Professor of Electrical Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 1973 (AFIT/ENG); BS, Massachusetts Institute of Technology, 1968; PhD, Massachusetts Institute of Technology, 1972. Dr. Maybeck's research interests include optimal estimation and stochastic control, Kalman filtering, adaptive estimation, pointing and tracking, optimally aided inertial navigation systems, multiple model adaptive filtering. He is the author of the widely recognized three-volume reference text, "Stochastic Models, Estimation and Control" and of over 100 technical articles. Dr. Maybeck has received numerous national and local awards including the C. Holmes MacDonald Distinguished Young Electrical Engineering Teacher and the ASEE Frederick Emmons Terman Award as the outstanding Electrical Engineering Professor in the US for 1985. He is a Fellow of the IEEE. Tel. 937-255-3636 x4581 (DSN 785-3636 x4581), email: Peter.Maybeck@afit.edu.

MAYER, CHRISTOPHER B., Maj, Academic Instructor of Computer Science, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2003 (AFIT/ENG), BSEE, Texas A&M University, 1992; MSEE, Air Force Institute of Technology, 1997; PhD (pending), Arizona State University 2005. His research interests include buffer and cache protocol design and optimization, swarm intelligence, and algorithms for bi-static radars. Tel. 937-255-3636 x4542 (DSN 785-3636 x4542), email: Christopher.Mayer@afit.edu.

MCMULLAN, RICHARD J., Maj, Assistant Professor of Aeronautical Engineering, Department of Aeronautics and Astronautics, AFIT Appointment Date: 2002 (AFIT/ENY); BS, Mechanical Engineering, Clemson University, 1991; MS, Aeronautical Engineering, Air Force Institute of Technology, 1996; PhD, Aerospace Engineering, North Carolina State University, 2002. His research interests include computational fluid dynamics, high-speed aerodynamics, magnetogasdynamic flow control of scramjet propulsion systems, and unsteady supersonic mixed compression inlet flows. Tel. 937-255-3636 x4578 (DSN 785-3636 x4578), email: Richard.McMullan@afit.edu.

MCNUTT, ROSS T., Assistant Professor of Systems Design and Management, Department of Systems and Engineering Management, AFIT Appointment Date: 2004 (AFIT/ENV); BS, Math and Physics, US Air Force Academy, 1987; MS, Aeronautical and Astronautical Engineering Massachusetts Institute of Technology, 1992; MS Technology and Policy, Mass Inst of Tech, 1992; PhD, Technology Management and Policy, Mass Inst of Tech,1998. Research interests include defense product development, product development cycle time reduction, technology development and application, lean aerospace initiative, Cost of Delay analysis, schedule based tools and incentives, and project portfolio management practices. Additional information at http://en.afit.edu/env/GRDnew/CycleTimeReductionResearch, Tel. 937-255-3636 x4648 (DSN 785-3636 x4648), email: Ross.McNutt@afit.edu.

MELOUK, SHARIF H., Assistant Professor of Operations Research, Department of Operational Sciences, AFIT Appointment Date: 2003 (AFIT/ENS); BS, Oklahoma State University, 1993; MBA, Oklahoma State University, 1997; PhD, Texas A&M University, 2003. Dr. Melouk's research interests include simulation modeling and analysis with respect to manufacturing and logistics issues as well as distributed simulation. He is a member of the Institute for Operations Research and the Management Sciences (INFORMS) and the Institute of Industrial Engineers (IIE). Tel. 937-255-3636 x4525 (DSN 785-3636 x4525), email: Sharif.Melouk@afit.edu.

MILLER, JOHN O., Associate Professor of Operations Research, Director Center for Operational Analysis (COA), Department of Operational Sciences, AFIT Appointment Date: 2002 (AFIT/ENS); BS, United States Air Force Academy, 1980; MBA, University of Missouri at Columbia, 1983; MS, Air Force Institute of Technology, 1987; PhD, The Ohio State University, 1997. Dr. Miller's research interests include simulation, ranking and selection, combat modeling, and nonparametric statistics. Tel. 937-255-6565 x4326 (DSN 785-6565 x4326), email: John.Miller@afit.edu.

MILLS, ROBERT F., Assistant Professor of Electrical Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2003 (AFIT/ENG); Center for Information Security Education and Research (CISER); BSEE, Montana State University, 1983; MSEE, Air Force Institute of Technology, 1987; PhD, University of Kansas, 1994. His areas of interest include digital and spread spectrum communications, radar systems, C4ISR architectures, information assurance (insider threat mitigation). Tel. 937-255-3636 x4527 (DSN 785-3636 x4527), email: Robert.Mills@afit.edu.

MOORE, ALBERT H., Professor Emeritus, Department of Mathematics and Statistics, (AFIT/ENC); BME, Pratt Institute, 1942; MS, New York University, 1949; PhD, The Ohio State University, 1972. Dr. Moore's research interests include order statistics, maximum likelihood estimation, Bayes estimation, numerical solution of partial differential equations, admissible estimators, adaptive robust estimation, sequential tests of hypotheses, confidence limits for system reliability, nonparametric density estimation, goodness-of-fit tests, military operations research, stochastic processes, applied mathematics, numerical analysis, operations research, probability and statistics, design of experiments, and maintainability. Tel. 937-255-3636 x4678 (DSN 785-3636 x4678), email: Albert.Moore@afit.edu.

MOORE, JAMES T., Associate Professor of Operations Research and Interim Head , Department of Operational Sciences, AFIT Appointment Date: 1998 (AFIT/ENS); Center for Operational Analysis (COA), BA, University of Colorado, 1974; MBA, University of Wyoming, 1978; MS, Air Force Institute of Technology, 1981; PhD, The University of Texas at Austin, 1988. Dr. Moore's research interests include optimization theory, integer programming, scheduling, heuristics, and mobility modeling. Tel. 937-255-3636 x4528 (DSN 785-3636 x4528), email: James.Moore@afit.edu.

MUCZYK, JAN P., Chair of Executive Education and Professor of Management, Department of Systems and Engineering Management, AFIT Appointment Date: 2001 (AFIT/ENV). BS, MBA, and DBA, University of Maryland in Management and Organizational Behavior. Dr. Muczyk's research interests include leadership, streamlining bureaucracies, and strategy implementation. Tel. 937-255-3069 (DSN 785-3069).

MULLINS, BARRY E., Assistant Professor of Computer Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2004 (AFIT/ENG), BS Computer Engineering, University of Evansville, 1983; MS Computer Engineering, Air Force Institute of Technology, 1987; PhD, Virginia Polytechnic Institute and State University, 1997. His research interests include computer communication networks, embedded networking, wireless networks, and performance modeling, analysis and simulation of real-time communication systems. Dr. Mullins has received the U.S. Air Force Academy's Outstanding Academy Educator award as well as the Brig. Gen. R. E. Thomas award for outstanding contribution to cadet education twice. He is a member of Tau Beta Pi, Eta Kappa Nu and a senior member of IEEE. Tel. 937-255-3636 x4916 (DSN 785-3636 x4916), email: Barry.Mullins@afit.edu.

NEHER, ROBERT E. JR., **Maj,** Assistant Professor of Statistics, Department of Mathematics and Statistics, AFIT Appointment Date: 2004 (AFIT/ENC); BS, Purdue University, 1989; MS, Air Force Institute of Technology, 1996; PhD, The Florida State University, 2004. Maj Neher's research interests include reliability and maintainability, from a statistical view point, and image analysis, particularly hyperspectral imagery. Maj Neher's previous military assignments have been in missile operations, test and evaluation, and weapons analysis. Tel. 937-255-6565 x4403 (DSN 785-6565 x4403), email: Robert.Neher@afit.edu.

NIDAY, THOMAS A., Assistant Professor of Physics, Department of Engineering Physics, AFIT Appointment Date: 2004 (AFIT/ENP); BS, Physics and Applied Mathematics, with honors, California Institute of Technology, 1997; MS, Applied Physics, distinguished graduate, Air Force Institute of Technology, 1999; MS, Optical Science, University of Arizona, 2002; PhD, Optical Science, University of Arizona, 2004. Capt Niday's research interests include modeling and simulation of the atmospheric propagation of ultrashort, high power laser pulses. Such pulses, or light filaments, have potential applications in remote sensing, adaptive optics, and electromagnetic discharge control. Other areas of interest include the exploitation of data from novel hyperspectral imaging sensors. Tel. 937-255-3636 x4828 (DSN 785-3636 x4828), email: Thomas.Niday@afit.edu.

OXLEY, MARK E., Professor of Mathematics, Department of Mathematics and Statistics, AFIT Appointment Date: 1987 (AFIT/ENC), and Researcher, Sensor Fusion Laboratory, Center for Operational Analysis (COA); BS, Cumberland College, 1978; MS, Purdue University, 1980; PhD, North Carolina State University, 1987. Dr. Oxley's research interests include partial differential equations, free and moving boundary value problems, finite time extinction problems, functional analysis, optimization, artificial neural networks, groundwater modeling, wavelet analysis, classifier fusion, sensor fusion and evaluation of fusion techniques. Dr. Oxley has been funded by AFOSR to work on data reduction techniques, AFRL/SNAT to work on classifier fusion, DAGSI to work on Automatic Target Recognition using invariants analysis, DAGSI to work on wavelet transform algorithms for real-time processing of images, and DARPA to work on integration of sensing and processing. Several of his students have written theses related to optimal remediation of pump-and-treat systems, binaural listening, measuring the capability of artificial neural networks and most recently the fusion of multiple classifiers. Tel. 937-255-3636 x4515 (DSN 785-3636 x4515), email: Mark.Oxley@afit.edu.

PACHTER, MEIR, Professor, Department of Electrical and Computer Engineering, AFIT Appointment Date: 1993 (AFIT/ENG); BS, Israel Institute of Technology, 1967; MS, Israel Institute of Technology, 1969; PhD, Israel Institute of Technology, 1975. Dr. Pachter's fields of expertise include automatic control of aircraft and missiles, adaptive control and system identification, inertial and GPS Navigation, autonomous control/neural networks/fuzzy logic control, nonlinear control and applied mathematics. Dr. Pachter has published papers in these areas and in differential games, robotics, and the theory of computational geometry. Tel. 937-255-3636 x4593 (DSN 785-3636 x4593), email: Meir.Pachter@afit.edu.

PALAZOTTO, ANTHONY N., Professor of Aerospace Engineering, Department of Aeronautics and Astronautics, AFIT Appointment Date: 1975 (AFIT/ENY); BS, New York University, 1955; MS, Brooklyn Polytechnic Institute, 1961; PhD, New York University, 1968. Professor Palazotto's interests include nonlinear mechanics, shell analysis, finite elements, composite materials, viscoplasticity and nonlinear dynamics. Dr. Palazotto is the co-author of a textbook, "The Nonlinear Analysis of Shell Structures," published in 1992 by the AIAA. In addition he has authored over 165 archival technical publications and more than 330 technical reports and manuscripts. Dr. Palazotto received the Hetanyi Award in 1982 from the Society of Experimental Mechanics, the Cleary Award in 1981 from the Air Force Materials Lab, and the Structures and Materials Award from the ASCE in 1986. Dr. Palazotto is a Fellow of the ASCE and an Associate Fellow of the AIAA. He is a registered Professional Engineer. Tel. 937-255-3636 x4599 (DSN 785-3636 x4599), email: Anthony.Palazotto@afit.edu.

PATTERSON, KIRK A., Maj, Assistant Professor of Logistics Management, Department of Operational Sciences, AFIT Appointment Date: 2002 (AFIT/ENS); BS, Auburn University, 1985; MS, Auburn University, 1988; MS, Air Force Institute of Technology, 1997; PhD, University of Maryland, 2002. Maj Patterson's research interests include supply chain management, transportation, strategic mobility, and logistics information management systems. Tel. 937-255-3636 x4653 (DSN 785-3636 x4653), email: Kirk.Patterson@afit.edu.

PERRAM, GLEN P., Professor of Physics, Department of Engineering Physics, AFIT Appointment Date: 1989 (AFIT/ENP); BS, Cornell University, 1980; MS, Air Force Institute of Technology, 1981; PhD, Air Force Institute of Technology, 1986. Dr. Perram's research interests include high power chemical lasers, including the Chemical Oxygen-Iodine Laser and the Airborne Laser, infrared gas-phase lasers for counter-measure missions, reaction kinetics, atomic and molecular spectroscopy, environmental science, photochemistry, molecular dynamics, optical diagnostics, and remote sensing. He has advised 16 PhD and 28 MS students, received 22 research grants and published over 60 papers during his fifteen years on the AFIT faculty. Tel. 937-255-3636 x4504 (DSN 785-3636 x4504), email: Glen.Perram@afit.edu.

PERRY, MARCUS B., Assistant Professor of Operations Research, Dept of Operational Sciences, AFIT Appointment Date: 2004 (AFIT/ENS); BS, Southern Illinois University, 1998; MS, Southern Illinois University, 2000; PhD, Florida State University, 2004. Dr. Perry's research interests include statistical process control, design and analysis of experiments, response surface methods and regression analysis. Tel. 937-255-3636 x4588 (DSN 785-3636 x4588), email: Marcus.Perry@afit.edu.

PETERSON, GILBERT L. Assistant Professor of Computer Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2002 (AFIT/ENG); BS Architecture University of Texas at Arlington, 1995; MS, Computer Science, University of Texas at Arlington, 1998; PhD, University of Texas at Arlington, 2001. His research interests include uncertainty in artificial intelligence, robotics, machine learning, datamining, and parallel processing. Tel. 937-255-6565 x4281 (DSN 785-6565 x4281), email: Gilbert.Peterson@afit.edu.

PETROSKY, JAMES C., Assistant Professor of Nuclear Engineering, Department of Engineering Physics, AFIT Appointment Date: 2000 (AFIT/ENP); BA, (Engineering Physics/Computer Science) Millersville University of Pennsylvania, 1984; MS (Engineering Physics) Rensselaer Polytechnic Institute, 1992; PhD, (Engineering Physics) Rensselaer Polytechnic Institute, 1995. Dr. Petrosky's interests focus on the interaction and characterization of radiation effects on semiconductor devices. His studies have included work with narrow-band gap material studies, MCT growth techniques, and modeling electrical characteristics of irradiated devices. While an Instructor at the United States Military Academy, he was the director of the USMA sub-critical assembly, taught classical physics, Nuclear Reactor Engineering and Nuclear Systems Engineering and did much work in developing reactor simulation codes and HTML modeling for use in teaching programs. His current research interests are in ionizing radiation effects in semiconductors, radiation hardening of devices, and use of modeling codes for physics and engineering instruction. Tel. 937-255-3636 x4600 (DSN 785-3636 x4600), email: James.Petrosky@afit.edu.

POHL, ANTONY J., Maj, Instructor of Statistics, Department of Mathematics and Statistics, AFIT Appointment Date: 2001, (AFIT/ENC); BA, University of St. Thomas, 1991; MS, Air Force Institute of Technology, 1995; PhD candidate, Texas A&M University. Maj Pohl's research interests include tolerance intervals and calibration. 937-255-3636 x4516 (DSN 785-3636 x4516), email: Antony.Pohl@afit.edu.

POTOCZNY, HENRY B., Professor of Computer Science, Department of Electrical and Computer Engineering, AFIT Appointment Date: 1981 (AFIT/ENG); BA, La Salle University, 1965; MA, University of Kentucky, 1967; PhD, University of Kentucky, 1969. Dr. Potoczny's interests include logic and number theory, specifically, novel methods of factoring large integers with a view to cracking various public key ciphersystems. Tel. 937-255-6565 x4282 (DSN 785-6565 x4282), email: Henry.Potoczny@afit.edu.

PYATI, VITTAL P., Professor Emeritus of Electrical Engineering, Department of Electrical and Computer Engineering, (AFIT/ENG); BE, University of Madras, India, 1953; MSEE, Marquette University, 1962; PhD, Electrical Engineering, University of Michigan, 1966. Dr. Pyati's fields of expertise include electromagnetics, radar, low observables, and electronic warfare. Dr. Pyati has authored over 40 publications in journals and DOD Conferences. He has been a consultant to various Air Force organizations. Tel. 937-255-2024 (DSN 785-2024), email: Vittal.Pyati@afit.edu.

QUINN, DENNIS W., Professor of Mathematics, Department of Mathematics and Statistics, AFIT Appointment Date: 1974, (AFIT/ENC); BA, Mathematics, University of Delaware, 1969; MS, Applied Mathematics, University of Delaware, 1971; PhD, Applied Mathematics, University of Delaware, 1973. Dr. Quinn's fields of expertise include numerical methods, finite elements, finite differences, integral equation methods, numerical analysis, functional analysis, system identification, and applied mathematics. Dr. Quinn has advised several MS students in modeling toxic chemical exposure. Dr. Quinn has published papers dealing with integral and finite element solutions of acoustic problems, using the telegrapher's equation to model lightning, using the method of characteristics in cancer risk assessment, using the diffusion equation to model diffusion through the skin in pharmacokinetic modeling, and using the boundary element method for moving boundary problems. Tel. 937-255-3636 x4522 (DSN 785-3636 x4522), email: Dennis.Quinn@afit.edu.

RAINES, RICHARD A., Director, Center for Information Security Education and Research and Associate Professor of Electrical Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 1994 (AFIT/ENG), BSEE, Florida State University 1985; MS, Computer Engineering, Air Force Institute of Technology, 1987; PhD, Virginia Polytechnic Institute and State University, 1994. His research interests include computer communication networks, satellite communications, performance modeling, information security, and system threat and vulnerability. Tel. 937-255-6565 x4278 (DSN 785-6565 x4278), email: Richard.Raines@afit.edu.

RAQUET, JOHN F., Associate Professor of Electrical Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 1998 (AFIT/ENG); BS, US Air Force Academy, 1989; MS, Massachusetts Institute of Technology, 1991; PhD, University of Calgary, Canada, 1998. Dr. Raquet's areas of interest include Global Positioning System (GPS) precise positioning, non-GPS precision navigation, optically-aided navigation, navigation using signals of opportunity, integration of MEMS-based inertial measurement units with other sensors, autonomous vehicle navigation and control, and electromagnetic interference and mitigation techniques affecting GPS performance. Tel. 937-255-3636 x4580 (DSN 785-3636 x4580), email: John.Raquet@afit.edu.

REEDER, MARK F., Assistant Professor of Aerospace Engineering, AFIT Appointment Date: 2002 (AFIT/ENY); BS, Mechanical Engineering, West Virginia University, 1989; MS, Mechanical Engineering, Ohio State University, 1991; PhD, Mechanical Engineering, Ohio State University, 1994; Prior to accepting a position with AFIT, Dr. Reeder served as an NRC Research Associate at NASA Glenn and subsequently as the manager of Research and Development for a manufacturer of industrial mixing equipment. Dr. Reeder's research interests include all aspects of fluid mechanics with an emphasis on experimental applications involving external aerodynamics, mixing enhancement and propulsion. Recent publications include a characterization of store separation from a cavity using pressure sensitive paint and measurements of a micro air vehicle using a 6-DOF balance. He has been published in a variety of journals including the Journal of Fluid Mechanics, The AIAA Journal, The AIAA Journal of Propulsion and Power, Physics of Fluids, NASA Tech Briefs, and Chemical Engineering Progress. He has three patents to his credit and is a licensed Professional Engineer in the State of Ohio. Dr. Reeder is also a member of ASME and AIAA. Tel. 937-255-3636 x4530 (DSN 785-3636 x4530), email: Mark.Reeder@afit.edu.

REYNOLDS, DANIEL E., Assistant Professor of Statistics, Department of Mathematics and Statistics, AFIT Appointment Date: 1974, (AFIT/ENC); AB, University of Rochester, 1965; MS, Air Force Institute of Technology, 1971; MS, Wright State University, 1983. Professor Reynolds' research interests include management cybernetics, learning theory, and exploring ways computer graphics can support statistical and mathematical education. In 1989, Professor Reynolds received Tau Beta Phi's Outstanding Professor Award. Tel. 937-255-3636 x4526 (DSN 785-3636 x4526), email: Daniel.Reynolds@afit.edu.

RIES, HEIDI R., Associate Professor of Physics, Department of Engineering Physics AFIT Appointment Date: 1999 (AFIT/ENP) and Associate Dean for Research, Graduate School of Engineering and Management (AFIT/ENR) BS, Physics, The Ohio State University, 1982; MS, Physics, The Ohio State University, 1984; PhD, Applied Physics, Old Dominion University, 1987. Dr. Ries' research interests include nonlinear optical materials, electron paramagnetic resonance spectroscopy, and laser processing of materials. Prior to joining the AFIT faculty, Dr Ries served as Director of the Center for Materials Research at Norfolk State University in Norfolk, VA and as Associate Director of the Applied Research Center at the Jefferson Center for Research and Technology Research Park, Newport News, VA. Tel. 937-255-3636, x4544 (DSN 785-3636, x4544), email: Heidi.Ries@afit.edu

ROH, WON B., Professor of Engineering Physics, Department of Engineering Physics, AFIT Appointment Date: 1979 (AFIT/ENP); BS, Seoul National University, 1964; MS, The Ohio State University, 1968; PhD, The Ohio State University, 1973. Professor Roh's research interests span technology areas covering lasers, optics, laser spectroscopy, and nonlinear optics. The applications of the technology areas include laser phasing, beam cleanup and combining, Raman fiber lasers, image processing, phase conjugation, frequency conversion, and optical diagnostics. Professor Roh's research is currently funded by the Directed Energy Directorate of the Air Force Research Laboratory. He has advised 7 PhD and almost 50 MS students during his 26 years on AFIT faculty and published about 50 papers. He is the recipient of the Gage H. Crocker Outstanding Professor Award. Tel. 937-255-3636 x4509 (DSN 785-3636 x4509), email: Won.Roh@afit.edu.

RUGGLES-WRENN, MARINA B., Associate Professor of Aerospace Engineering, Department of Aeronautics and Astronautics, AFIT Appointment Date: 2003 (AFIT/ENY); BS, Polytechnic Institute of New York, 1981; MS Rensselaer Polytechnic Institute, 1983; PhD, Rensselaer Polytechnic Institute, 1987. Dr. Ruggles-Wrenn's interests include experimental investigation of nonlinear and time-dependent material behavior, viscoplasticity, composite materials, nano-composites, and high-temperature structural design methods. Dr. Ruggles-Wrenn has published over 30 technical papers in refereed journals and conference proceedings, over 25 technical reports, and has co-authored 4 books on fatigue, fracture, and high temperature design methods. Dr. Ruggles-Wrenn received several research and best paper awards, as well as the ASME PVPD Distinguished Service Award. She has served as an associate technical editor of the ASME Journal of Pressure Vessel Technology (1996-2002). Dr. Ruggles-Wrenn is a Fellow of the ASME. Tel. 937-255-3636 x4641 (DSN 785-3636 x4641), email: Marina.Ruggles-Wrenn@afit.edu.

SEETHARAMAN, GUNA S., Associate Professor of Computer Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2003 (AFIT/ENG); B.E. in Electronics & Communication Engineering, University of Madras, 1980; M. Tech. in Electrical Engineering, Indian Institute of Technology, 1982; PhD in Electrical and Computer Engineering, University of Miami, 1988. Dr. Seetharaman's areas of expertise are nano and microsystems, digital light processing, 3-D image displays and CMOS / MEMS image sensors, and micro-sensors. Tel. 937-255-3636 x4612 (DSN 785-3636 x4612), email: Guna.Seetharaman@afit.edu.

SHELLEY, MICHAEL L., Professor of Engineering and Environmental Management, Department of Systems and Engineering Management, AFIT Appointment Date: 1996 (AFIT/ENV); BCE, Auburn University, 1974; MS, Virginia Tech, 1975; PhD, Environmental Science and Engineering, University of North Carolina, 1985. Dr. Shelley focuses on system dynamics modeling in analyzing long-term management strategies. His research interests include abiotic and biochemical contaminant fate and transport, physiologically-based pharmacokinetic modeling, and ecological engineering design to optimize mission activity with environmental constraints. Tel. 937-255-3636 x4594 (DSN 785-3636 x4594), email: Michael.Shelley@afit.edu.

SMITH, JEFFREY S., Maj, Assistant Professor of Finance, Department of Systems and Engineering Management, AFIT Appointment Date: 2004 (AFIT/ENV); BA, Economics, University of South Carolina, 1990; MS in Applied Economics, Wright State University, 1995; Ph.D., Economics, University of Tennessee, 2004. Maj Smith's research interests include using environmental valuation methods for DOD applications (specifically using non-market valuation techniques) and government financial analysis. Tel. 937-255-3636 x4566 (DSN 785-3636 x4566), email Jeffrey.Smith@afit.edu.

SMITHTRO, CHRISTOPHER G., Maj, Assistant Professor of Physics, Department of Engineering Physics, AFIT Appointment Date: 2004 (AFIT/ENP); B.S., Harvey Mudd College, 1991; M.S., Air Force Institute of Technology, 1999; Ph.D., Utah State University, 2004. Maj Smithtro's research interests include modeling of the ionosphere and thermosphere, and the transition of basic science results into operational space weather models. He has worked as a space weather forecaster and liaison officer to the NOAA Space Environment Center as well as a weather station commander. He is a member of the American Geophysical Union. Tel. 937-255-3636 x4505 (DSN 785-3636 x4505), email: Christopher.Smithtro@afit.edu.

SPENNY, CURTIS H., Associate Professor of Aerospace and Systems Engineering, Department of Aeronautics and Astronautics, AFIT Appointment Date: 1984 (AFIT/ENY); BSME, University of Cincinnati, 1964; MS, Engineering, UCLA, 1966; PhD, Analytical Mechanics, Harvard University, 1973. Dr. Spenny's research interests include vehicle dynamics and control, robotics, man-in-the-loop control and systems engineering. Dr. Spenny has prior experience at Hughes Aircraft, NASA and the U.S. Department of Transportation, and is a registered professional engineer in the State of Ohio. Tel. 937-255-3069 (DSN 785-3069).

STAATS, RAYMOND W., Lt Col, Assistant Professor of Operations Research, Dept of Operational Sciences, AFIT Appointment Date: 2003 (AFIT/ENS); B.A., Syracuse University, 1988; M.S., Air Force Institute of Technology, 1994; Ph.D., Virginia Polytechnic Institute & State University, 2003. Lt Col Staats' research interests include large-scale optimization, integer programming, and decision analysis, with applications in air transportation and space operations. Tel. 937-255-3636 x4518 (DSN 785-3636 x4518), email: Raymond.Staats@afit.edu.

STEPHEN, ERIC J., Lt Col, Assistant Professor of Aerospace Engineering, Department of Aeronautics and Astronautics, AFIT Appointment Date: 2002 (AFIT/ENY); BS, Purdue University, 1981; MS, AFIT, 1987; PhD, University of Colorado at Boulder, 1992. Lt Col Stephen's research interests include low speed aerodynamics and control of separated flows, aerodynamics applied to various UAVs and MAVs concepts, mobile power generation using wind turbines, and system engineering concepts applied to aircraft design. He has published two articles in the Journal of Aircraft, several conference papers and other DoD publications. Lt Col Stephen was previously assigned to the F-16 SPO, the SBIRS SPO and the Missile Defense Agency. He is a member of the AIAA and INCOSE. Tel. 937-255-3636 x4567 (DSN 785-3636 x4567), email: Eric.Stephen@afit.edu.

SUZUKI, LAURA R. C., Maj, Assistant Professor of Mathematics, Department of Mathematics and Statistics, AFIT Appointment Date: 2003, (AFIT/ENC); BS, Wilkes College, 1983; MS, Air Force Institute of Technology, 1984; PhD, Air Force Institute of Technology, 1998. Maj Suzuki's research interests include wavelet analysis, functional analysis, applied mathematics, and artificial neural networks. Tel. 937-255-6565 x4412 (DSN 785-6565 x4412), email: Laura.Suzuki@afit.edu.

SWARTZ, STEPHEN M., Lt Col, Assistant Professor of Logistics Management, Department of Operational Sciences, AFIT Appointment Date: 1997 (AFIT/ENS); AAS, Community College of the Air Force, 1984; AS, Western Oklahoma State College, 1989; BPA, Embry-Riddle Aeronautical University, 1985; MA, Webster University, 1988; MS, Air Force Institute of Technology, 1991; PhD, Michigan State University, 1999. Lt Col Swartz' research interests include aviation maintenance systems management, optimization of production systems, production management and scheduling, project management and scheduling, dynamic and static modeling, and theory of constraints education. Tel. 937-255-2549 (DSN 785-2549).

TALBERT, MICHAEL L., Lt Col, Interim Head and Assistant Professor of Computer Science, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2003 (AFIT/ENG); BS in Meteorology, North Carolina State University, 1985; MS, Air Force Institute of Technology, 1988; PhD, Virginia Polytechnic Institute & State University, 1995. Lt Col Talbert's areas of interest are database, sensor networks, and information retrieval. Tel. 937-255-3636 x4716 (DSN 785-2024), email: Michael.Talbert@afit.edu.

TEMPLE, MICHAEL A., Associate Professor of Electrical Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 1996 (AFIT/ENG); BSE, Southern Illinois University, 1985; MSE, Southern Illinois University, 1986; PhD, Air Force Institute of Technology, 1993. Dr. Temple's research interests include electromagnetic propagation phenomenology, Adaptive and Interferometric Clutter Erasure (ACE/ICE), High Range Resolution (HRR) radar, precision emitter location, digital and spread spectrum communications, and complex waveform generation and analysis. His sponsored research efforts in Command, Control, Communications and Intelligence (C3I), radar signal/signature processing, and Electronic Warfare (EW), as adopted by and/or transitioned to the DoD and other national agencies, has provided nearly $1M in research and technology benefits. Tel. 937-255-6565 x4279 (DSN 785-6565 x4279), email: Michael.Temple@afit.edu.

TENNEY, CURTIS G., Maj, Assistant Professor of Finance, Department of Systems and Engineering Management, AFIT Appointment Date: 2003 (AFIT/ENV); BS, Economics and BS Electrical Engineering, Oklahoma State University, 1988; MBA, Management, Golden Gate University, 1990; Ph.D., Economics, Oklahoma State University, 2001. Maj Tenney's research interests include the role of cost analysis in the acquisition decision making process, alternative market structures, risk analysis and mitigation, and government financial analysis. Tel. 937 255-3636 x4799 (DSN 785-3636 x4799), email: Curtis.Tenney@afit.edu.

TERZUOLI, ANDREW J. JR., Associate Professor of Electrical Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 1982 (AFIT/ENG); BS, Electrical Engineering, Polytechnic Institute of Brooklyn, 1969; MS, Electrical Engineering, Massachusetts Institute of Technology, 1970; PhD, Electrical Engineering, The Ohio State University, 1982. His research interests include computer model based studies; application of parallel computation, VLSI technology, and RISC architecture to numerical and transform methods; remote sensing, antennas and electromagnetics, machine vision and image processing; automated object recognition; and wave scattering, radar cross section and low observables (stealth) technology. Dr. Terzuoli has published numerous articles. His research is funded by various agencies including Wright, Rome, Phillips and Armstrong Laboratories. Prior to joining AFIT in 1982, Dr. Terzuoli was a research associate at the ElectroScience laboratory at the Ohio State University, and was a member of the technical staff at the Bell Telephone Laboratories in New Jersey. Tel. 937-255-3636 x4717 (DSN 785-3636 x4717), email: Andrew.Terzuoli@afit.edu.

THAL, ALFRED E. JR., Lt Col, Assistant Professor of Engineering and Environmental Management, Department of Systems and Engineering Management, AFIT Appointment Date: 1998 (AFIT/ENV); BS, Civil Engineering, Texas Tech University, 1981; MS, Engineering Management, AFIT, 1985; PhD, Environmental Engineering, University of Oklahoma, 1999. Lt Col Thal's research interests include groundwater flow and remediation technologies, environmental policy and management issues, facility and infrastructure management, engineering management, and contingency readiness and training. Tel. 937-255-3636 x4798 (DSN 785-3636 x4798), email: Al.Thal@afit.edu.

TITUS, NATHAN A., Lt Col, Assistant Professor of Aerospace Engineering, Department of Aeronautics and Astronautics, AFIT Appointment Date: 2004 (AFIT/ENY); BS Aeronautics & Astronautics, University of Washington, 1986; MS Astronautical Engineering, Air Force Institute of Technology, 1992; PhD Astronautical Engineering, Air Force Institute of Technology, 1998. Lt Col Titus' research interests include spacecraft attitude dynamics and control, spacecraft systems, robotic manipulators, nonlinear control, and applied optimal control. His dissertation work investigated nonlinear techniques for the control of a robotic manipulator mounted on a free-flying satellite, with a focus on the management and avoidance of singular configurations. Tel. 937-255-3636 x4597 (DSN 785-3636 x4597), email: Nathan.Titus@afit.edu.

TORVIK, PETER J., Professor Emeritus of Aerospace Engineering and Engineering Mechanics, Department of Aeronautics and Astronautics, (AFIT/ENY); BS, University of Minnesota, 1960; MS, University of Minnesota, 1962; PhD, University of Minnesota, 1965; BA, Wright State University, 1980. Professor Torvik is a specialist in theory of elasticity, wave propagation, shock and vibration, impact damage in aircraft systems, laser-material interactions, and aircraft survivability/ vulnerability. His primary research interests include structural dynamics, specifically, damping, impact, and penetration mechanics. Dr. Torvik is the author of some 60 technical papers and reports and 20 other publications. He served as Head of the Department of Aeronautics and Astronautics, 1980-1990. He is the recipient of the AF Meritorious Civilian Service Award and the AF Exceptional Civilian Service Award. Dr. Torvik is a Fellow of AIAA and also a Fellow of the ASME. Tel. 937-255-3636 x4740 (DSN 785-3636 x4740), email: Peter.Torvik@afit.edu.

TRAGESSER, STEVEN G., Assistant Professor of Aerospace Engineering, Department of Aeronautics and Astronautics, AFIT Appointment Date: 1999 (AFIT/ENY); BSAE, University of Illinois, 1992; MSAE, Purdue University, 1994; PhD, Purdue University, 1997. Prior to joining the AFIT faculty, Dr. Tragesser worked in the Space Guidance and Navigation Section at Draper Laboratory. His research interests include guidance of hypersonic vehicles, trajectory design and optimization, dynamics of tethered spacecraft, and satellite formation flying. Dr. Tragesser has published several refereed journal and conference papers and is a member of AIAA. Tel. 937-255-3069 (DSN 785-3069).

TUTTLE, RONALD F., Associate Professor of Nuclear Engineering and Chair, Measurement and Signature Intelligence (MASINT) Technologies, Department of Engineering Physics, AFIT Appointment Date: 2001 (AFIT/ENP); BS, Chemical Engineering, University of Missouri (Columbia), 1968; MS, Nuclear Engineering, University of Missouri (Columbia), 1970; PhD, Nuclear Engineering, University of Missouri (Columbia), 1980. Dr. Tuttle's research areas are applications of active and passive remote sensing, spectroscopy, diagnostics, and signals processing to problems in intelligence collection and exploitation. Other areas of interest are nuclear weapon effects and space nuclear power systems modeling and mechanics of aerosols. He has published in both unclassified and classified refereed archival journals and conference proceedings. Tel. 937-255-3636 x4536 (DSN 785-3636 x4536), email: Ronald.Tuttle@afit.edu.

VASQUEZ, JUAN R., **Lt Col,** Assistant Professor of Electrical Engineering, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2004 (AFIT/ENG), BSEE, Oklahoma State University, 1987; MSEE, AFIT, 1992, PhD, AFIT, 1998. His research interests include stochastic estimation and control with an emphasis on target tracking. Tel. 937-255-3636 x4919 (DSN 785-3636 x4919), email: Juan.Vasquez@afit.edu.

WEBB, TIMOTHY S., Maj, Assistant Professor of Statistics, Department of Mathematics and Statistics, AFIT Appointment Date: 2002 (AFIT/ENC); BS, United States Air Force Academy, 1988; MS, Air Force Institute of Technology, 1994; PhD, University of Colorado Health Sciences Center, 2003. Maj Webb's research interests include biostatistics, categorical data analysis, and design of experiments. Tel. 937-255-3636 x4678 (DSN 785-3636 x4678), email: Timothy.Webb@afit.edu.

WEEKS, DAVID E., Associate Professor of Physics, Department of Engineering Physics AFIT Appointment Date: 1993 (AFIT/ENP); BA Physics with honors, Colgate University, 1983; MS, Physics, Georgia Institute of Technology, 1985; PhD, Physics, University of Arkansas, 1989. Dr. Weeks' research interests include the development of time dependent wave packet methods to model the quantum mechanics of simple chemical reactions and to compute associated state to state reactive scattering matrix elements. A second area of interest centers on the application of k.p theory together with the envelope function approximation to model the electronic and optical properties of quantum well heterostructures. Tel. 937-255-3636 x4561 (DSN 785-3636 x4561), email: David.Weeks@afit.edu.

WEIR, JEFFERY D., Maj, Assistant Professor of Operations Research, Department of Operational Sciences, AFIT Appointment Date: 2002 (AFIT/ENS); Center for Operational Analysis (COA), Bachelors of Electrical Engineering, Georgia Institute of Technology, 1988; MAS, Embry Riddle Aeronautical University, 1992; MS, Air Force Institute of Technology, 1995; PhD, Georgia Institute of Technology, 2002. Maj Weir's research interests include large-scale optimization, mathematical programming and decision analysis. He is a member of the Institute for Operations Research and Management Science (INFORMS) and the Military Operations Research Society (MORS). Tel. 937-255-3636 x4538 (DSN 785-3636 x4538), email: Jeffery.Weir@afit.edu.

WHITE, EDWARD D., III, Associate Professor of Statistics, Department of Mathematics and Statistics, AFIT Appointment Date: 1998 (AFIT/ENC); BS, University of Tampa, 1990; MAS, Ohio State University, 1991; PhD, Texas A&M University, 1998. Dr. White's research interests include design of experiments, categorical data analysis, biostatistics, and model building. Tel. 937-255-3636 x4540 (DSN 785-3636 x4540), email: Edward.White@afit.edu.

WIESEL, WILLIAM E., JR., Professor of Astronautical Engineering, Department of Aeronautics and Astronautics, AFIT Appointment Date: 1981 (AFIT/ENY); BS, University of Massachusetts, 1970; MS, Harvard University, 1972; PhD, Harvard University, 1974. Dr. Wiesel's research interests include orbital mechanics and astrodynamics, chaotic systems, estimation and control, planetary astronomy, stability theory, and optimal control. Dr. Wiesel is the author of Spaceflight Dynamics, the leading introductory text on astronautical engineering. He has authored over 30 technical papers and has been a member of the department for 25 years. Tel. 937-255-6565 x4312 (DSN 785-6565 x4312), email: William.Wiesel@afit.edu.

WILEY, VICTOR D., Maj, Assistant Professor of Operations Research, Department of Operational Sciences, AFIT Appointment Date: 2001 (AFIT/ENS); Center for Operational Analysis (COA), BS, Texas A&M University, 1991; MS, Air Force Institute of Technology, 1996; PhD, The University of Texas at Austin, 2001. Maj Wiley's research interests include heuristics, metaheuristics, and applications of group theory to metaheuristic search neighborhoods, program management, and systems dynamics. Tel. 937-255-3636 x4601 (DSN 785-3636 x4601), email: Victor.Wiley@afit.edu.

WOLF, PAUL J., Associate Professor of Physics, Department of Engineering Physics, AFIT Appointment Date: 1994 (AFIT/ENP); and Assistant Dean, Graduate School of Engineering and Management, (AFIT/EN); BS, Regis College, 1978; MS, Air Force Institute of Technology, 1979; PhD, Air Force Institute of Technology, 1985. Dr. Wolf's research interests are concentrated in experimental atomic/molecular spectroscopy, reactive and non-reactive collision kinetics, thin film deposition processes by laser with applications toward laser devices, ionospheric and atmospheric chemistry, environmental monitoring, and thin film devices. He has published over 20 papers and advised two PhD and five MS students. Tel. 937-255-3636 x4560 (DSN 785-3636 x4560), email: Paul.Wolf@afit.edu.

WOOD, AIHUA W., Professor of Mathematics, Department of Mathematics and Statistics, AFIT Appointment Date: 1994 (AFIT/ENC); BS, Beijing University, 1984; MS, University of Connecticut, 1988; PhD, University of Connecticut, 1990. Dr. Wood's research interests include elliptic partial differential equations, electromagnetic wave propagation, and finite element methods. Dr. Wood is currently funded by the Air Force Office of Scientific Research to investigate scattering and propagation of electromagnetic waves. Tel. 937-255-3636 x4611 (DSN 785-3636 x4611), email: Aihua.Wood@afit.edu.

WRIGHT, SAMUEL A., Maj, Assistant Professor of Statistics, Department of Mathematics and Statistics, AFIT Appointment Date: 2004 (AFIT/ENC); BS, United States Air Force Academy, 1989; MS, Air Force Institute of Technology, 1995; PhD, Air Force Institute of Technology, 2001. Maj Wright's research interests include statistics, model validation, metric development, and scoring algorithms. Tel. 937-255-3636 x4549 (DSN 785-3636 x4549), email: Samuel.Wright@afit.edu.

YEO, YUNG K., Professor of Physics, Dept of Engineering Physics, AFIT Appointment Date: 1984 (AFIT/ENP); BS, Seoul National University, 1961; PhD, University of Southern California, 1972. Professor Yeo's research interests include solid state physics, especially characterization of the electrical, magnetic, and optical properties of elemental, compound, ternary, and quaternary semiconductors using techniques such as Hall effect measurement, deep level transient spectroscopy, superconducting quantum interference device, cathodoluminescence, and photoluminescence. Professor Yeo has published about 90 articles in archival journals, several technical reports, presented more than 170 papers at professional conferences, and holds one patent. He is a reviewer for the Applied Physics Letters and the Journal of Applied Physics. He is currently funded by the AFOSR to study wide band gap semiconductors such as GaN, AlGaN, and ZnO including dilute magnetic semiconductors. This work involves collaborative effort with the Air Force Research Laboratory and Rutgers University. He has directed the research of five postdoc fellows, fifteen PhD students and twenty MS students. He received the Ezra Kotcher Award for 1990, received the Gage H. Crocker Outstanding Professor Award for 1992, and received General Bernard A. Schriever Award for 1997. Tel. 937-255-3636 x4532 (DSN 785-3636 x4532), email: Yung.Yeo@afit.edu.

YOUNG, JOEL D., Maj, Academic Instructor of Computer Science, Department of Electrical and Computer Engineering, AFIT Appointment Date: 2003 (AFIT/ENG); BS, Worcester Polytechnic Institute, 1990; MS, Air Force Institute of Technology, 1996; PhD, Brown University, 2004. Maj Young's areas of interest include artificial intelligence, machine learning, web search, and computational biology. Tel. 937-255-3636 x4618 (DSN 785-3636 x4618), email: Joel.Young@afit.edu.

APPENDIX B POST-DOCTORAL RESEARCH ASSOCIATES CREDENTIALS

FLEMING, JOHN, Department of Mathematics and Statistics, AFIT Appointment Date: 2002 (AFIT/ENC). Tel. 937-255-3098 (DSN 785-3098).

HUANG, JUNQI, Research Associate in Engineering and Environmental Management**,** Department of Systems and Engineering Management, AFIT Appointment Date: 1997 (AFIT/ENV); BS, Hydrogeology, Hebei Geological College, China, 1982; MS and PhD, Fluid Mechanics in Porous Media, Chinese Academy of Sciences, 1990. Dr. Huang specializes in numerical modeling of flow and transport in porous media. He is also interested in numerical simulation of non-Newtonian fluid flow and electromagnetic scattering. Tel. 937-255-3636 x4412 (DSN 785-3636 x4412), email: Junqi.Huang@afit.edu.

APPENDIX C AFIT RESEARCH CENTER AND GROUP CONTACT INFORMATION

ALL MAILING ADDRESSES:
(Department/Center/Group Name and Symbol)
Air Force Institute of Technology
2950 Hobson Way
Wright Patterson AFB, OH 45433-7765

ALL PHONE NUMBERS:
Commercial area code: (937)

ADMINISTRATIVE CONTACTS

Graduate School of Engineering and Management (AFIT/EN)
Access phone: 937-255-3636, DSN 785-3636
Fax: 937-255-6569, DSN 785-6569
Homepage: http://en.afit.edu

Dean	255-3025
Secretary	255-3636 x4555
Associate Dean	255-4372
Assistant Dean	255-3636 x4560
Secretary	255-3636 x4556

Office of Research and Consulting (AFIT/ENR)
Access Phone: 937-255-3633, DSN 785-3633
Fax: 937-656-7139, DSN 986-7139
http://en.afit.edu/enr/ research@afit.edu

Associate Dean for Research	255-3636 x4544
Director of Sponsored Research	255-3636 x4729
Research Program Assistant	255-3636 x4705
Research Program Assistant	255-3636 x4552
Research Grants Engineer	255-3636 x4707
Sponsor Programs Admin.	255-3636 x4546

CENTER CONTACTS

Center for Directed Energy (CDE)
Homepage: http://en.afit.edu/de/

Director	937-255-3636 x4504
Program Coordinator	937-255-3636 x4706

Center for INFOSEC Education and Research (CISER)
Homepage: http://en.afit.edu/ciser/

Director	937-255-6565 x4278
Program Coordinator	937-255-3636 x4602

Center for Measurement and Signature Intelligence (CMSR)
Homepage: http://en.afit.edu/enp/cmsr/mcp.html

Chair	937-255-3636 x 4536
Program Coordinator	937-431-6606 (ph) 937-431-3811 (fax)

Center for Operational Analysis (COA)
Homepage: http://en.afit.edu/coa/

Director	937-255-6565 x4326
Program Coordinator	937-255-6565 x4251

Center for Systems Engineering (AFIT/SYE)
Education and Training Division
Homepage: http://cse.afit.edu/

Chief	937-255-3355 x3363
Fax	937-255-4981

DEPARTMENTAL CONTACTS

Department of Aeronautical and Astronautical Engineering (AFIT/ENY)
Access Phone: 937-255-3069, DSN 785-3069
Fax: 937-656-7621, DSN 986-7621
Homepage: http://en.afit.edu/eny/

Department Head	255-3636 x4636
Education Technician	255-3636 x4644
Education Technician	255-3636 x4700

Department of Electrical and Computer Engineering (AFIT/ENG)
Access Phone: 937-255-2024, DSN 785-2024
Fax: 937-656-4055, DSN 986-4055
Homepage: http://en.afit.edu/eng/

Department Head	255-2024
Secretary	255-3636 x4633
Education Specialist	255-3636 x4619
Education Technician	255-3636 x4634

Department of Engineering Physics (AFIT/ENP)
Access Phone 937-255-2012, DSN 785-2012
Fax: 937-255-2921, DSN 785-2921
Homepage: http://en.afit.edu/enp/

Department Head	255-3636 x4502
Secretary	255-3636 x4503
Education Technician	255-3636 x4534

Department of Mathematics and Statistics (AFIT/ENC)
Access Phone: 937-255-3098, DSN 785-3098
Fax: 937-656-4413, DSN 986-4413
Homepage: http://en.afit.edu/enc/

Department Head	255-3636 x4519
Education Technician	255-3636 x4520

Department of Operational Sciences (AFIT/ENS)
Access Phone: 937-255-2549, DSN 785-2549
Fax: 937-656-4943 DSN 986-4943
Homepage: http://en.afit.edu/ens/

Department Head	255-3636 x4528
Education Technician	255-3636 x4894
Education Technician	255-3636 x4631

Department of Systems and Engineering Management (AFIT/ENV)
Access Phone: 937-255-2998, DSN 785-2998
Fax: 937-656-4699, DSN 986-4699
Homepage: http://en.afit.edu/env/

Department Head	255-3636 x4591
Education Technician	255-3636 x4632
Education Technician	255-3636 x4629

APPENDIX D ABBREVIATIONS FOR ORGANIZATIONS

There are a number of abbreviations for organizations that are used in this report. This alphabetical listing includes only selected organizations. The department symbols for the Graduate School of Engineering and Management are found in Appendix B.

46 SK/SKE	Air Force Seek Eagle Office (AFSEO)
ACC	Air Combat Command
AETC	Air Education and Training Command
AFCEE	Air Force Center for Environmental Excellence
AFCESA	Air Force Civil Engineer Support Agency
AFIT	Air Force Institute of Technology
AFLMA	Air Force Logistics Management Agency
AFMC	Air Force Materiel Command
AFOTEC	Air Force Operational Test and Evaluation Center
AFRL	Air Force Research Laboratory
AFRL/AFOSR	AFRL/Air Force Office of Scientific Research
AFRL/DE	AFRL/Directed Energy Directorate
AFRL/HE	AFRL/Human Effectiveness Directorate
AFRL/IF	AFRL/Information Directorate
AFRL/ML	AFRL/Materials and Manufacturing Directorate
AFRL/MN	AFLR/Munitions Directorate
AFRL/PR	AFRL/Propulsion Directorate
AFRL/SN	AFRL/Sensors Directorate
AFRL/VA	AFRL/Air Vehicles Directorate
AFRL/VS	AFRL/Space Vehicles Directorate
AFCA	Air Force Communication Agency (AF Command Control Communications & Computer Agency)
AFSC	Air Force Security Agency (AF Security Police Agency)
AFSEO	Air Force Seek Eagle Office (46 SK/SKE)
AFSPC	Air Force Space Command
AFTAC	Air Force Technical Applications Center
AFWA	Air Force Weather Agency (Air Weather Service)
AIA	Air Intelligence Agency
AMC	Air Mobility Command
ARDA	Advanced Research and Development Activity
ASC	Aeronautical Systems Center
AU	Air University
CRADA	Cooperative Research and Development Agreement
DAGSI	Dayton Area Graduate Studies Institute
DE	Directed Energy Directorate
DISA	Defense Information Systems Agency
DoD	Department of Defense
DOE	Department of Energy
DoS	Department of State
ESTCP	Environmental Security Technology Certification Program
HQ AU	Headquarters, Air University
OO-ALC	Ogden Air Logistics Center
NAIC	National Air and Space Intelligence Center (NASIC)
NASIC	National Air and Space Intelligence Center
NSA	National Security Agency

NSSA	National Security Space Architect
NSSO	National Security Space Office
PACAF	Pacific Air Forces
SERDP	Strategic Environmental Research & Development Program
SAF	Secretary of the Air Force
SWC	Space Warfare Center
USAF	United States Air Force

APPENDIX E AFIT HISTORY

The Institute

The Air Force Institute of Technology (AFIT) traces its roots to the early days of powered flight when it was apparent that the progress of military aviation depended upon special education in this new science. Before 1919, aviation officers were educated at the Massachusetts Institute of Technology. Then, in 1919, the Air School of Application was established at McCook Field in Dayton, Ohio, the home of Orville and Wilbur Wright. When Congress authorized creation of the Air Corps in 1926, the School was renamed the Air Corps Engineering School and moved, along with all the operations at McCook field, to Wright Field in 1927. Shortly after Pearl Harbor, the school suspended classes, but reopened as the Army Air Forces Engineering School in 1944 to conduct a series of accelerated courses to meet emergency requirements.

After World War II, in 1946, the Army Air Force Institute of Technology was established as part of the Air Materiel Command and was composed of two colleges: Engineering and Maintenance, and Logistics and Procurement. These colleges were later redesignated the College of Engineering Sciences and the College of Industrial Administration. When the Air Force became a separate service in 1947, the Institute was renamed the Air Force Institute of Technology. That same year, the Air Installation Engineering Special Staff Officer's Course began. In 1948, responsibility for managing officers attending civilian institutions was transferred to the Air Force Institute of Technology.

In 1950, command jurisdiction of the Institute shifted from Air Materiel Command to Air University with headquarters at Maxwell Air Force Base, Alabama. The Institute, however, remained at what is now known as Wright-Patterson Air Force Base. In 1951, the two Air Force Institute of Technology colleges were combined into the Resident College. The Institute established a logistics education program at Wright-Patterson Air Force Base in 1955, and The Ohio State University conducted the first courses on a contract basis. In 1958, the Air Force Institute of Technology began a series of short courses in logistics as part of the Air Force Logistics Command Education Center. Later that year, the School of Logistics became a permanent part of the Air Force Institute of Technology.

In 1954, the 83rd Congress authorized the Commander, Air University, to confer degrees, upon accreditation by a nationally recognized association or authority, to persons who met all requirements for those degrees in the Air Force Institute of Technology Resident College. In October 1954, the Engineering Council for Professional Development accredited the undergraduate Aeronautical and Electrical Engineering program. Since then AFIT has awarded more than 14,000 degrees.

In 1963, the School of Logistics was redesignated the School of Systems and Logistics. The Civil Engineering Center was also redesignated as the Civil Engineering School and later became the Civil Engineer and Services School.

Over the next 30 years, the Institute's organization changed little, but it continued to grow and respond to the changing needs of the Air Force. New programs were developed and others were terminated. As an example, the Institute granted its last baccalaureate degree in 1985. In 1992, the Institute reorganized from three to four resident schools by specifically removing all graduate programs from the School of Systems and Logistics and establishing a new school, the Graduate School of Logistics and Acquisition Management. On October 1, 1999, the Graduate School of Logistics and Acquisition Management and the Graduate School of Engineering were combined to become the Graduate School of Engineering and Management.

In 1995, the Air Force Institute of Technology established its first program to be offered at a distant location. The Air Mobility Program, taught at Fort Dix, New Jersey, is a yearlong program designed to provide officers assigned to the Air Mobility Command the opportunity to further their education in a course of instruction specifically designed to enhance their expertise as operational airlift logistics experts. The first class of 10 students entered in the spring of 1995 and graduated the following May. The program utilizes facilities located at Fort Dix, New Jersey, adjacent to McGuire Air Force Base, home of Air Mobility Command's east coast operations center. Institute instructors travel to the Fort Dix site to teach these courses.

The Institute has long been an active participant in the larger educational community. In 1967, the Air Force Institute of Technology became a member of the Dayton Miami Consortium, which later changed its name to Southwestern Ohio Council for Higher Education. The Council is an association of colleges,

universities, and industrial organizations in the Dayton area, which are united to promote educational advancement. The Institute has traditionally been active in both the council and in other community and inter-institutional programs. In 1995, the Air Force Institute of Technology joined with two other local institutions, Wright State University and the University of Dayton, to form a consortium called the Dayton Area Graduate Studies Institute. This consortium's purpose is to coordinate, integrate, and leverage the resources of the three schools to improve and expand graduate-level educational opportunities in the engineering disciplines. This consortium has since expanded by adding The Ohio State University and the University of Cincinnati as affiliate members.

The Ohio Board of Regents, the educational governing board for the State of Ohio, funds the consortium to provide scholarships for graduate engineering students at the three local institutions. In addition, the Board of Regents provides state funds to encourage collaborative research in support of the Air Force Research Laboratory at Wright-Patterson Air Force Base. Through this program, teams of researchers from the consortium schools are funded to perform research, which supports that laboratory.

As the Air Force Institute of Technology begins its ninth decade of operation, faculty and staff members reflect with pride on the contributions the Institute's graduates have made to engineering, science, technology, medicine, logistics, and management. These immeasurable contributions have been vital to national security.

What started as a school for select officers has grown into a premier educational institution for both officer and enlisted students, international students, Department of Defense civilians, and members of all branches of the armed services. More recently, the Institute welcomed its first enlisted students as part of the class of 2004 and became a new home for in-residence Intermediate Developmental Education students. However, some things never change. The commandant continues to stress excellence in education and research and to move AFIT through the twenty-first century, retaining its flexibility and resourcefulness in accomplishing its mission, just as it has done since its inception over 80 years ago. The future promises to be even more challenging than the past, and the Air Force Institute of Technology is prepared to continue providing the environment and the opportunity for Air Force personnel to develop the professional and technological skills needed to master this dynamic challenge.

Research

Creative, relevant research programs are essential to both graduate education and the continuous modernization of military capability. Consequently, research has been an important element of the educational enterprise throughout AFIT's history, often in collaboration with scientists of the Air Force Research Laboratories co-located at Wright-Patterson Air Force Base and always in support of the Air Force Mission. The implementation of the PhD program at AFIT in 1965 resulted in significant growth of the research activities on the AFIT campus. In March 2001, AFIT opened a dedicated, $8.9 million laboratory facility supporting experimental research in aeronautical engineering, electrical engineering, applied physics and environmental science. In 2002, AFIT formally designated three research centers of excellence: the Center for Directed Energy, the Center for Information Security (INFOSEC) Education and Research (also a National Security Agency Center of Academic Excellence in Information Assurance Education), and the Center for Measurement and Signature Intelligence (MASINT) Studies and Research. AFIT subsequently established the Center for Systems Engineering and, in collaboration with the Air Force Materiel Command and at the direction of Secretary Roche.

APPENDIX F INFORMATION FOR OBTAINING A COPY OF A THESIS

Copies of theses with unlimited distribution may be obtained from either of the following agencies depending on the particular circumstances.

U.S. Government employees, individuals affiliated with a research and development activity within the U.S. Government, or its associated contractors, subcontractors, or grantees, under current U.S. Government contract, can order from:

DEFENSE TECHNICAL INFORMATION CENTER
8725 John J. Kingman Road, STE 0944
Ft Belvoir, VA 22060-6218
Phone: 1-800-225-3842
Website: http://www.dtic.mil/

Private U. S. citizens without a U. S. Government contract can order from:

NATIONAL TECHNICAL INFORMATION SERVICE
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161
Phone: 1-800-553-6847
Website: http://www.ntis.gov

Information needed to obtain a given document: 1) author, 2) title, 3) publication date, and 4) reference to the document as an Air Force Institute of Technology thesis.

General inquiries concerning faculty and student research at the Air Force Institute of Technology may be addressed to:

Office of Research and Consulting (AFIT/ENR)
Air Force Institute of Technology
2950 Hobson Way
Wright Patterson AFB, OH 45433-7765
Phone: 937-255-3633 (DSN 785-3633)
Website: http://www.afit.edu
Email: research@afit.edu

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 074-0188

1. REPORT DATE *(DD-MM-YYYY)*	**2. REPORT TYPE**	**3. DATES COVERED** *(From – To)*
06-04-2005	**Annual Report**	01 Oct 03 – 30 Sep 04

4. TITLE AND SUBTITLE

AIR FORCE INSTITUTE OF TECHNOLOGY RESEARCH REPORT 2004

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)

Office of the Associate Dean for Research and Consulting, Graduate School of Engineering and Management

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAMES(S) AND ADDRESS(S)
Air Force Institute of Technology
Graduate School of Engineering and Management (AFIT/EN)
2950 Hobson Way
WPAFB OH 45433-7765

8. PERFORMING ORGANIZATION REPORT NUMBER

AFIT/EN-TR-05-01

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
Air Force Institute of Technology
Graduate School of Engineering and Management (AFIT/EN)
2950 Hobson Way
WPAFB OH 45433-7765

10. SPONSOR/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

13. SUPPLEMENTARY NOTES

14. ABSTRACT

This report summarizes the research activities of the Air Force Institute of Technology's Graduate School of Engineering and Management. It describes research interests and faculty expertise; lists student theses/dissertations; identifies research sponsors and contributions; and outlines the procedures for contacting the school. Included in the report are: faculty publications, conference presentations, consultations, and funded research projects. Research was conducted in the areas of Aeronautical and Astronautical Engineering, Electrical Engineering and Electro-Optics, Computer Engineering and Computer Science, Systems and Engineering Management, Operational Sciences, and Engineering Physics.

15. SUBJECT TERMS
Air Force Institute of Technology, Research Report 2004

16. SECURITY CLASSIFICATION OF:			**17. LIMITATION OF ABSTRACT**	**18. NUMBER OF PAGES**	**19a. NAME OF RESPONSIBLE PERSON**
REPORT	**ABSTRACT**	**c. THIS PAGE**			Pamela A. Vargas
U	**U**	**U**	**UU**	142	**19b. TELEPHONE NUMBER** *(Include area code)* 937-255-3633, research@afit.edu

Standard Form 298 (Rev: 8-98)
Prescribed by ANSI Std. Z39-18