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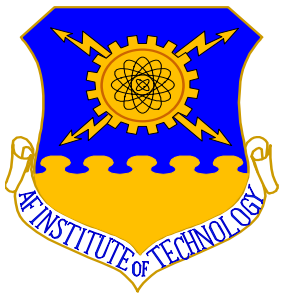

Air Force Institute of Technology
Research Report 2001

Period of Report: 1 October 2000 to 30 September 2001

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

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For additional information, please call or email:

(937) 255-3633
DSN 785-3633
afit.enrsta@afit.edu

or visit the AFIT website: www.afit.edu

Air Force Institute of Technology
Research Report 2001
Foreword

The Graduate School of Engineering and Management at the Air Force Institute of Technology (AFIT) provides responsive, defense focused graduate education and research to help sustain the technological supremacy of the United States Air Force (USAF). AFIT maintains close affiliations with USAF research organizations and operational communities, Department of Defense (DoD) agencies and premier graduate education institutions to ensure continued relevance and high quality of our academic and research programs. AFIT's unique focus provides an outstanding environment for educating future managers and engineers in disciplines critical to anticipated defense needs.

Research experience is an essential element of a quality technical education, providing both in-depth knowledge and broadly applicable critical thinking skills that will be used throughout a graduate's career. In addition to delivering long-term educational advantages, AFIT strives to ensure that the research program provides immediate benefits to the USAF and DoD. AFIT also cooperates with commercial enterprises to ensure timely transfer of new technology to US industry whenever appropriate. AFIT welcomes new opportunities to engage in research projects that are of mutual interest to our customers, faculty, and students.

This Research Report is prepared annually to report on the significant contributions of this institution, to solicit continued involvement and support from Air Force laboratories and DoD agencies, and to encourage new sponsors to participate in AFIT's research program.

MICHAEL L. HEIL, Colonel, USAF
Commandant
Air Force Institute of Technology

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

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1. INTRODUCTION

1.1 OVERVIEW

This Research Report presents the FY01 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 nearly all 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 the Appendix.

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, points of contact are either Dr. Heidi R. Ries, PhD, Associate Dean for Research, (937) 255-3636, ext 4544 (DSN: 785-3636, ext 4544), email afit.enrsta@afit.edu or Mr. Gary M. Koenig, PE, Research Grants Engineer, (937) 255-3636, ext 4546 (DSN: 785-3636, ext 4546), email afit.enrsta@afit.edu

1.2 THE GRADUATE SCHOOL OF ENGINEERING AND MANAGEMENT RESEARCH COLLABORATION

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 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 sends out an annual *Research Activities* mailings in an effort to involve sponsor organizations in research and education. Over 300 responses were received last year from the *Research Activities* mailing, and approximately 5% resulted in research projects. The departments invite research collaboration in their research specialties.

The Department of Mathematics and Statistics invites MS theses suggestions and topics for the following research specialties:

Applied Mathematics
Statistical Analysis
Partial Differential Equations
Numerical Analysis

The Department of Electrical and Computer Engineering invites research topic suggestions and topics for the Electrical Engineering, Computer Engineering and Computer Science programs. The following research specialties are covered by the Department:

Advanced Imaging and Information Processing
Electromagnetics/Low Observables (Stealth)
Guidance, Navigation and Control
Micro Electromechanical Systems
Communications/Networks
Evolutionary Algorithms
Information Systems, Security & Assurance
Parallel/Distributed Processing
Software and Information Engineering, Visualization, and Exploration

The Department of Engineering Physics invites research topic proposals for the Engineering Physics, Nuclear Engineering, Electro-Optics (Electro-Optics shared between Electrical Engineering and Engineering Physics), Materials Science (Shared between Aeronautical Engineering and Engineering Physics), and Meteorology programs. The areas covered by these programs include:

Atmospheric Science
Counterproliferation
Electronic and Photonic Materials
Lasers and Electro-Optics
Modeling and Simulation
Nuclear Weapons and Effects
Remote Sensing & Signature Analysis
Space Weather

The Department of Operational Sciences invites research topics within the areas of operations research and logistics management. The following research specialties are covered by the Department:

Campaign Planning and Execution
Decision and Risk Analysis
Information Operations/Information Warfare
Operational Modeling and Simulation
Operational Problems and Heuristic Modeling
Stochastic Systems Analysis
Transportation and Strategic Mobility
Supply Chain Management

The Department of Systems and Engineering Management is seeking research topic proposals for the Engineering and Environmental Management, Acquisition Management, and Information Resource/Systems Management programs. The following research specialties are covered by the Department:

Applied Environmental Sciences
Contract Management
Cost Analysis
Environmental Systems Analysis and Management
Human Resource Management
Information Resource Management
Quantitative Decision Making
Systems Management
Strategic Purchasing

The Department of Aeronautics and Astronautics invites research collaboration proposals for the Aeronautical, Astronautical and Systems Engineering programs. The Department covers the following research specialties:

Computational Fluid Dynamics
Dynamics and Control
Materials and Structural Analysis
Propulsion Systems
Systems Engineering

If you would like to collaborate with AFIT on research, here are some ideas:

- Look through the credentials and interests of the AFIT faculty members at Appendix A. Match your areas of interest with the research interests of one or more faculty.

- Read through the list of recent graduates' theses titles in this report. You may find one or more AFIT Faculty Advisors who have dealt with a topic in your interest area.

- Contact a faculty member to discuss your idea for a research collaboration. A topic that has strong faculty endorsement and support is much more likely to be chosen by the students than one that lacks faculty advocacy. Topics that fall outside the collective areas of faculty competence cannot be approved, even if chosen. For maximum effectiveness all around, please talk to AFIT faculty before you submit a research suggestion. The faculty member's phone number is found in the Appendix A of this report.

- After talking to an AFIT faculty member, prepare and send your research collaboration proposal as soon as possible. Use the following sample proposal format on the following page, or make up your own. Send your proposal to the faculty member, to the department, or to AFIT/ENR, Bldg 640, 2950 P St., Wright-Patterson AFB OH 45433-7765 or email us at afit.enrsta@afit.edu .

* **S A M P L E** * * * * * * * * * * * * * * * * * * *

PROPOSED RESEARCH TOPIC FORMAT

1. **RESEARCH TOPIC:** Secure Optical Fiber Links Based on Chaotic Cryptography

2. **INDIVIDUAL SPONSOR:** Dr. Mary Jones, AFRL/XN (DSN: 123-4567)
1234 Casimir Creek Road
WPAFB OH 45433-5632

3. **AFIT FACULTY CONTACTED:** Lt Col Tom P. Smith, AFIT/ENG

4. **BACKGROUND/PROBLEM:** The output emission power of semiconductor laser diodes is extremely stable under normal operating conditions for standard device designs. It is, however, possible to design and operate devices in unstable, chaotic regimes. Secure optical communication systems based on standard encryption techniques are essential to current military operations. When combined with new solid-state chaotic light and detection sources, the ability to crack the codes of intercepted communications is, for all practical purposes zero. Arrays of low-cost, high-efficiency, robust microlaser diodes are ideal for this secure communication application.

5. **OBJECTIVE/APPROACH:**

a. Develop numerical models of chaotic microlasers
b. Develop time-based encryption algorithms
c. Design and fabricate arrays of chaotic microlasers
d. Characterize the device and system performance

6. **RESOURCE REQUIREMENTS:**

a. Minimum computational requirement: Sun Microsystems Sparc2 or equivalent
b. Clean room for device fabrication
c. Photonics measurement equipment for device and system characterization

7. **REFERENCES:** None.

* **S A M P L E** * * * * * * * * * * * * * * * * * * *

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 2001 to determine the projects 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 63 questionnaires returned out of the 205 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 Significant Slightly significant Not significant	 30% 55% 13% 2%
Average man-years of effort saved by the sponsors.	1.05
Average cost avoided per thesis/dissertation by the sponsors.	$114,334
Total cost avoided for all theses and dissertations sponsored	$23,438,470
Rank of respondents Colonel (GM-15) Lt Col (GM-14) Major (GM-13) Captain (GS-12) Other	 29% 40% 21% 10% 0%

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 P Street, Wright-Patterson AFB OH 45433-7765, or fax it to (937) 656-7302 (DSN: 986-7302), or just e-mail your answers (only) to 1 to 5 to afit.enrsta@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. These 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 FY01, 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	Refereed Publi-cations	Other Publi-cations	Presen-tations	Funded Research Projects	Substantial Consul-tations	Masters Theses Advised	Doctoral Dissertations Advised
Math (ENC)	10	4	3	7	6	0	1	0
Elec (ENG)	20	15	89	101	34	58	40	2
Phys (ENP)	18	23	10	33	26	2	23	1
Op Sc (ENS)	15	14	14	64	15	5	48	3
Sys & Eng Man (ENV)	15	8	16	15	7	7	57	0
Aero (ENY)	18	18	54	26	32	13	20	0
Total	96	82	186	245	120	85	189	6

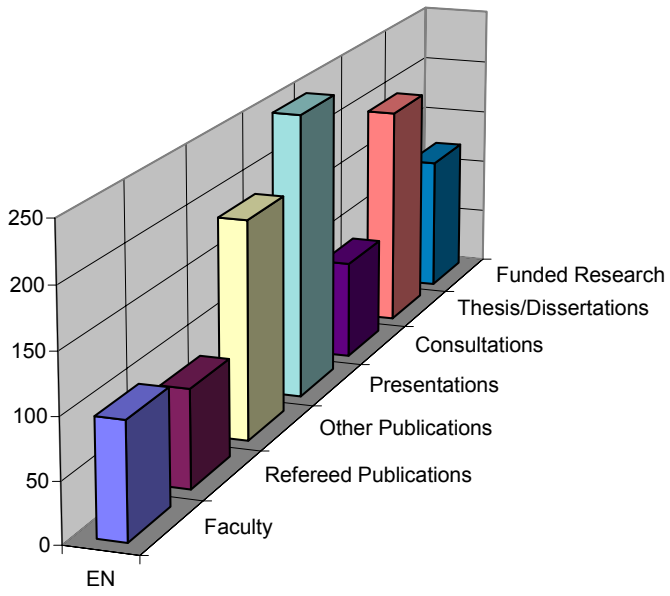


Figure 2.1: Research Output Measures

2.2 RESEARCH AND CONSULTING SPONSORSHIP

As members of an Air Force institution, the faculty of the AFIT focus their research on current problems as well as future systems of the Air Force and other DoD organizations. Evidence of this focus is that 96% of all theses and dissertations listed in Table 1.2 were externally sponsored by Air Force, DoD and Government agencies. In addition, most of the research projects and consultations were carried out for Air Force and DoD units. The data are summarized in Table 2.2 and Figure 2.2.

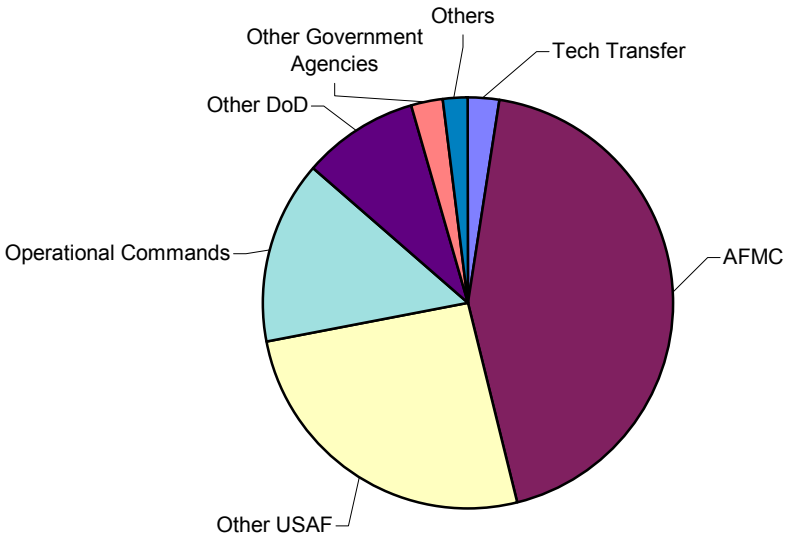


Figure 2.2: Sponsors of AFIT Theses and Dissertations

Table 2.2: Sponsorship of AFIT Research

SPONSOR ORGANIZATION	Masters' Theses	PhD Dissertation	Funded Research	Significant Consultations
AIR FORCE	12		12	9
AIR COMBAT COMMAND	3			2
Air Force Information Warfare Center	1			
UAV Battlelab	2			
AIR EDUCATION & TRAINING COMMAND			2	1
Air Force Institute of Technology	34			2
Air Force Recruiting Service	1			
AIR FORCE MATERIEL COMMAND	9		2	6
Aeronautical Systems Center	5		1	5
Air Force Research Laboratory	47	2	27	36
Air Force Research Lab/Air Force Office of Scientific Research	16	1	41	3
F-22 Systems Program Office	1			
Space & Missile Systems Center	7			
Air Force Flight Test Center	2			
AIR FORCE SPACE COMMAND				
Space Warfare Center	1			
AIR MOBILITY COMMAND	4	1		
USAF FIELD OPERATING AGENCIES				
Air Force Center for Environmental Excellence	4			
Air Force Civil Engineer Support Agency	5			
Air Force Combat Climatology Center	1			
Air Force Logistics Management Agency	1			
Air Force Personnel Center	1			
Air Force Safety Center	1			
Air Force Studies Analyses Agency		2		
Air Force Technical Applications Center	3			
Air Force Weather Agency	3		1	
USAF DIRECT REPORTING UNIT				
Air Force Communication Agency	2		1	3
Air Force Academy	1			
ARMY			1	
US Army Safety Center	1			
DEPARTMENT OF DEFENSE			4	3
Defense Advanced Research Projects Agency	8			2
Government Supply Agency	1			
Joint Warfare Analysis Center	1		1	
National Reconnaissance Office	2			
Office of the Secretary of Defense	3		1	
Undersecretary of Defense for Environmental Security	1			
United States Commander in Chief Pacific Command	1			
USSTRATCOM	1			
DEPARTMENT OF ENERGY	1			
NATIONAL SECURITY AGENCY	4		1	
DAYTON AREA GRADUATE STUDIES INSTITUTE	5		21	5
NATIONAL CONTRACT MANAGEMENT ASSOCIATION	2			
THE OHIO STATE UNIVERSITY	1			
ROYAL AUSTRALIAN AIR FORCE	1			
OTHERS			3	16
TOTALS	200*	6	119	93*

*Multiple Sponsors

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. Table 2.3 and Figure 2.3 summarize outside funding for FY01.

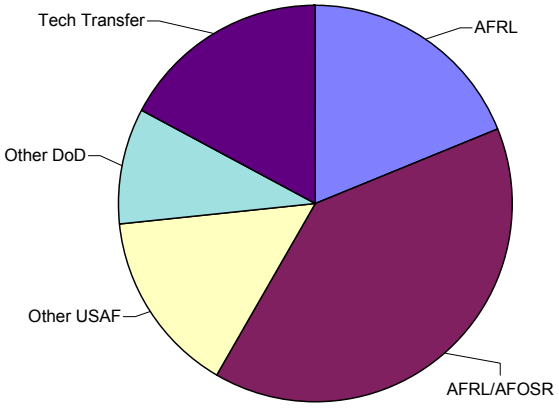
Table 2.3: Sponsoring Organizations for Funded Research

Sponsoring Organization	Funded Projects	Dollars ($)*
Air Force Research Lab (AFRL)	27	$ 612,182
AFRL/Air Force Office Scientific Research (AFOSR)	41	$ 1,291,437
Other USAF	19	$ 480,483
Other DOD	10	$ 311,349
Tech Transfer (CRADAs)	22	$ 560,985
TOTAL	119	$ 3,256,436**

* Includes carry over funding from FY00 of $510,585.

**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 $8 million.

Figure 2.3: FY01 Funded Research



2.4 FACULTY FELLOWS

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.

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

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, Air Force Research Laboratory, Professor, Department of Aeronautics and Astronautics, Fellow of the American Society of Mechanical Engineers.

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.

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.

2.5 PROFESSIONAL CERTIFICATION

Brady, Stephan P., Certified Professional Logistician, Society of Logistics Engineers

Brothers, Heidi S., P.E., Professional Engineer, State of Oregon and California, C44500

Chrissis, James W., Professional Engineer, State of Florida, 0037247

D'Azzo, John J., Professional Engineer, State of Ohio, E-12550

Goltz, Mark N., DEE, Diplomate Environmental Engineer, American Academy of Environmental Engineers, Hazardous Waste Management Specialty Certification

Goltz, Mark N., P.E., Professional Engineer, State of Minnesota, 13978

Greiner, Michael A., Certified Cost Estimator/Analyst, Society of Cost Estimating and Analysis

Gunsch, Gregg H., Professional Engineer, State of Ohio, 56828

Heil, Michael L., Professional Engineer, State of Colorado, 167712

Houpis, Constantine H., Professional Engineer, State of Ohio, E-19084

Jodoin, Vincent J., Professional Engineer, State of Ohio, E-57166

Palazotto, Anthony N., Professional Engineer, State of Ohio, E-39937

Perram, Glen P., Professional Engineer, State of Ohio, E-060534

Quinn, Dennis W., Professional Engineer, State of Ohio, E-056873

Spenny, Curtis H., Professional Engineer, State of Ohio, E-038759

3. CONTRIBUTIONS TO THE AIR FORCE

3.1 DOCTORAL DISSERTATIONS

Arb, Harold A. *Hidden Markov Models for Visual Speech Synthesis in Limited Data.* AFIT/DS/ENG/01-01. Faculty Advisor: Dr. S. C. Gustafson, DSN: 785-3636, ext. 4598. Sponsor: AFRL/HECA.

Denhard, David R. *Theater-Level Stochastic Air-to-Air Engagement Modeling via Event Occurrence Networks Using Piecewise Polynomial Approximation.* AFIT/DS/ENS/01-01. Faculty Advisor: Dr. Jack M. Kloeber, Jr. Sponsor: Air Force Studies and Analyses Agency.

Dolezal, Michael W. *Spectroscopic Constants, Lifetimes and Predissociation Rates for Bi2A(0u+).* AFIT/DS/ENP/01-01. Faculty Advisor: Dr. Glen P. Perram, DSN: 785-3636, ext 4504. Sponsor: AFOSR/NL.

Forsythe, Steven L. *Computer-Based Methods for Constructing Two-Level Fractional-Factorial Experimental Designs with a Requirement Set*. AFIT/DSS/ENS/97M-04. Faculty Advisor: Dr. Richard F. Deckro, DSN 785-6565, ext 4325. Sponsor: Air Force Studies and Analyses Agency.

Huang, Yih-Shiun. *Adaptive and Reconfigurable Flight Control.* AFIT/DS/ENG/01-02. Faculty Advisor: Dr. M. Pachter, DSN: 785-3636, ext 4593. Sponsor: AFRL/VACA.

Wright, Samuel A. *Covalidation of Dissimilarly Structured Models.* AFIT/DS/ENS/00-02. Faculty Advisor: Dr. Kenneth W. Bauer, Jr., DSN: 785-6565, ext 4328. Sponsor: HQ AMC/XPY.

3.2 MASTERS THESES BY PROGRAM

3.2.1 ACQUISITION MANAGEMENT

Borchers, Jason R. *Dollarizing Qualitative Discriminators Used in Best Value Source Selections.* AFIT/GAQ/ENV/01M-01. Faculty Advisor: Lt Col William Stockman, DSN: 785-3636, ext 4796. Sponsor: AFIT/EN.

Brandau, Amanda G. *Factors Influencing Air Force Members' Tolerance of Fraternization.* AFIT/GAQ/ENV/01M-02. Faculty Advisor: Major Paul W. Thurston. Sponsor: AF/JAG.

Corbett, John F. *An Identification and Discussion of Key Success Factors in the Acquisition of Commercial-off-the-shelf (COTS-) Based Systems.* AFIT/GAQ/ENV/01M-03. Faculty Advisor: Lt Col David Petrillo. Sponsor: SMC/DET 11/CZSI.

Elyea, William B. *An Investigation of the Contracting Officer Career Pyramid.* AFIT/GAQ/ENV/01M-04. Faculty Advisor: Lt Col David Petrillo. Sponsor: SAF/AQCX.

Fife, Anthony W. *Predicting Software Development Cost for Command and Control Systems.* AFIT/GAQ/ENV/01M-05. Faculty Advisor: Lt Col William K. Stockman, DSN: 785-336, ext 4798. Sponsor: AFIT/EN.

Gates, Tommy M. *Evaluation of Strategy-Structure Fit of Space and Missile Systems Center Detachment 11.* AFIT/GAQ/ENV/01M-06. Faculty Advisor: Major Michael L. Rehg, DSN: 785-3636, ext 4711. Sponsor: SMC/DET 11.

Harris, Rachael A. *Award Term Incentive Contracting: An Investigation of United States Air Force Strategic Purchasing.* AFIT/GAQ/ENV/01M-07. Faculty Advisor: Lt Col David Petrillo. Sponsor: HQ AFMC/PKPC.

Heaps, Brian J. *An Analysis of the Acquisition Process for Simplified Acquisition of Base Engineering Requirements (SABER) Contracts and its Potential Impact on Contractor Performance.* AFIT/GAQ/ENV/01M-08. Faculty Advisor: Lt Col David Petrillo. Sponsor: AFIT/CEM & SAF/AQC.

Mendoza, Noelia. *Establishing a Career Development Plan for the System Support Manager.* AFIT/GAQ/ENV/01M-09. Faculty Advisor: Major Paul W. Thurston. Sponsor: SMC/DET 11

Porter, Paul H. *Revising R & D Program Budgets When Considering Funding Curtailment With a Weibull Model.* AFIT/GAQ/ENS/01M-01. Faculty Advisor: Lt Col Mark A. Gallagher. Sponsor: OSD PA&E (RA).

Purvis, Christopher D. *Estimating C-17 Operating and Support Costs: Development of a System Dynamics Model.* AFIT/GAQ/ENV/01M-10. Faculty Advisor: Lt Col William L. Stockman, DSN:785-3636, ext 4796. Sponsor: ASC/YCF.

Rueve, Ryan J. *Knowledge Management in the Cost Analysis Knowledge Domain: Generating, Organizing, and Developing Knowledge for Crosschecking Cost Estimates.* AFIT/GAQ/ENV/01M-11. Faculty Advisor: Lt Col David Petrillo. Sponsor: ASC/FMC.

Shariff, Guenever. *Estimating Budget Relationships with A Leontief Input-Output Model.* AFIT/GAQ/ENS/00D-01. Faculty Advisor: Lt Col Mark Gallagher. Sponsor: AFIT/EN.

Shingledecker, Daniel R. *Identification of Critical Roles of Program Managers and Contracting Officers.* AFIT/GAQ/ENV/01M-12. Faculty Advisor: Major Paul W. Thurston. Sponsor: NCMA.

Stephens, Owen D. *Capturing the Policy that Air Force Raters Use When Writing Performance Appraisals on Junior Officers.* AFIT/GAQ/ENV/01M-13. Faculty Advisor: Major Michael T. Rehg, DSN: 785-3636, ext 4711. Sponsor: AFIT/EN.

Tapp, Charles S. *BRAC to the Future: An Analysis of Past Savings from Base Closings.* AFIT/GAQ/ENS/01M-02. Faculty Advisor: Lt Col Mark A. Gallagher. Sponsor: OSD PA&E (RA).

Thrailkill, Roy D. *A Critical Analysis of the Air Force's International Merchant Purchase Authorization Card (IMPAC) Program.* AFIT/GAQ/ENV/01M-14. Faculty Advisor: Lt Col William K. Stockman, DSN: 785-3636, ext 4796. Sponsor: AFLMA.

Tougaw, Ronald L. *A Delphi Expert Assessment of Professional Certification Programs for Contracting Personnel.* AFIT/GAQ/ENV/01M-15. Faculty Advisor: Major Paul W. Thurston. Sponsor: NCMA.

Unger, Eric J. *Relating Initial Budget to Program Growth with Rayleigh and Weibull Models.* AFIT/GAQ/ENS/01M-03. Faculty Advisor: Lt Col Mark A. Gallagher. Sponsor: OSD PA&E (RA).

Ward, William N. *A Case Study Analysis of the Overhead Rate Impact Model Used During the C-5 Maintenance Source Selection.* AFIT/GAQ/ENV/01M-16. Faculty Advisor: Lt Col William Stockman, DSN: 785-3636, ext 4796. Sponsor: AFIT/EN.

Wells, Richard E. *Core Competency Identification: Prescriptions for Air Force Major Commands to Follow.* AFIT/GAQ/ENV/01M-17. Faculty Advisor: Lt Col David Petrillo. Sponsor: HQ AFSC/LGXR.

White, Christopher P. *An Analysis of Total System Performance Responsibility in Air Force Acquisitions*. AFIT/GAQ/ENS/01M-04. Faculty Advisor: Lt Col Alan W. Johnson. Sponsor: SMC Det 11.

3.2.2 AERONAUTICAL ENGINEERING

Drab, Jess W. *Turbine Blade Surface Roughness Effects on Shear Drag and Heat Transfer*. AFIT/GAE/ENY/01M-01. Faculty Advisor: Major Jeffrey P. Bons. DSN: 785-255-6565 x4327. Sponsor: DOE.

Gilbreath, Greg. *Prediction of Pilot Induced Osciliations (P10) Due To Actvator Rate Limiting Using the Open-Loop Onset Point (OLOP) Criterion*. AFIT/GAE/ENY/01M-02. Faculty Advisor: Dr. Bradley S. Liebst, DSN: 785-255-3636 x4636. Sponsor: USAF/TPS/RP.

Gillen, Daniel P. *Cooperative Behavior Schemes For Improving The Effectiveness of Autonomous Wide Area Search Munitions.* AFIT/GAE/ENY/01M-03. Faculty Advisor: Lt Col David R. Jacques, DSN: 785-255-3636 x4723. Sponsor: AFRL/MNGN.

Hartsfield, Carl. *Analysis of the Application of A Triggered Isomer Heat Exchanger As A Replacement For The Combustion Chamber In An Off-The-Shelf Turbojet*. AFIT/GAE/ENY/01M-04. Faculty Advisor: Dr. Paul I. King, DSN: 785-255-3636 x4628. Sponsor: AFRL/DEPA.

Keller, Mark J. *Vibration Suppression of A Rotationally Periodic Structure Using An Adaptive/PPF Control Law*. AFIT/GAE/ENY/01M-05. Faculty Advisor: Major Greg Agnes, DSN: 785-255-6565 x4317. Sponsor: AFOSR/NA.

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Shipman, William C. *The Development of A Finite Element Program To Model High Cycle Fatigue In Isotropic Plates*. AFIT/GAE/ENY/01M-08. Faculty Advisor: Dr. Anthony N. Palazotto, DSN: 785-255-3636 x4599. Sponsor: Department of Aerospace Engineering & Aviation & The Ohio State University.

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Howe, Eric T. *Analysis and Numerical Solution of an Integral Equation Method for Electromagnetic Scattering from a Cavity in a Ground Plane*. AFIT/GAM/ENC/01S-01. Faculty Advisor: Prof Aihua Wood, DSN: 785-3098. Sponsor: AFOSR/NM.

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Bagby, William F. *Spectral and Temporal Characterization of High Temperature Events.* AFIT/GAP/ENP/01M-01. Faculty Advisor: Dr. Glen P. Perram, DSN: 785-3636, ext 4504. Sponsor: AFIT/EN.

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Henry, Jean W. *Use of Quantum Mechanical Calculations to Investigate Small Silicon Carbide Clusters.* AFIT/GAP/ENP/01M-04. Faculty Advisor: Dr. Larry W. Burggraf, DSN: 53636, ext 4507. Sponsor: AFOSR.

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Lockwood, Nathaniel P. *Attenuation and Refraction of an Electromagnetic Wave in an Electron Beam Generated Plasma.* AFT/GAP/ENP/01M-06. Faculty Advisor: Prof. William F. Bailey, DSN: 785-3636, ext 4501. Sponsor: AFIT/EN.

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3.2.5 ASTRONAUTICAL ENGINEERING

Bordner, Ralph E., III *Estimation of Relative Satellite Formation Elements In Near Circular Orbits*. AFIT/GA/ENY/01M-01. Faculty Advisor: Dr. Willim E. Wiesel, DSN: 785-255-6565 x4312. Sponsor: AFRL/VA.

Irvin, David J. *A Study of Linear vs. Nonlinear Control Techniques for The Reconfiguration of Satellite Formations.* AFIT/GA/ENY/01M-02. Faculty Advisor: Lt Col David Jacques, DSN: 785-255-3636 x4723. Sponsor: AFOSR/NM.

Krolikowski, Sean A. *Modification of Position and Attitude Determination of A Test Article Through Photogrammetry to Account For Structural Deformation*. AFIT/GA/ENY/01M-03. Faculty Advisor: Dr. Steven G. Tragesser. Sponsor: AFMC/AEDC.

3.2.6 COMPUTER ENGINEERING

Butler, Sean. *A Flexible Framework for Collaborative Visualization Applications Using Java Spaces.* AFIT/GCE/ENG/01M-01. Faculty Advisor: Lt Col Timothy M. Jacobs, DSN: 785-6565, ext 4279. Sponsor: AFRL/IFTC.

Kilic, Necdet. *Routing of Time-Sensitive Data in Mobile Ad Hoc Networks.* AFIT/GCE/ENG/01M-02. Faculty Advisor: Major Rusty O. Baldwin, DSN: 785-3636, ext 45892. Sponsor: AFCA/ITAI.

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Breighner, Lawrence A. *A Semantic Interface to Scenario Component Reuse in DoD Simulation Systems.* AFIT/GCS/ENG/01M-01. Faculty Advisor: Major Michael L. Talbert. Sponsor: AFRL/SNZW.

Gordin, Duane L. *Analysis of Wide Area Network Management and Congestion Avoidance Schemes.* AFIT/GCS/ENG/01M-02. Faculty Advisor: Maj Richard A. Raines, DSN: 785-336, ext 4715. Sponsor: USCINCPAC/J2125.

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Michaud, Steven R. *Solving the Protein Structure Prediction Problem with Fast Messy Genetic Algorithms (Scaling the Fast Messy Genetic Algorithm to Medium-Sized Peptides by Detecting Secondary Structures).* AFIT/GCS/ENG/01M-06. Faculty Advisor: Dr. Gary B. Lamont, DSN: 785-3636, ext 4718. Sponsor: AFRL/MLPJE.

Nonnweiler, Joel C. *Software Domain Model Integration Methodology for Formal Specifications.* AFIT/GCS.ENG/01M-07. Faculty Advisor: Dr. Thomas C. Hartman. Sponsor: AFOSR/NM.

Omalley, Scott A. *Selecting a Software Engineering Methodology Using Multiobjective Decision Analysis.* AFIT/GCS/ENG/01M-08. Faculty Advisor: Major Scott DeLoach, DSN: 785-3636, ext 4581. Sponsor: AFOSR/NM.

Polk, Phillip. *Using A Distributed Object-Oriented Database Management System in Support of a High-Speed Network Intrusion Detection System Data Repository.* AFIT/GCS/ENG/01M-09. Faculty Advisor: Dr. Gregg H. Gunsch, DSN: 785-6565, ext 4281. Sponsor: AFRL/IFGB.

Ragsdale, Timmy A. *EWIR ML: Provider-Side Universal Dataset Production.* AFIT/GCS/ENG/01M-10. Faculty Advisor: Maj Karl S. Mathias, DSN: 785-3636, ext 4280. Sponsor: AFRL/SNZW.

Self, Athie L. *Design and Specification of Dynamic, Mobile and Reconfigurable Multiagent Systems.* AFIT/GCS/ENG/01M-11. Faculty Advisor: Major Scott DeLoach, DSN: 785-3636, ext 4581. Sponsor: AFRL/HECA.

Sparkman, Clint H. *Transforming Analysis Models into Design Models for the Multiagent Engineering Systems (MASE) Methodology.* AFIT/GCS/ENG/01M-12. Faculty Advisor: Major Scott DeLoach, DSN: 785-3636, ext 4581. Sponsor: AFOSR/NM.

Strong, David M. *Implementation and Analysis of the Parallel Genetic Rule and Classifier Construction Environment.* AFIT/GCS/ENG/01M-14. Faculty Advisor: Dr. Gary LaMont, DSN: 785-3636, ext 4718. Sponsor: AFRL/IFTC.

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Bernhard, William L. *Optical and Etching Studies of Native Aluminum Oxide Layers for Use in Microcavity Photonic Devices.* AFIT/GE/ENG/01M-01. Faculty Advisor: Lt Col James A. Lott, DSN: 785-3636, ext 4576. Sponsor: AFRL/SNDD.

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Bradley, Christopher J. *The Calibration of Bistatic Radar Cross Section Measurements.* AFIT/GE/ENG/01M-03. Faculty Advisor: Dr. Andrew J. Terzuoli, DSN: 785-3636, ext 4717. Sponsor: AFRL/SNAS.

Brown, Richard K. *Image Registration Using Redundant Wavelet Transforms.* AFIT/GE/ENG/01M-21. Faculty Advisor: Major Roger L. Claypoole, Jr., DSN: 785-3636, ext 4625. Sponsor: AFRL/IFED.

Burnette, Daryl J. *Using GPS as a Reference System to Hit a Moving Target.* AFIT/GE/ENG/01M-04. Faculty Advisor: Major John F. Raquet, DSN: 785-3636, ext 4580. Sponsor: DARPA Special Projects Office.

Chan, Kin-Weng. *A Radial Basis Function Neural Network Approach to Two-Color Infrared Missile Detection.* AFIT/GE/ENG/01M-05. Faculty Advisor: Dr. Steven C. Gustafson, DSN: 785-3636, ext 4598. Sponsor: AFRL/SNJM.

Crossley, Benjamin L. *Characterization and Validation of the GP-3 Experimental Radar System.* AFIT/GE/ENG/01M-06. Faculty Advisor: Dr. Michael A. Temple, DSN: 785-3636, ext 4703. Sponsor: AFRL/SNRP.

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Etan, Michael I. *Numerical Study of Optical Delay in Semiconductor Multilayer Distibuted Bragg Reflector and Tunable Microcavity Structures.* AFIT/GE/ENG/01M-09. Faculty Advisor: Lt Col James Lott, DSN: 785-3636, ext 4576. Sponsor: AFRL/SNDD.

Freundl, Kyle J. *Bistatic Cross Section Comparison of Alternate.* AFIT/GE/ENG/01M-10. Faculty Advisor: Dr. Andrew J. Terzuoli, DSN: 785-3636, ext 4717. Sponsor: AFRL/SNA.

Golla, Keven J. *Broadband Application of High Impedance Ground Planes.* AFIT/GE/ENG/01M-11. Faculty Advisor: Major Peter J. Collins. Sponsor: AFRL/SNRP.

Gregga, Jason B. *An Objective Evaluation of Four SAR Image Segmentation Algorithms.* AFIT/GE/ENG/01M-12. Faculty Advisor: Dr. Steven C. Gustafson, DSN: 785-3636, ext 4598. Sponsor: AFRL/SNAT.

Harvala, Daniel N. *A Low Power Application-Specific Integrated Circuit (ASIC) Implementation of Wavelet Transform/Inverse Transform.* AFIT/GE/ENG/01M-14. Faculty Advisor: Lt Col Charles P. Brothers. Sponsor: AFRL/IFTA.

Henderson, Paul E. *Development and Testing of a Multiple Filter Approach for Precise DGPS Positioning and Carrier-Phase Ambiguity Resolution.* AFIT/GE/ENG/01M-15. Faculty Advisor: Major John F. Raquet, DSN: 785-3636, ext 4580. Sponsor: USAF Test Pilot School.

Klein, Randall W. *Wavelet Domain Communication System (WDCS): Deisng, Model, Simulation, and Analysis.* AFIT/GE/ENG/01M-16. Faculty Advisor: Dr. Michael A. Temple, DSN: 785-3636, ext 4703. Sponsor: AFRL/SNRW.

Marcum, Mary K. *Redundant Wavelet-Based Image Restoration Using a Prior Information.* AFIT/GE/ENG/01M-17. Faculty Advisor: Major Roger L. Claypoole, Jr., DSN: 785-3636, ext 4625. Sponsor: NAIC/GTN.

Mendenhall, Michael J. *Wavelet-Based Audio Embedding & Audio/Video Compression.* AFIT/GE/ENG/01M-18. Faculty Advisor: Major Roger L. Claypoole, Jr., DSN: 785-3636, ext 4625. Sponsor: AFRL/IFTA.

Schindeler, Nicolas. *Phugoid Damping Control.* AFIT/GE/ENG/01M-19. Faculty Advisor: Dr. Meir Pachter, DSN: 785-3636, ext 4593. Sponsor: AFRL/VACA.

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Bartholomew, Christian A. *Photoluminescence of Single Quantum Well Structures in Gallium Arsenide.* AFIT/GEO/ENP/01M-01. Faculty Advisor: Lt Col Michael A. Marciniak, DSN: 785-3636, ext 4529. Sponsor: DAGSI.

Hall, Harris J. *Control and Characterization of Line-Addressable Micromirror Arrays.* AFIT/GEO/ENG/01M-01. Faculty Advisor: Major Eric P. Magee, DSN: 785-3636, ext 4614. Sponsor: AFRL/MLPJ.

3.2.10 ENGINEERING AND ENVIRONMENTAL MANAGEMENT

Clark, Lance D. *Analysis and Evaluation of the Macroscopic Organizational Structure of Red Horse.* AFIT/GEE/ENV/01M-01. Faculty Advisor: Lt Col Heidi S. Brothers, DSN 785-3636, ext 4800. Sponsor: ACC/CEX.

Fernandez, Manuel. *Optimization of Palladium-Catalyzed In Situ Destruction of Trichloroethylene-Contaminated Groundwater Using a Genetic Algorithm.* AFIT/GEE/ENV/01M-02. Faculty Advisor: Dr. Mark N. Goltz, DSN: 785-3636, ext 4638. Sponsor: AFCEE/ERT.

Gilpin, Douglas W. *An Analysis of the Effectiveness of Pollution Prevention in Reducing Environmental Compliance Costs.* AFIT/GEE/ENV/01M-03. Faculty Advisor: Lt Col Alfred E. Thal, Jr., DSN: 785-336, ext 4591. Sponsor: HQ USAF/ILEVQ.

Johnson, Max E. *Modeling Biodegradation of Chlorinated Groundwater Contaminants Under Iron-reducing Conditions of a Constructed Wetland: A System Dynamics Approach.* AFIT/GEE/ENV/01M-04. Faculty Advisor: Dr. Michael L. Shelley, DSN: 785-2998. Sponsor: AFRL/MLQ.

Jokinen, David A. *A System Dynamics Approach to Modeling Temperature Effects in Solid Waste.* AFIT/GEE/ENV/01M-5. Faculty Advisor: Dr. Michael L. Shelley, DSN: 785-2998. Sponsor: AFIT/EN.

Kale, William H. *Weapon System Environmental Life Cycle Cost Methodologies and Models.* AFIT/GEE/ENV/01M-06. Faculty Advisor: Lt Col Heidi S. Brothers, DSN 785-3636, ext 4800. Sponsor: ASC/FBJ & DUSD(ES).

Kauth, David A. *Dissolution of Chromium from Inhalable Primer Paint Particles into a Simulated Lung Fluid.* AFIT/GEE/ENV/01M-07. Faculty Advisor: Major Peter T. LaPuma, DSN: 785-6565, ext 4319. Sponsor: AFOSR/NR.

Lo, Steven W. *Differences in Civil Engineer Perceptions of Change Based on Prior Training and Experience.* AFIT/GEE/ENV/01M-08. Faculty Advisor: Lt Col Alfred E. Thal, Jr., DSN: 785-3636, ext 4591. Sponsor: HQ USAF/ILEIO.

Matusak, George J. *Analysis of Factors Influencing Tolerance of Fraternization.* AFIT/GEE/ENV/01M-09. Faculty Advisor: Major Paul Thurston. Sponsor: AF/JAG.

McCleese, David L. *Lifecycle Energy and Air Emission Differences Between Electric and Internal Combustion Vehicles.* AFIT/GEE/ENV/01M-10. Faculty Advisor: Major Peter T. LaPuma, DSN: 785-6565, ext 4319. Sponsor: AFVSPO.

Novy, David B. *Chromate Content Bias as a Function of Particle Size in Aircraft Primer Paint Overspray.* AFIT/GEE/ENV/01M-12. Faculty Advisor: Major Peter T. LaPuma, DSN: 785-6565, ext 4319. Sponsor: AFOSR/NR.

Obruba, Patrick J. *Predictability, Work-Family Conflict, and Intent to Stay: An Air Force Case Study.* AFIT/GEE/ENV/01M-13. Faculty Advisor: Major Michael T. Rehg, DSN: 785-3636, ext 4711. Sponsor: AFIT/EN.

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Recker, Benjamin C. *Determining the Value of Groundwater Contamination Source Removal: A Methodology.* AFIT/GEE/ENV/01M-15. Faculty Advisor: Dr. Mark N. Goltz, DSN: 785-3636, ext 4638. Sponsor: AFCEE/ERT.

Richter, Laurie K. *Factors Affecting Exchange Relationships Among Subordinates and Supervisors: A Study of Military Officers.* AFIT/GEE/ENV/01M-16. Faculty Advisor: Major Michael Rehg, DSN: 785-3636, ext 4711. Sponsor: AFCESA/CEX.

Roberts, Randall L. *Modeling Chlorinated Ethene Removal in the Methanogenic Zone of Constructed Wetlands: A System Dynamics Approach.* AFIT/GEE/ENV/01M-17. Faculty Advisor: Dr. Michael L. Shelley, DSN: 785-3636, ext 4594. Sponsor: AFRL/MLQ.

Schroeder, Chad F. *Effects on the Red-Cockaded Woodpecker from Various Spatial and Temporal Applications of Management Practices.* AFIT/GEE/ENV/01M-18. Faculty Advisor: Dr. Michael L. Shelley, DSN: 785-3636, ext 4594. Sponsor: 20 CES/CEV.

Shoviak, Mark J. *Decision Analysis Methodology to Evaluate Integrated Solid Waste Management Alternatives for a Remote Alaskan Air Station.* AFIT/GEE/ENV/01M-20. Faculty Advisor: Lt Col Alfred E. Thal, Jr., DSN: 785-3636, ext 4591. Sponsor: 611 CES/ENV.

Stoppel, Christopher M. *A Model for Palladium Catalyzed Destruction of Chlorinated Ethenes in Contaminated Groundwater.* AFIT/GEE/ENV/01M-21. Faculty Advisor: Dr. Mark N. Goltz, DSN: 785-3636, ext 4638. Sponsor: AFCEE/ERT.

Vaira, Rusty J. *An Analysis of Civil Engineer Officer Contingency Training.* AFIT/GEE/ENV/01M-22. Faculty Advisor: Lt Col Al E. Thal, Jr., DSN: 785-3636, ext 4591. Sponsor: Det 1, 823rd Red Horse.

Watson, Karen M. *A Pharmacokinetic Study of the Effects of Stress and Exercise on Chemical Exposure.* AFIT/GEE/ENV/01M-23. Faculty Advisor: Dr. Michael L. Shelley, DSN: 785-3636, ext 4594. Sponsor: AFRL/HEST.

Welborn, Jay A. *Changing Organizations: A Meta-Analysis of Change Implementation Strategies' Effects on Organizational Outcomes.* AFIT/GEE/ENV/01M-24. Faculty Advisor: Major Michael Rehg, DSN: 785-3636, ext 4711. Sponsor: HQ AFCESACEOM.

Young, Harold C. *Quantitative Validation of a Model of Chlorinated Ethene Natural Attenuation.* AFIT/GEE/ENV/01M-25. Faculty Advisor: Dr Mark Goltz, DSN: 785-33, ext 438. Sponsor: AFCEE/ERT.

3.2.11 INFORMATION RESOURCE MANAGEMENT

Autrey, Elizabeth A. *The Effect of Contextual-Based Training on Artifact-Based Deception Detection.* AFIT/GIR/ENV/01M-15. Faculty Advisor: Lt Col David P. Biros, DSN 785-3636, ext 4826. Sponsor: AFOSR.

Autrey, Jon C. *The Influence of Framing Effects on Perceived Ease of Use, Perceived Usefulness, and Behavioral Intention in Information Technology Systems.* AFIT/GIR/ENV/01M-01. Faculty Advisor: Major Michael G. Morris. Sponsor: AFMC/SCDX.

Barelka, Alexander J. *An Evaluation of Information Technology (IT) Outsourcing Determinants within the Department of Defense (DoD).* AFIT/GIR/ENV/01M-02. Faculty Advisor: Major Michael G. Morris. Sponsor: National Reconnaissance Office.

Bennett, Sheila G. *A Process for Vectoring Offensive Information Warfare as a Primary Weapon Option within the United States Air Force.* AFIT/GIR/ENS/01M-01. Faculty Advisor: Dr. Richard Deckro, DSN: 785-6565, ext 4325. Sponsor: Institute for National Security Studies, 39th Information Operations Squadron & 23rd Information Operations Squadron.

Bower, William D. *Development of a Decision Framework for Knowledge Management Projects.* AFIT/GIR/ENV/01M-03. Faculty Advisor: Dr. Alan R. Heminger, DSN: 785-3636, ext 4797. Sponsor: AF-CIO (PDAS/PIM).

Daigle, Richard C. *An Analysis of the Computer and Network Attack Taxonomy.* AFIT/GIR/ENV/01M-04. Faculty Advisor: Dr. Alan R. Heminger, DSN: 785-3636, ext 4797. Sponsor: AFIWC/IOT.

Denney, Gary D. *Influence of Feedback and Comment Labels on Information Sharing in a Computer Mediated Collaborative Environment.* AFIT/GIR/ENV/01M-05. Faculty Advisor: Major Paul W. Thurston. Sponsor: AFIT/EN.

Eppich, Todd G. *Towards Cognitively Based Intrusion Detection.* AFIT/GIR/ENV/01M-06. Faculty Advisor: Lt Col David P. Biros, DSN: 785-3636, ext 4826. Sponsor: AFRL/HEC & AFIWC/IOTN.

Fields, Gregory S. *The Effect of External Safeguards on Human-Information System Trust in an Information Warfare Environment.* AFIT/GIR/ENV/01M-07. Faculty Advisor: Lt Col David P. Biros, DSN: 785-3636, ext 4826. Sponsor: AFOSR & AFRL/HEAI.

Franke, Albert E. *Comparative Analysis of Traditional Versus Computer-Based Survey Instrument Response.* AFIT/GIR/ENV/01M-08. Faculty Advisor: Major Mark A. Ward, DSN: 785-3636, ext 3329. Sponsor: HQ AFPC/DPSAS.

Hartmann, Robert E. *Influence of Personality Type and Anonymity on Participation in a Group Support System.* AFIT/GIR/ENV/01M-09. Faculty Advisor: Major Michael G. Morris. Sponsor: AFIT/EN.

Kelley, Don M. *A Delphi Assessment of the Digital Rosetta Stone Model.* AFIT/GIR/ENV/01M-10. Faculty Advisor: Dr. Alan R. Heminger, DSN: 785-336, ext 4797. Sponsor: 88 WS/WEA.

Langhals, Brent T. *The Affect of Varying Arousal Methods Upon Vigilance and Error Detection in an Automated Command and Control Environment.* AFIT/GIR/ENV/01M-11. Faculty Advisor: Lt Col David P. Biros, DSN: 785-3636, ext 4826. Sponsor: AFOSR.

Phelps, Orval E. *Information Security: Securing Smart Cards with Iris Recognition.* AFIT/GIR/ENG/01M-01. Faculty Advisor: Dr. Henry B. Potoczny, DSN: 785-6565,ext 4282. Sponsor: GSA-ME.

Sylvester, Robert A. *Influence of Anonymity in a Group Problem-Solving Environment.* AFIT/GIR/ENV/01M-12. Faculty Advisor: Major Paul W. Thurston. Sponsor: AFIT/EN.

Tait, Steven W. *The Effects of Budgetary Constraints, Multiple Strategy Selection, and Rationality on Equilibrium Attainment in an Information Warfare Simulation.* AFIT/GIR/ENV/01M-13. Faculty Advisor: Lt Col David P. Biros, DSN: 785-3636, ext 4826. Sponsor: AFIT/EN.

Thompson, Kevin V. *GSS Technology as a Moderator of Influence and Perceived Expertise.* AFIT/GIR/ENV/01M-14. Faculty Advisor: Major Michael Morris. Sponsor: AFIT/EN.

3.2.12 LOGISTICS MANAGEMENT

Anaya, Victor A. *Analysis of the Next Generation Small Loader (NGSL) in Reducing the Mobility Footprint.* AFIT/GLM/ENS/01M-01. Faculty Advisor: Dr. William A. Cunningham, DSN: 785-6565, ext 4283. Sponsor: AMC/XPRS.

Antoine, Richard M. *Integer Approximation of Real Valued Preference Curves.* AFIT/GLM/ENS/01J-01. Faculty Advisor: Lt Col Alan W. Johnson. Sponsor: DARPA/ISO.

Boone, Christopher. *Development of an Instrument to Identify Unique Supply Officer Knowledge.* AFIT/GLM/ENS/01M-03. Faculty Advisor: Major Marvin A. Arostegui. Sponsor: Deputy Chief of Staff for Installations & Logistics.

Burghard, Darrell O. *Logistics Transformation: Centralizing Air Force Logistics Information Command and Control.* AFIT/GLM/ENS/01M-04. Faculty Advisor: Major Marvin A. Arostegui. Sponsor: HQ AFMC/LGX.

Buyukacar, Murat V. *Effects of Alternative Performance Criteria Upon Composition of Air Transportable Spar Parts Kits.* AFIT/GLM/ENS/01M-05. Faculty Advisor: Lt Col Alan Johnson. Sponsor: AFIT/EN.

Colvard, Michael J. *An Analysis of the Interaction Between the J3 and J4 War Planning Staffs During the Phases of Crisis Action Planning.* AFIT/GLM/ENS/01M-06. Faculty Advisor: Lt Col Stephen M. Swartz, DSN: 785-6565, ext 4285. Sponsor: DARPA/ISO.

Commenator, Mark A. *Aircraft Maintenance Performance: The Effects of the Functional Decentralization of On-Equipment Maintenance.* AFIT/GLM/ENS/01M-07. Faculty Advisor: Major Stephan P. Brady, DSN: 785-6565, ext 4367. Sponsor: AFIT/EN.

Downing, Jonathan G. *United States Air Force Graduate Degrees from 1990 to 2000: A Comparison.* AFIT/GLM/ENV/01M-01. Faculty Advisor: Major Mark A. Ward, DSN: 785-3636, ext 4742. Sponsor: AFIT/EN.

Filcek, Paul G. *A Quantitative Decision Support Model to Aid Selection of Combat Aircraft Force Mixes for Contingency Deployment.* AFIT/GLM/ENS/01M-10. Faculty Advisor: Lt Col Stephen M. Swartz, DSN: 785-6565, ext 4285. Sponsor: DARPA/ISO.

Goddard, Matthew W. *Estimating Deployed Airlift and Equipment Requirements for F-16 Aircraft in Support of the Advanced Logistics Project.* AFIT/GLM/ENS/01M-11. Faculty Advisor: Lt Col Stephen M. Swartz, DSN: 785-6565, ext 4285. Sponsor: DARPA/ISO.

Hester, Ian R. *Analysis of the Effect of Centralizing Management of Mobility Readiness Spares Package Assets.* AFIT/GLM/ENS/01M-12. Faculty Advisor: Major Marvin A. Arostegui. Sponsor: HQ USAF/ILS.

Hunn, Heather M. *Factors Influencing the Air Force Cycle Ergometry Fitness Assessment.* AFIT/GLM/ENV/01M-02. Faculty Advisor: Major Peter LaPuma, DSN: 785-6565, ext 4319. Sponsor: 311 HSW/YAMAS.

Ketchum, Janette D. *Evaluation of the Air Force's Alternative Fuel Vehicle Program in Complying with Executive Order 13149.* AFIT/GLM/ENS/01M-13. Faculty Advisor: Dr. William A. Cunningham, DSN: 785-6565, ext 4283. Sponsor: AFIT/EN.

Lavadour, Justin W. *Pitfalls of the A-76 Process.* AFIT/GLM/ENS/01M-14. Faculty Advisor: Dr. William A. Cunningham, DSN: 785-6565, ext 4283. Sponsor: AFIT/EN.

Mackenna, James A. *Requirements-Based Methodology for Determining Age Inventory Levels.* AFIT/GLM/ENS/01M-15. Faculty Advisor: Lt Col Raymond R. Hill, DSN: 785-6565, ext 4323. Sponsor: HQ/ AMC/LGBEA, AFRL/HES & ASC/ENMS.

Martinez, Steven L. *The Effect of Improving the Logistics Pipeline on Supply Support of Aerospace Expeditionary Forces.* AFIT/GLM/ENS/01M-16. Faculty Advisor: Major Marvin A. Arostegui. Sponsor: HQ USAF/ILS.

Masciulli, Jason L. *A Cost Comparison Between Modes in the Shipment of Mission Capable Parts within the Continental United States.* AFIT/GLM/ENS/01M-17. Faculty Advisor: Dr. William A. Cunningham, DSN: 785-6565, ext 4283. Sponsor: AFIT/EN.

Oliver, Steven A. *Forecasting Readiness: Using Regression to Predict the Mission Capability of Air Force F-16 Fighter Aircraft.* AFIT/GLM/ENS/01M-18. Faculty Advisor: Lt Col Alan Johnson. Sponsor: AF/ILMY.

Sanches, Paulo J. *Determining an Optimal Reparable Supply Kit for Deployment of a Tactical Radar System.* AFIT/GLM/ENS/01M-19. Faculty Advisor: Lt Col Stephen M. Swartz, DSN: 785-6565, ext 4285. Sponsor: AFIT/EN.

Sandoval, Robert D. *An Analysis of Reliability Improvement Costs During the Engineering and Development Phase of Fighter Aircraft.* AFIT/GLM/ENS/01M-20. Faculty Advisor: Lt Col Alan W. Johnson. Sponsor: AFIT/EN.

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Wakefield, David J. *Identification of Preferred Operational Plan Force Mixes Using a Multiobjective Methodology to Optimize Resource Suitability and Lift Cost.* AFIT/GLM/ENS/01M-24. Faculty Advisor: Lt Col Alan W. Johnson. Sponsor: DARPA/ISO.

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Avram, Jason. *Fatigue Response of Thin Stiffened Aluminum Cracked Panels Repaired With Bonded* Composite *Patches*. AFIT/GMS/ENY/01M-01. Faculty Advisor: Dr. Shankar Mall, DSN: 785-255-3636 x4587. Sponsor: AFRL/MLSA & AFRL/VASE.

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Budai, Jeffrey W. *Analyzing the Effects of Meteorology on Radar Measured Index of Refraction Structure Parameter.* AFIT/GM/ENP/01M-1. Faculty Advisor: Lt Col Michael K. Walters, DSN: 785-3636, ext 4681. Sponsor: SMC/TMSW.

Early, Stephen A. *Investigation of the Relationship Between Optical Turbulence and Mechanical Turbulence in the Atmosphere.* AFIT/GM/ENP/01M-2. Faculty Advisor: Lt Col Michael K. Walters, DSN: 785-3636, ext 4681. Sponsor: SMC/TM.

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Willingham, Erin C. *Investigation of Gravity Waves via the Rotational Temperature of Hydroxyl Nightglow.* AFIT/GM/ENP/01M-09. Faculty Advisor: Dr. Glen P. Perram, DSN: 785-3636, ext 4504. Sponsor: AFWA/DNT.

3.2.15 NUCLEAR ENGINEERING

Garcia, Fred E. *Aircrew Ionizing Doses From Nuclear Weapon Bursts.* AFIT/GNE/ENP/01M-02. Faculty Advisor: Lt Col (Sel) Vincent J. Jodoin, DSN: 785-3636, ext 4506. Sponsor: USSTRATCOM/J534 & AFOSR/CC.

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Harris, Tim C. *Proliferation Aspects of the Electromagnetic Isotope Separation Programs.* AFIT/GNE/ENP/01M-04. Faculty Advisor: Lt Col (Sel) Vincent J. Jodoin, DSN: 785-3636, ext 4506. Sponsor: AFIT/EN.

Schueneman, Richard A. *Oxidation at Surfaces of Uranium Oxide Particles.* AFIT/GNE/ENP/01M-05. Faculty Advisor: Dr. Larry W. Burggraf, DSN: 785-3636, ext 4507. Sponsor: AFTAC.

Wozniak, Jon A. *Potential Fallout Effects From START Level Nuclear Arsenals*. AFIT/GNE/ENP/00M-3. Faculty Advisor: Major Vincent Jodoin, DSN: 785-3636, ext 4506. Sponsor: AFIT/EN.

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Bal, Hakan. *A Force Structuring Model for a Moderately-Sized NATO Country.* AFIT/GOR/ENS/01M-01. Faculty Advisor: Dr. Richard F. Deckro, DSN: 785-6565, ext 4325. Sponsor: Turkish AF.

Baltacioglu, Erhan. *The Distributer's Three-Dimensional Pallet-Packing Problem: A Human Intelligence-Based Heuristic Approach.* AFIT/GOR/ENS/01M-02. Faculty Advisor: Dr. James T. Moore, DSN: 785-6565, ext 4337. Sponsor: DAGSI.

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Dulger, Ibrahim. *Multiple Model Adaptive Estimation for Time Series Analysis.* AFIT/GOR/ENS/01M-07. Faculty Advisor: Lt Col Mark A Gallagher. Sponsor: AFIT/EN.

Higdon, James M. *Utility of Experimental Design in Automatic Target Recognition Performance Evaluation.* AFIT/GOR/ENS/01M-08. Faculty Advisor: Dr. Kenneth W. Bauer, DSN: 785-6565, ext 4328. Sponsor: AFRL/SN.

Kleen, Laura J. *Malicious Hackers: A Framework for Analysis and Case Study.* AFIT/GOR/ENS/01M-09. Faculty Advisor: Dr. Richard F. Deckro, DSN: 785-6565, ext 4325. Sponsor: DARPA/ISO/IASET.

Kudo, Terence Y. *Using Statistical Process Control Methods to Classify Pilot Mental Workload.* AFIT/GOR/ENS/01M-10. Faculty Advisor: Major Jeffrey W. Lanning, DSN: 785-6565, ext 4324. Sponsor: AFRL/HECP.

Malley, Michael E. *A Methodology for Simulating the Joint Strike Fighter's Prognostics and Health Management System.* AFIT/GOR/ENS/01M-11. Faculty Advisor: Lt Col J. O. Miller, DSN: 785-6565, ext 4326. Sponsor: DAGSI.

Noel, Jeremy B. *Pilot Mental Workload Calibration.* AFIT/GOR/ENS/01M-12. Faculty Advisor: Dr. Kenneth W. Bauer, DSN: 785-6565, ext 4324. Sponsor: AFRL/HECP.

Pinkstaff, Michael S. *An Approach to Disrupting Communication Networks.* AFIT/GOR/ENS/01M-13. Faculty Advisor: Dr. Richard Deckro, DSN: 785-6565, ext 4325. Sponsor: DIRNSA.

Shelton, Sarah E. *Selecting Optimal Control Portfolios to Improve Army Aviation Safety.* AFIT/GOR/ENS/01M-14. Faculty Advisor: Dr. James W. Chrissis, DSN: 785-6565, ext 4338. Sponsor: US Army Safety Center.

Tarman, Gurhan. *A Verification and Validation Assessment of Rapid Availability Prototyping for Testing Operational Readiness.* AFIT/GOR/ENS/01M-15. Faculty Advisor: Capt Stephen P. Chambal, DSN: 785-6565, ext 4314. Sponsor: AFIT/EN.

Tekelioglu, Umit H. *A Reactive Tabu Search Metaheuristic Extension of the Air Refueling Tanker Assignment Problem.* AFIT/GOR/ENS/01M-16. Faculty Advisor: Dr James T. Moore, DSN: 785-6565, ext 4337. Sponsor: HQ AMC/XPY.

Tekin, Hakan. *Minimum Distance Estimation for Time Series Analysis with Little Data.* AFIT/GOR/ENS/01M-17. Faculty Advisor: Lt Col Mark A. Gallagher. Sponsor: AFIT/EN.

Williams, Jason L. *Identifing Demand Indicators for Air Force Recruiting Service with Discriminant Analysis.* AFIT/GOR/ENS/01M-18. Faculty Advisor: Dr. Kenneth W. Bauer, DSN: 785-6565, ext 4324. Sponsor: AFRS/RSOAM.

Yay, Cihangir. *Technology Selection for Enhancing F-16 Capability: An Analysis Using Value Focused Thinking.* AFIT/GOR/ENS/01M-19. Faculty Advisor: Capt Stephen P. Chambal, DSN: 785-6565, ext 4314. Sponsor: F-22 ACCSO-A.

3.2.17 SPACE OPERATIONS

Cook, Dayne G. *Solar Radiation Pressure Modeling Issues For High Altitude Satellites*. AFIT/GSO/ENY/01M-01. Faculty Advisor: Dr. Steven G. Tragesser, DSN: 785-255-6565 x4286. Sponsor: HQ SWC/AE.

Davis, Donald J. *Environmental Disturbance Modeling For Large Inflatable Space Structures*. AFIT/GSO/ENY/01M-02. Faculty Advisor: Major Gregory S. Agnes, DSN: 785-255-6565 x4317. Sponsor: AFOSR/NA.

Galbreath, Charles S. *Quality Initiatives In The Air Force Development of Reusable Launch Vehicles,* AFIT/GSO/ENY/01M-03. Faculty Advisor: Dr. Milton Franke, DSN: 785-255-3636 x4720. Sponsor: AFRL/MLM.

Oldenburg, James. *In Orbit Basing of An Anti-Satellite Mission*, AFIT/GSO/ENY/01M-04, Faculty Advisor: Dr. William E. Wiesel Jr., DSN: 785-255-6565 x4312. Sponsor: SMC/XRD.

Pollock, Peter R. *A Model to Predict Diffraction Attenuation Resulting from Signal Propagation Over Terrain in Low Earth Orbit Satellite Systems.* AFIT/GSO/ENG/01M-01. Faculty Advisor: Major Richard A. Raines, DSN: 785-3636, ext 4715. Sponsor: AFIT/EN.

Rogers, Anthony. *Concept Exploration of An Australian Space Launch Capability*. AFIT/GSO/ENY/01M-05. Faculty Advisor: Dr. Steven G. Tragesser, DSN: 785-255-6565 x4286. Sponsor: Deputy Director Long Range Communications.

3.2.18 SYSTEMS ENGINEERING

Bartolomei, Jason E. *The Use of Systems Engineering Processes and Tools To Develop A System Dynamic Simulation Model of Engineering Support During The Development Phase of An Acquisition Program*. AFIT/GSE/ENY/01M-01. Faculty Advisor: Lt Col Price E. Smith, DSN: 785-255-6565 x4318. Sponsor: ASC/EN.

Disebastian, John. *RIGEX: Preliminary Design of A Rigidized Inflatable Get-Away-Special Experiment*. AFIT/GSE/ENY/01M-02. Faculty Advisor: Major Greg Agnes, DSN: 785-255-6565 x4317. Sponsor: NRO.

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Boone, Christopher. *Development of an Instrument to Identify Unique Supply Officer Knowledge.* AFIT/GLM/ENS/01M-03. Faculty Advisor: Major Marvin A. Arostegui. Sponsor: Deputy Chief of Staff for Installations & Logistics.

Bower, William D. *Development of a Decision Framework for Knowledge Management Projects.* AFIT/GIR/ENV/01M-03. Faculty Advisor: Dr. Alan R. Heminger, DSN: 785-3636, ext 4797. Sponsor: AF-CIO (PDAS/PIM).

Brandau, Amanda G. *Factors Influencing Air Force Members' Tolerance of Fraternization.* AFIT/GAQ/ENV/01M-02. Faculty Advisor: Major Paul W. Thurston. Sponsor: AF/JAG.

Elyea, William B. *An Investigation of the Contracting Officer Career Pyramid.* AFIT/GAQ/ENV/01M-04. Faculty Advisor: Lt Col David Petrillo. Sponsor: SAF/AQCX.

Gilpin, Douglas W. *An Analysis of the Effectiveness of Pollution Prevention in Reducing Environmental Compliance Costs.* AFIT/GEE/ENV/01M-03. Faculty Advisor: Lt Col Alfred E. Thal, Jr., DSN: 785-336, ext 4591. Sponsor: HQ USAF/ILEVQ.

*Heaps, Brian J. *An Analysis of the Acquisition Process for Simplified Acquisition of Base Engineering Requirements (SABER) Contracts and its Potential Impact on Contractor Performance.* AFIT/GAQ/ENV/01M-08. Faculty Advisor: Lt Col David Petrillo. Sponsor: AFIT/CEM & SAF/AQC.

Hester, Ian R. *Analysis of the Effect of Centralizing Management of Mobility Readiness Spares Package Assets.* AFIT/GLM/ENS/01M-12. Faculty Advisor: Major Marvin A. Arostegui. Sponsor: HQ USAF/ILS.

Hunn, Heather M. *Factors Influencing the Air Force Cycle Ergometry Fitness Assessment.* AFIT/GLM/ENV/01M-02. Faculty Advisor: Major Peter LaPuma, DSN: 785-6565, ext 4319. Sponsor: 311 HSW/YAMAS.

Lo, Steven W. *Differences in Civil Engineer Perceptions of Change Based on Prior Training and Experience.* AFIT/GEE/ENV/01M-08. Faculty Advisor: Lt Col Alfred E. Thal, Jr., DSN: 785-3636, ext 4591. Sponsor: HQ USAF/ILEIO.

Martinez, Steven L. *The Effect of Improving the Logistics Pipeline on Supply Support of Aerospace Expeditionary Forces.* AFIT/GLM/ENS/01M-16. Faculty Advisor: Major Marvin A. Arostegui. Sponsor: HQ USAF/ILS.

Matusak, George J. *Analysis of Factors Influencing Tolerance of Fraternization.* AFIT/GEE/ENV/01M-09. Faculty Advisor: Major Paul Thurston. Sponsor: AF/JAG.

Oliver, Steven A. *Forecasting Readiness: Using Regression to Predict the Mission Capability of Air Force F-16 Fighter Aircraft.* AFIT/GLM/ENS/01M-18. Faculty Advisor: Lt Col Alan Johnson. Sponsor: AF/ILMY.

3.3.2 AIR COMBAT COMMAND

*Bennett, Sheila G. *A Process for Vectoring Offensive Information Warfare as a Primary Weapon Option Within the United States Air Force.* AFIT/GIR/ENS/01M-01. Faculty Advisor: Dr. Richard Deckro, DSN: 785-6565, ext 4325. Sponsor: Institute for National Security Studies, 39th Information Operations Squadron & 23rd Information Operations Squadron.

Clark, Lance D. *Analysis and Evaluation of the Macroscopic Organizational Structure of Red Horse.* AFIT/GEE/ENV/01M-01. Faculty Advisor: Lt Col Heidi S. Brothers, DSN 785-3636, ext 4800. Sponsor: ACC/CEX.

Vaira, Rusty J. *An Analysis of Civil Engineer Officer Contingency Training.* AFIT/GEE/ENV/01M-22. Faculty Advisor: Lt Col Alfred E. Thal, Jr., DSN: 785-3636, ext 4591. Sponsor: Det 1, 823rd Red Horse.

AIR FORCE INFORMATION WARFARE CENTER

Daigle, Richard C. *An Analysis of the Computer and Network Attack Taxonomy.* AFIT/GIR/ENV/01M-04. Faculty Advisor: Dr. Alan R. Heminger, DSN: 785-3636, ext 4797. Sponsor: AFIWC/IOT.

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Brown, Darin T. *Routing Unmanned Aerial Vehicles While Considering General Restricted Operating Zones.* AFIT/GOR/ENS/01M-04. Faculty Advisor: Lt Col Raymond Hill, DSN: 785-6565, ext 4323. Sponsor: UAV Battlelab.

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3.3.3 AIR EDUCATION AND TRAINING COMMAND

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Bagby, William F. *Spectral and Temporal Characterization of High Temperature Events.* AFIT/GAP/ENP/01M-01. Faculty Advisor: Dr. Glen P. Perram, DSN: 785-3636, ext 4504. Sponsor: AFIT/EN.

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Borchers, Jason R. *Dollarizing Qualitative Discriminators Used in Best Value Source Selections.* AFIT/GAQ/ENV/01M-01. Faculty Advisor: Lt Col William Stockman, DSN: 785-3636, ext 4796. Sponsor: AFIT/EN.

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Commenator, Mark A. *Aircraft Maintenance Performance: The Effects of the Functional Decentralization of On-Equipment Maintenance.* AFIT/GLM/ENS/01M-07. Faculty Advisor: Lt Col Stephan P. Brady, DSN: 785-6565, ext 4367. Sponsor: AFIT/EN.

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*Heaps, Brian J. *An Analysis of the Acquisition Process for Simplified Acquisition of Base Engineering Requirements (SABER) Contracts and its Potential Impact on Contractor Performance.* AFIT/GAQ/ENV/01M-08. Faculty Advisor: Lt Col David Petrillo. Sponsor: AFIT/CEM & SAF/AQC.

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Lockwood, Nathaniel P. *Attenuation and Refraction of an Electromagnetic Wave in an Electron Beam Generated Plasma.* AFT/GAP/ENP/01M-06. Faculty Advisor: Prof. William F. Bailey, DSN: 785-3636, ext 4501. Sponsor: AFIT/EN.

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Sanches, Paulo J. *Determining an Optimal Reparable Supply Kit for Deployment of a Tactical Radar System.* AFIT/GLM/ENS/01M-19. Faculty Advisor: Lt Col Stephen M. Swartz, DSN: 785-6565, ext 4285. Sponsor: AFIT/EN.

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Tait, Steven W. *The Effects of Budgetary Constraints, Multiple Strategy Selection, and Rationality on Equilibrium Attainment in an Information Warfare Simulation.* AFIT/GIR/ENV/01M-13. Faculty Advisor: Lt Col David P. Biros, DSN: 785-3636, ext 4826. Sponsor: AFIT/EN.

Tarman, Gurhan. *A Verification and Validation Assessment of Rapid Availability Prototyping for Testing Operational Readiness.* AFIT/GOR/ENS/01M-15. Faculty Advisor: Capt Stephen P. Chambal, DSN: 785-6565, ext 4314. Sponsor: AFIT/EN.

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Thompson, Kevin V. *GSS Technology as a Moderator of Influence and Perceived Expertise.* AFIT/GIR/ENV/01M-14. Faculty Advisor: Major Michael Morris. Sponsor: AFIT/EN.

Ward, William N. *A Case Study Analysis of the Overhead Rate Impact Model Used During the C-5 Maintenance Source Selection.* AFIT/GAQ/ENV/01M-16. Faculty Advisor: Lt Col William Stockman, DSN: 785-3636, ext 4796. Sponsor: AFIT/EN.

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3.3.4 AIR FORCE MATERIEL COMMAND

Autrey, Jon C. *The Influence of Framing Effects on Perceived Ease of Use, Perceived Usefulness, and Behavioral Intention in Information Technology Systems.* AFIT/GIR/ENV/01M-01. Faculty Advisor: Major Michael G. Morris. Sponsor: AFMC/SCDX.

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F-22 SYSTEMS PROGRAM OFFICE

Yay, Cihangir. *Technology Selection for Enhancing F-16 Capability: An Analysis Using Value Focused Thinking.* AFIT/GOR/ENS/01M-19. Faculty Advisor: Capt Stephen P. Chambal, DSN: 785-6565, ext 4314. Sponsor: F-22 ACCSO-A.

SPACE AND MISSLE SYSTEMS CENTER

Budai, Jeffrey W. *Analyzing the Effects of Meteorology on Radar Measured Index of Refraction Structure Parameter.* AFIT/GM/ENP/01M-1. Faculty Advisor: Lt Col Michael K. Walters, DSN: 785-3636, ext 4681. Sponsor: SMC/TMSW.

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AIR FORCE FLIGHT TEST CENTER

Gilbreath, Greg. *Prediction of Pilot Induced Osciliations (P10) Due To Actvator Rate Limiting Using the Open-Loop Onset Point (OLOP) Criterion*. AFIT/GAE/ENY/01M-02. Faculty Advisor: Dr. Bradley S. Liebst, DSN: 785-255-3636 x4636. Sponsor: USAF/TPS/RP.

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3.3.5 AIR FORCE SPACE COMMAND

SPACE WARFARE CENTER

Cook, Dayne G. *Solar Radiation Pressure Modeling Issues For High Altitude Satellites*. AFIT/GSO/ENY/01M-01. Faculty Advisor: Dr. Steven G. Tragesser, DSN: 785-255-6565 x4286. Sponsor: HQ SWC/AE.

3.3.6 AIR MOBILITY COMMAND

Anaya, Victor A. *Analysis of the Next Generation Small Loader (NGSL) in Reducing the Mobility Footprint.* AFIT/GLM/ENS/01M-01. Faculty Advisor: Dr. William A. Cunningham, DSN: 785-6565, ext 4283. Sponsor: AMC/XPRS.

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AIR FORCE CENTER FOR ENVIRONMENTAL EXCELLENCE

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Venzke, Kenneth C. *Development of Predictors for Cloud-to-Ground Lightning Activity using Atmospheric Stability Indices.* AFIT/GM/ENP/01M-8. Faculty Advisor: Lt Col Ronald P. Lowther, DSN: 785-3636, ext 4645. Sponsor: AFCCC/DOO.

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*Beauregard, Joseph E. *Modeling Information Assurance.* AFIT/GOR/ENS/01M-03. Faculty Advisor: Dr. Richard F. Deckro, DSN: 785-6565, ext 4325. Sponsor: DARPA & AFTAC.

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AIR FORCE WEATHER AGENCY

Green, Bradford S. *Validation and Assessment of DMSP Electron Temperatures in the Topside Ionosphere.* AFIT/GAP/ENP/01M-03. Faculty Advisor: Major Devin J. Della-Rose, DSN: 785-3636, ext 4514. Sponsor: HQAFWA/XOGS.

Keyser, Herbert L. *Validation and Characterization of Ionospheric Densities Measured by DMSP.* AFIT/GAP/ENP/01M-05. Faculty Advisor: Major Devin J. Della-Rose, DSN: 785-3636, ext 4514. Sponsor: HQAFWA/XOGS.

Willingham, Erin C. *Investigation of Gravity Waves via the Rotational Temperature of Hydroxyl Nightglow.* AFIT/GM/ENP/01M-09. Faculty Advisor: Dr. Glen P. Perram, DSN: 785-3636, ext 4504. Sponsor: AFWA./DNT.

3.3.8 USAF DIRECT REPORTING UNITS

AIR FORCE COMMUNICATION AGENCY

Bonner, Robert J. *Using Direct-Sequenced Spread Spectrum in a Wired Local Area Network.* AFIT/GE/ENG/01M-02. Faculty Advisor: Major Rusty O. Baldwin, DSN: 785-3636, ext 4582. Sponsor: AFCA/ITAI.

Kilic, Necdet. *Routing of Time-Sensitive Data in Mobile AD HOC Networks.* AFIT/GCE/ENG/01M-02. Faculty Advisor: Major Rusty O. Baldwin, DSN: 785-3636, ext 45892. Sponsor: AFCA/ITAI.

AIR FORCE ACADEMY

*Bennett, Sheila G. *A Process for Vectoring Offensive Information Warfare as a Primary Weapon Option Within the United States Air Force.* AFIT/GIR/ENS/01M-01. Faculty Advisor: Dr. Richard Deckro, DSN: 785-6565, ext 4325. Sponsor: Institute for National Security Studies, 39th Information Operations Squadron & 23rd Information Operations Squadron.

3.3.9 ARMY

US ARMY SAFETY CENTER

Shelton, Sarah E. *Selecting Optimal Control Portfolios to Improve Army Aviation Safety.* AFIT/GOR/ENS/01M-14. Faculty Advisor: Dr. James W. Chrissis, DSN: 785-6565, ext 4338. Sponsor: US Army Safety Center.

3.3.10 DEPARTMENT OF DEFENSE

DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Antoine, Richard M. *Integer Approximation of Real Valued Preference Curves.* AFIT/GLM/ENS/01J-01. Faculty Advisor: Lt Col Alan W. Johnson. Sponsor: DARPA/ISO.

*Beauregard, Joseph E. *Modeling Information Assurance.* AFIT/GOR/ENS/01M-03. Faculty Advisor: Dr. Richard F. Deckro, DSN: 785-6565, ext 4325. Sponsor: DARPA & AFTAC.

Burnette, Daryl J. *Using GPS as a Reference System to Hit a Moving Target.* AFIT/GE/ENG/01M-04. Faculty Advisor: Major John F. Raquet, DSN: 785-3636, ext 4580. Sponsor: DARPA Special Projets Office.

Colvard, Michael J. *An Analysis of the Interaction Between the J3 and J4 War Planning Staffs During the Phases of Crisis Action Planning.* AFIT/GLM/ENS/01M-06. Faculty Advisor: Lt Col Stephen M. Swartz, DSN: 785-6565, ext 4285. Sponsor: DARPA/ISO.

Filcek, Paul G. *A Quantitative Decision Support Model to Aid Selection of Combat Aircraft Force Mixes for Contingency Deployment.* AFIT/GLM/ENS/01M-10. Faculty Advisor: Lt Col Stephen M. Swartz, DSN: 785-6565, ext 4285. Sponsor: DARPA/ISO.

Goddard, Matthew W. *Estimating Deployed Airlift and Equipment Requirements for F-16 Aircraft in Support of the Advanced Logistics Project.* AFIT/GLM/ENS/01M-11. Faculty Advisor: Lt Col Stephen M. Swartz, DSN: 785-6565, ext 4285. Sponsor: DARPA/ISO.

Kleen, Laura J. *Malicious Hackers: A Framework for Analysis and Case Study.* AFIT/GOR/ENS/01M-09. Faculty Advisor: Dr. Richard F. Deckro, DSN: 785-6565, ext 4325. Sponsor: DARPA/ISO/IASET.

Wakefield, David J. *Identification of Preferred Operational Plan Force Mixes Using a Multiobjective Methodology to Optimize Resource Suitability and Lift Cost.* AFIT/GLM/ENS/01M-24. Faculty Advisor: Lt Col Alan W. Johnson. Sponsor: DARPA/ISO.

GOVERNMENT SUPPLY AGENCY

Phelps, Orval E. *Information Security: Securing Smart Cards with Iris Recognition.* AFIT/GIR/ENG/01M-01. Faculty Advisor: Dr. Henry B. Potoczny, DSN: 785-6565,ext 4282. Sponsor: GSA-ME.

JOINT WARFARE ANALYSIS CENTER

Thomas, Ryan W. *Multicast Algorithms for Mobile Satellite Communication Networks.* AFIT/GCE/ENG/01M-04. Faculty Advisor: Major Richard A. Raines, DSN: 785-3636, ext 4715. Sponsor: Joint Warfare Analysis Center.

NATIONAL RECONNAISSANCE OFFICE

Barelka, Alexander J. *An Evaluation of Information Technology (IT) Outsourcing Determinants within the Department of Defense (DoD).* AFIT/GIR/ENV/01M-02. Faculty Advisor: Major Michael G. Morris. Sponsor: National Reconnaissance Office.

Disebastian, John. *RIGEX: Preliminary Design of A Rigidized Inflatable Get-Away-Special Experiment.* AFIT/GSE/ENY/01M-02. Faculty Advisor: Major Greg Agnes, DSN: 785-255-6565 x4317. Sponsor: NRO.

OFFICE OF SECRETARY OF DEFENSE

Porter, Paul H. *Revising R & D Program Budgets When Considering Funding Curtailment With a Weibull Model.* AFIT/GAQ/ENS/01M-01. Faculty Advisor: Lt Col Mark A. Gallagher. Sponsor: OSD PA&E (RA).

Tapp, Charles S. *BRAC to the Future: An Analysis of Past Savings from Base Closings.* AFIT/GAQ/ENS/01M-02. Faculty Advisor: Lt Col Mark A. Gallagher. Sponsor: OSD PA&E (RA).

Unger, Eric J. *Relating Initial Budget to Program Growth with Rayleigh and Weibull Models.* AFIT/GAQ/ENS/01M-03. Faculty Advisor: Lt Col Mark A. Gallagher. Sponsor: OSD PA&E (RA).

UNDERSECRETARY OF DEFENSE FOR ENVIRONMENTAL SECURITY

*Kale, William H. *Weapon System Environmental Life Cycle Cost Methodologies and Models.* AFIT/GEE/ENV/01M-06. Faculty Advisor: Lt Col Heidi S. Brothers, DSN 785-3636, ext 4800. Sponsor: ASC/FBJ & DUSD(ES).

UNITED STATESCOMMANDER IN CHIEF PACIFIC COMMAND

Gordin, Duane L. *Analysis of Wide Area Network Management and Congestion Avoidance Schemes.* AFIT/GCS/ENG/01M-02. Faculty Advisor: Maj Richard A. Raines, DSN: 785-336, ext 4715. Sponsor: USCINCPAC/J2125.

USSTRATCOM

*Garcia, Fred E. *Aircrew Ionizing Doses From Nuclear Weapon Bursts.* AFIT/GNE/ENP/01M-02. Faculty Advisor: Lt Col (Sel) Vincent J. Jodoin, DSN: 785-3636, ext 4506. Sponsor: USSTRATCOM/J534 & AFOSR/CC.

3.3.11 DEPARTMENT OF ENERGY

Drab, Jess W. *Turbine Blade Surface Roughness Effects on Shear Drag and Heat Transfer.* AFIT/GAE/ENY/01M-01. Faculty Advisor: Major Jeffrey P. Bons. DSN: 785-255-6565 x4327. Sponsor: DOE.

3.3.12 NATIONAL SECURITY AGENCY

Jacobs, Timothy E. *Deelopment of a Radar Object Model in the Electronic Warfare Integrated Reprogramming Domain.* AFIT/GCS/ENG/01M-04. Faculty Advisor: Major Karl S. Mathias, DSN: 785-6565, ext 4716. Sponsor: NAIC/TAER.

Jarrells, Michael F. *The Automatic Identification of Text During the Disassembly of Binary Machine Language.* AFIT/GCS/ENG/01M-05. Faculty Advisor: Dr. Henry B. Potoczny, DSN: 785-6565, ext 4282. Sponsor: NAIC/TAIF.

Marcum, Mary K. *Redundant Wavelet-Based Image Restoration Using a Prior Information.* AFIT/GE/ENG/01M-17. Faculty Advisor: Major Roger L. Claypoole, Jr., DSN: 785-3636, ext 4625. Sponsor: NAIC/GTN.

Pinkstaff, Michael S. *An Approach to Disrupting Communication Networks.* AFIT/GOR/ENS/01M-13. Faculty Advisor: Dr. Richard Deckro, DSN: 785-6565, ext 4325. Sponsor: DIRNSA.

3.3.13 DAYTON AREA GRADUATE STUDIES INSTITUTE

Baltacioglu, Erhan. *The Distributer's Three-Dimensional Pallet-Packing Problem: A Human Intelligence-Based Heuristic Approach.* AFIT/GOR/ENS/01M-02. Faculty Advisor: Dr. James T. Moore, DSN: 785-6565, ext 4337. Sponsor: DAGSI.

Bartholomew, Christian A. *Photoluminescence of Single Quantum Well Structures in Gallium Arsenide.* AFIT/GEO/ENP/01M-01. Faculty Advisor: Lt Col Michael A. Marciniak, DSN: 785-3636, ext 4529. Sponsor: DAGSI.

Bulut, Gokay. *Robust Multi-Scenario Optimization of an Air Expeditionary Force Force Structure Applying Scatter Search to the Combat Forces Assessment Model.* AFIT/GOR/ENS/01M-05. Faculty Advisor: Lt Col Raymond Hill, DSN: 785-6565, ext 4323. Sponsor: DAGSI.

Mckay, Michael R. *Time-Resolved Photoluminescence of InAs/GaInSb Quantum Well Lasers.* AFIT/GAP/ENP/OIJ-02. Faculty Advisor: Lt Col M. A. Marciniak, DSN: 785-3636, ext 4529. Sponsor: DAGSI.

Malley, Michael E. *A Methodology for Simulating the Joint Strike Fighter's Prognostics and Health Management System.* AFIT/GOR/ENS/01M-11. Faculty Advisor: Lt Col J. O. Miller, DSN: 785-6565, ext 4326. Sponsor: DAGSI.

3.3.14 NATIONAL CONTRACT MANAGEMENT ASSOCIATION

Shingledecker, Daniel R. *Identification of Critical Roles of Program Managers and Contracting Officers.* AFIT/GAQ/ENV/01M-12. Faculty Advisor: Major Paul W. Thurston. Sponsor: NCMA.

Tougaw, Ronald L. *A Delphi Expert Assessment of Professional Certification Programs for Contracting Personnel.* AFIT/GAQ/ENV/01M-15. Faculty Advisor: Major Paul W. Thurston. Sponsor: NCMA.

3.3.15 THE OHIO STATE UNIVERSITY

*Shipman, William C. *The Development of A Finite Element Program To Model High Cycle Fatigue In Isotropic Plates*. AFIT/GAE/ENY/01M-08. Faculty Advisor: Dr. Anthony N. Palazotto, DSN: 785-255-3636 x4599. Sponsor: Department of Aerospace Engineering & Aviation, The Ohio State University.

3.3.16 ROYAL AUSTRALIAN AIR FORCE

Rogers, Anthony. *Concept Exploration of An Australian Space Launch Capability*. AFIT/GSO/ENY/01M-05. Faculty Advisor: Dr. Steven G. Tragesser, DSN: 785-255-6565 x4286. Sponsor: Deputy Director Long Range Communications.

3.4 FUNDED RESEARCH PROJECTS

AGNES, Maj GREGORY S., (ENY)

"Experimental Investigation of Active Inflatable Struts," Sponsor: SAF, Funding: $58,413.45.

"Modeling of Highly Compliant Space Structures," Sponsor: AFOSR/NI, Funding: $23,800.00.

"Conformal Membrane Reflectors for Deployable Optics (Joint with Cornerstone Research Group)," Sponsor: SAF/FMBMB-AFOY, Funding: $25,000.00.

"Experimental Investigation of Active Inflatable Struts," Sponsor: SAF/FMBMB-AFOY, Funding: $40,000.00.

"Smart Structures for Vibration Suppression of Optical Surfaces," Sponsor: AFOSR/NA, Funding: $43,795.95.

BALDWIN, Maj RUSTY O., (ENG)

"Technical Support, Air Force Communications Systems Modeling," Sponsor: AFCA/ITAI, Funding: $42,000.00.

BAUER, KENNETH W., (ENS)

"ATR Evaluation through the Synthesis of Multiple Performance Measures," Sponsor: AFRL/SNA, Funding: $28,000.00.

"Pilot Candidate Selection Method (PCSM) Study," Sponsor: AETC/SAS, Funding: $2,000.00.

BIROS, Lt Col DAVID P., (ENV)

"Detecting Deception in the Military Infosphere: Improving and Integrating Human Detection Capabilities with Automated Tools," Sponsor: AFOSR/PIF, Funding: $1,278.20.

BONS, Maj JEFFREY P., (ENY)

"Low Pressure Turbine Separation Control Using Vortex Gen Jets," Sponsor: AFORSR/NI, Funding: $2,283.33.

"Real Surface Effects on Turbine Heat Transfer and Aerodynamic Performance," Sponsor: Mississippi State University, Funding: $40,203.00.

BROTHERS, Lt Col CHARLES P., (ENG)

"VHSIC Hardware Description Language Development Support," Sponsor: AFRL/IFTC, Funding: $15,000.00.

BURGRAFF, LARRY W., (ENP)

"Photothermal Sensor for Multispectral IR Detection," Sponsor: SAF, Funding: $13,025.35.

"Photothermal Sensor for Multi-spectral Detection," Sponsor: SAF/FMBMB-AFOY, Funding: $42,413.00.

"Theoretical Calculations of Chemistry and Photoluminescence Spectroscopy for Adsorbates on SiC Clusters and Surfaces," Sponsor: AFOSR, Funding: $68,326.65.

"Critical Interfacial Issues for Emerging Electronic, Photonic and Magnetic Polymer Based Materials," Sponsor: DAGSI, Funding: $22,137.00.

CANFIELD, Lt Col ROBERT A., (ENY)

"System Design Innovation Using Multidisciplinary Optimization and Simulation," Sponsor: AFOSR/MOA, Funding: $30,983.00.

"Analytical Certification and Multidisciplinary Integration," Sponsor: DAGSI, Funding: $4,366.

CHAMBAL, Capt STEPHEN P., (ENS)

"Memorandum of Agreement Between the C-17 System Program Office and Department of Operational Sciences, Air Force Institute of Technology (AFIT) Strategic Brigade Airdrop Simulation Completion Study," Sponsor: AFMC ASC/YC (AV/FS), Funding: $10,306.22.

"Enhancement and Analysis Upgrade of COBRA Analytical Software," Sponsor: AFOTEC, Funding: $11,000.00.

CHILTON, Lt Col LAWERENCE K., (ENC)

"Finite Element Methods for Finite Elasticity and Elasto-Plasticity," Sponsor: AFOSR/PIF, Funding: $19,194.00.

CUNNINGHAM, WILLIAM A., (ENS)

"Evaluation of a New Fuel Hydrant System for PACAF," Sponsor: AFOSR/PIF, Funding: $6,000.00.

DECKRO, RICHARD F., (ENS)

"Memorandum of Agreement with the Center for Operation Research," Sponsor: NSA, Funding: $20,000.00.

"Modeling Surveillance," Sponsor: SAF, Funding: $0.00.

"Joint Warfare Analysis Center (JWAC) Memorandum of Agreement," Sponsor: DOD JWAC, Funding: $14,040.00.

DELOACH, Maj SCOTT A., (ENG)

"Agent Development Environments for Large-Scale, Multi-Agent, Distributed Mission Planning and Execution in Complex Dynamic Environment," Sponsor: AFOSR/PIF, Funding: $43,114.82.

"Collaborative Information Systems and Adaptive Work Processes," Sponsor: DAGSI, Funding: $32,289.00.

FRANKE, MILTON E., (ENY)

"Nozzle-Diffuser Model Study," Sponsor: AFRL/SBL, Funding: $15,000.00.

"Turbine Aerothermal Research," Sponsor: DAGSI, Funding: $20,420.00.

GOLTZ, MARK N., (ENV)

"Bioenhanced In-Well Vapor Stripping To Treat Trichloroethylene," Sponsor: AETC, Funding: $1,370.02.

"In-Situ Catalytic Groundwater Treatment Using Pd-Catalysts and Horizontal Treatment Wells," Sponsor: DOD NFESC, Funding: $84,197.50.

GUNSCH, GREGG H., (ENG)

"Computer Network Attacks: Detection and Assessment," Sponsor: AFRL/IFGB, Funding: $25,000.00.

"Legerdemain: Creating Sleight of Network Hand," Sponsor: AFIWC/AF-IWB, Funding: $6,400.00.

"Synthesizing Trust Assessments of Artifact and Human Perceptions of Strategically Manipulated Information," Sponsor: AFOSR/MN, Funding: $44,391.00.

GUSTAFSON, STEVEN C., (ENG)

"Novelty Recognition in Material Damage Images," Sponsor: AFOSR/NA, Funding: $14,690.21.

"Target-Shadow Discriminator," Sponsor: AAC/WMGF, Funding: $40,844.00.

"Low Voltage NLO Polymer Photonics," Sponsor: DAGSI, Funding: $5,332.00.

HARITOS, Col GEORGE K., (ENY)

"Matrix-Enabled Damage Tolerance in Oxide CFCCs," Sponsor: AFOSR/NA, Funding: $66,815.79.

HENGEHOLD, ROBERT L., (ENP)

"Mid-Infrared Quantum Well Optoelectronic Devices," Sponsor: DAGSI, Funding: $40,048.00.

"Mid-Infrared Hot Electron Luminescence to Determine Quantum Well Dispersion Relations in Semiconductor Laser Structures for Infrared Countermeasures," Sponsor: AFOSR, Funding: $34,900.00.

"AFRL Research Support," Sponsor: AFRL/PRP, Funding: $8,000.00.

HILL, Lt Col RAYMOND R., (ENS)

"Air Force Standard Analysis Toolkit (AFSAT) Support," Sponsor: AF/XOCA, Funding: $64,620.00.

"Agent Modeling for Defense Modeling and Simulation," Sponsor: DMSO, Funding: $25,000.00.

"Global Information Compression Methodology & Implementation for Enhanced C4ISR System Integration," Sponsor: DAGSI, Funding: $60,640.00.

HUFFINES, Maj GARY R., (ENP)

"Electromagnetic Interferences by High Power Electric Pulses," Sponsor: DAGSI, Funding: $12,420.00.

JACOBS, Lt Col TIMOTHY M., (ENG)

"Visualization of Collaborative Software Systems," Sponsor: AFOSR/MOA, Funding: $29,968.00.

"Multiagent Systems Engineering," Sponsor: AFRL/IFKPC, Funding: $24,845.00.

JACQUES, Lt Col DAVID R. (ENY)

"Control for Uninhabited Combat Air Vehicles," Sponsor: AFOSR/NI, Funding: $9,303.51.

"Cooperative Behavior and Control for Autonomous Munitions," Sponsor: AFRL/MN, Funding: $10,000.00.

"Unmanned Aerospace Vehicles," Sponsor: AFRL/VACA, Funding: $5,000.00.

"Cooperative Behavior and Control for Autonomous Munitions," Sponsor: AFRL/MNGN, Funding: $10,000.00.

"Unmanned Aerospace Vehicles," Sponsor: DAGSI, Funding: $20,168.00.

JODOIN, Maj VINCENT J., (ENP)

"Improvement of the Nuclear Weapon Source Model," Sponsor: AFORSR/NI, Funding: $3,095.17.

KING, PAUL I., (ENY)

"Pulse Detonation Wave Propagation Through a Tube Array," Sponsor: AFRL/PRF, Funding: $5,000.00.

"Propagating Potential Disturbances in Turbomachinery," Sponsor: AFOSR, Funding: $30,312.70.

"Application of a Triggered Isomer Heat Exchanger for Turbojet Engines," Sponsor: AFOSR, Funding: $21,609.43.

"High Cycle Fatigue Unsteady Aerodynamic Analysis improvements and Flow Physics," Sponsor: DAGSI, Funding: $28,026.00.

"Computational Nonlinear Aeroelasticity for Multidisciplinary Analysis and Design," Sponsor: DAGSI, Funding: $16,561.00.

"Micromechanical Opto-Mechanical Pressure Sensor / Arrays for Gas Turbine Engine Characterization," Sponsor: DAGSI, Funding: $16,562.00.

LAMONT, GARY B., (ENG)

"Radar Signal Processing Within The Signal/Image Processing (SIP) Computational Technology Area Under The High Performance Computing Modernization Office (HPCMO) CHSSI Program," Sponsor: AFRL/IFFDC, Funding: $75,000.00.

"Exploitation and and Transition of CAE Tools Program," Sponsor: AFRL/SNF, Funding: $10,415.00.

"Advanced Global Information Compression Methodology & Implementation for Enhanced C4ISR System Integration," Sponsor: DAGSI, Funding: $31,761.00.

LAPUMA, Maj PETER T., (ENV)

"Bioavailability of Chromate Containing Primers Paints," Sponsor: AFOSR/NI, Funding: $8,184.13.

"Bioavailability of Chromate Containing Primers Paints," Sponsor: AFMC/CEVV, Funding: $26,000.00.

LOTT, Lt Col JAMES A., (ENG)

"Vertical Microcavity Lasers," Sponsor: AFOSR/NI, Funding: $12,176.77.

"Tunable Microcavity Lasers for High-Bandwidth Optical Communications," Sponsor: AFOSR/MOA, Funding: $32,814.00.

LOWTHER, Lt Col RONALD P., (ENP)

"AFIT Meteorology Research Lab Upgrade," Sponsor: AFWA/XPRB, Funding: $13,926.00.

MAGEE, Maj ERIC P., (ENG)

"Adaptive Optics in Strong Turbulence and Airborne Laser Advanced Concept Studies," Sponsor: AFRL/DEBA, Funding: $10,000.00.

"Airborne Laser Atmospheric Compensation and Tracking Concepts," Sponsor: AFRL/DEBA, Funding: $25,000.00.

"Optical Phased Array Technology Development in Support of Active/Passive Optical Sensor," Sponsor: DAGSI, Funding: $47,164.00.

MALL, SHANKAR, (ENY)

"Micro and Nano Scale Systems," Sponsor: DAGSI, Funding: $10,255.00.

"High Cycle Fretting Fatigue," Sponsor: AFRL/ML, Funding: $81,147.47.

"Effects of Moisture On The Mechanical Behavior Of Fabric-Reinforced Ceramic Matrix Composites," Sponsor: AFRL/PRTC, Funding: $30,000.00.

"High Cycle Fretting Fatigue," Sponsor: AFRL/ML, Funding: $105,000.00.

"Interfacial Fracture Mechanisms in Bimaterial Systems at Elevated Temperatures using Experimental and Computational Methods," Sponsor: AFOSR/NA, Funding: $63,676.82.

MILLER, Lt Col MIKEL M., (ENG)

"MEMS Gyro and Direct Correlator Output Processing GPS Receiver," Sponsor: AFRL/SNAR, Funding: $12,000.00.

"Ultra-Tight Integration of Inertial Measurement Unit (IMU) and Global Positioning System (GPS) Receivers," Sponsor: AFOSR/NM, Funding: $12,000.00.

"GNC Laboratory Upgrades to Enhance GPS/INS Jamming Capabilities," Sponsor: 746 Test Squadron, Funding: $30,000.00.

MILLER, Lt Col JOHN O., (ENS)

"Interim Brigade Combat Team (IBCT)," Sponsor: DOD US Army, Funding: $5,000.00.

MOORE, JAMES T., (ENS)

"Application of Metaheuristics to Air Force Problems," Sponsor: AFOSR/NM, Funding: $49,972.00.

NANRY, LTC WILLIAM P. (ENS)

"Adaptive Interfaces," Sponsor: DAGSI, Funding: $2,903.00.

OXLEY, MARK E., (ENC)

"Model-Based Object Recognition Using Multiple Sensor Modalities and Invariant Techniques," Sponsor: DAGSI, Funding: $26,813.00.

"A Reductionist Approach to Process Discovery," Sponsor: AFOSR/PIF, Funding: $6,091.20.

PACHTER, MEIR N., (ENG)

"Algorithm Development for On-Line Control of the Airborne Laser (ABL)," Sponsor: AFRL/DEBA, Funding: $1,283.10.

"Advanced Target Tracking Research," Sponsor: AFRL/SNF, Funding: $30,000.00.

"Unmanned Aerospace Vehicles," Sponsor: AFRL/VACA, Funding: $5,000.00.

"Cooperative Behavior and Control for Autonomous Munitions," Sponsor: AFRL/MNGN, Funding: $10,000.00.

"Satellite Formation Flight Control," Sponsor: AFOSR/PIF, Funding: $23,448.97.

PALAZOTTO, ANTHONY M., (ENY)

"Novel Method for Evaluating Material Behavior Under Turbine Engine Operating Conditions," Sponsor: DAGSI, Funding: $25,598.00.

"Numerical Investigation of the Gouging Phenomenon Within a Hypersonic Rail-Sled Assembly," Sponsor: AFOSR, Funding: $99,414.00.

"High Cycle Fatigue," Sponsor: AFRL/ML, Funding: $38,378.40.

PERRAM, GLEN P., (ENP)

"Rotational Energy Transfer in Silane for SiN film deposition," Sponsor: AFOSR/NL, Funding: $4,471.46.

"High Temperature Superconducting Wires for Power Generation: Pulsed Laser Deposition Plume Dynamics," Sponsor: AFOSR/PIF, Funding: $25,652.00.

"Spectral Signatures from Munitions," Sponsor: SAF, Funding: $21,734.88.

"High Temperature Superconducting Wires for Power Generation: Pulsed Laser Deposition Plume Dynamics," Sponsor: AFOSR/NE, Funding: $16,000.00.

"Saturation Laser Spectroscopy for Measuring the Spatially-Resolved Temperature in the Supersonic Nozzle of a Chemical Oxygen-Iodine Laser," Sponsor: AFOSR/NI, Funding: $27,575.00.

"Spectral Signatures from Conventional Munitions. II. Kinetics of Bomb Detonations," Sponsor: SAF/FMBMB-AFOY, Funding: $31,430.00.

PETROSKY, LTC JAMES C., (ENP)

"Studies On The Effects Of Nuclear Environments On Equipment And Personnel," Sponsor: DOD DTRA, Funding: $10,000.00.

QUINN, DENNIS W., (ENC)

"Bioinformatic Support of Toxicogenomics," Sponsor: AFOSR, Funding: $25,428.00.

RAINES, Maj RICHARD A., (ENG)

"PASS Resource Management Strategy," Sponsor: USCICVPACIJZ, Funding: $22,151.63.

"Analysis of Networks," Sponsor: DODJWAC, Funding: $10,960.00.

RAQUET, Maj JOHN F., (ENG)

"Field Test of Low-Power GPS Jammer Location System," Sponsor: AFOSR/NM, Funding: $11,700.79.

RIES, HEIDI R., (ENR)

"Visiting Scientist Program," Sponsor: AFOSR/NI, Funding: $35,869.21.

ROH, WON B., (ENP)

"Nonlinear Optical Phenomena in Optical Fibers and Their Application to High-Power Fiber Lasers," Sponsor: AFRL/DEOF, Funding: $3,397.14.

"High-Power Efficient, Diode-Pumped Fiber Lasers for Air Force Applications," Sponsor: AFOSR, Funding: $26,022.00.

SHELLEY, MICHAEL L., (ENV)

"Abiotic and Biochemical Contaminant Fate and Transport," Sponsor: DAGSI, Funding: $32,958.00.

SPENNY, CURTIS H., (ENY)

"Command and Control of Remotely Operated Vehicles," Sponsor: DAGSI, Funding: $28,358.00.

TEMPLE, MICHAEL A., (ENG)

"Technical Support, Radar/Target Identification Systems," Sponsor: AFRL/SNF, Funding: $15,000.00.

"Technical Support, AFRL/SNR," Sponsor: AFRL/SNR, Funding: $1,716.00.

"Technical Support - AFRL/SNRT, Radar Signal Processing," Sponsor: AFRL/IFFDC, Funding: $13,000.00.

TUTTLE, RONDALD F., (ENP)

"MASINT," Sponsor: DIA, Funding: $100,000.00.

WEEKS, DAVID E., (ENP)

"Nonadiabatic Molecular Reaction Dynamics of B + H2," Sponsor: AFOSR, Funding: $72,625.00.

WEISEL, WILLIAM E., (ENV)

"Multivariable Control: Satellite Formation Flight," Sponsor: DAGSI, Funding: $15,375.00.

WHITE III, Maj EDWARD D., (ENS)

"Modeling R&D Budgets and Expenditures," Sponsor: DOD OSD/PAE, Funding: $20,000.00.

WOOD, AIHUA K., (ENC)

"Hybrid Maxwell Solver for Wide-Band Signature Prediction for LO Targets," Sponsor: DAGSI, Funding: $24,994.00.

"Scattering & Propagation of Electromagnetic Waves," Sponsor: AFOSR/PIF, Funding: $58,896.17.

YEO, YUNG KEE, (ENP)

"Intrinsic and Extrinsic Energy Level Studies in GaN," Sponsor: AFOSR/NI, Funding: $16,002.73.

"Intrinsic and Extrinsic Energy Level Studies in GaN," Sponsor: AFOSR/NE, Funding: $110,000.00.

"Influence of Arsenic Doping on the Electrical and Optical Properties of GaN," Sponsor: AFOSR/NI, Funding: $50,672.50.

"Ion Implantation and Metallic Contact Studies for Application to AlGaN Optoelectronic Devices," Sponsor: AFOSR/PIF, Funding: $8,954.83.

3.5 REFEREED JOURNAL PUBLICATIONS

[*Denotes multiple faculty authors.]

BAILEY, WILLIAM F., (ENP)

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3.6 OTHER PUBLICATIONS

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(NOTE: The Graduate Mobility Operations (GMO) non-thesis management program is a component of Air Mobility Command's Advanced Study of Air Mobility executive development program. Students in the GMO program write graduate research papers supporting topics of interest to AMC.)

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MILLER, Lt Col MIKEL, (ENG)

Hoffman, G.S. and M. Miller. "Real Time Personal Positioning and Physiological Monitoring System," *Proceedings of the 14th ION GPS-2001*. Salt Lake City UT, September 2001.

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Miller, C., M. Miller, and J. Agnew. "On Track for a Personnel Best, GPS with Physiological Sensors", *GPS World Magazine.* pp. 38-42. Advanstar Communications, March 2001.

OXLEY, MARK E., (ENC)

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Magnus, A. L., and M. E. Oxley. "The Theory of Confusion," *Proceedings of SPIE, Applications and Science of Neural Networks, Fuzzy Systems, and Evolutionary Computation IV*. Paper no. 24, San Diego CA, July 2001.

PACHTER, MEIR, (ENG)

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Chandler, P.R. and M. Pachter. "Dynamic Network for Flow Optimization Models for Air Vehicle Resource Allocation," *Proceedings of the American Control Conference*. Arlington VA, 25-27 June 2001.

Hall, J. and M. Pachter. "Three Dimensional Formation Maneuvers," *Proceedings of the IEEE Conference on Decision and Control*. pp. 364-369. Sydney Australia, 12-15 December 2000.

Oppenheimer, M. and M. Pachter. "Adaptive Optics Controller for the Airborne Laser," *SPIE Proceedings of the AeroSense Conference*. Orlando FL, 16-21 April 2001.

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RAINES, Maj RICHARD A., (ENG)

*Thomas, R.W., R.A. Raines, R.O. Baldwin, and M.A. Temple. "Performance Analysis of Multicast Protocols for Mobile Satellite Communication Networks," *2001 International Symposium on Performance Evaluation of Computer and Telecommunication Systems.* Orlando FL, pp. 27-34. 15-19 July 2001.

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*Klein, R.W., M.A. Temple, R.L. Claypoole, Jr., R.A. Raines, and J.P. Stephens, Sr. "Performance Characterization of a Proposed Wavelet Domain Communication System (WDCS)," *Proceedings of 5th World Multi-Conference on Systematics, Cybernetics, and Informatics (SCI 2001), and 7th International Conference on Information Systems Analysis and Synthesis (ISAS 2001)*, Orlando FL, Invited paper, Best Paper Award, July 2001.

RAQUET, Maj JOHN F., (ENG)

*Tredway B., M. Miller, and J. Raquet. "Using GPS to Collect Trajectory Data for Ejection Seat Design, Validation, and Testing," *Proceedings of ION GPS-200.* Salt Lake City UT, Sept 2001.

REHG, Maj MICHAEL T., (ENV)

Miceli, M. P., J. P. Near, J. van Scotter, and M. Rehg. "Individual differences and whistle-blowing," *Proceedings of the Academy of Management.* Washington D.C. August 2001.

*Kennedy, James F., Daniel T. Holt, Mark A. Ward, and Michael A. Rehg. "The Influence of Outsourcing on Job Satisfaction and Turnover Intentions of Engineers," *Proceedings of the Annual Meeting of the Southern Management Association.* Orlando FL,7-11 November 2000.

ROH, WON B. (ENP)

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SMITH, Lt Col E. PRICE, (ENY)

Smith, E., K. Bollino, A. Rogers, and J. DiSebastian. "Project Kookaburra: Teaching Systems Engineering Using the Design of Unmanned Aerial Vehicles," *Proceedings of the International Council on Systems Engineering Annual International Symposium.* July 2001.

SPENNY, CURTIS H., (ENY)

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SWARTZ, Lt Col STEPHEN M., (ENS)

*Guarnieri, Jorge, Alan W. Johnson, and Stephen M. Swartz. "Maintenance Resources Capacity Estimator," *International Conference on Industrial Logistics 2001 Proceedings*. Okinawa Japan, 2001.

TEMPLE, MICHAEL A., (ENG)

Hale, T.B., M.A. Temple, and B.L. Crossley. "Ambiguity Analysis for Pulse Compression Radar Using Gold Code Sequences," *Proceedings of the 2001 IEEE National Radar Conference*. 111-116. Atlanta GA, 1-3 May 2001.

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TRAGESSER, STEVEN G., (ENY)

Oldenburg, J. A. and S.G. Tragesser. "Minimizing the Effects of Transverse Torques During Thrusting for a Spin-Stabilized Spacecraft," *AAS Astrodynamics Conference*, Santa Barbara CA, Feb. 2000.

Rogers, A., S. Tragesser,. and E. Smith. "Concept Exploration into an Australian Indigenous Space Launch Capability", *Proceedings of the International Council on Systems Engineering*. July 2001.

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

Bradley, C.J., P.J. Collins, M.A. Temple, A.J. Terzuoli, Jr., G. Nesti, J. Fortuny, and G.D. Lewis. "A Study of Existing Bistatic Calibration Techniques," Proceedings of the 2001 IEEE AP-S International Symposium on Electromagnetic Theory.* Boston MA, May 2001.

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*Golla, K.J., P.J. Collins, S. Schneider, and A.J. Terzuoli, Jr. "Broadband Application of High Impedance Ground Planes," *Proceedings of the 2001 IEEE/AP-S/URSI International Symposium*. Boston MA, 8-13 July 2001.

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WALTERS, Lt Col MICHAEL K., (ENP)

Early, Stephen A. and M.K. Walters. "Investigation of the Correlation Between Mechanical Turbulence and Optical Turbulence in the Atmosphere," *Conference Proceedings, 11th Symposium on Meteorological Observations and Instrumentation.* Albuquerque, NM, Amer. Met. Soc., January 2001.

WARD, Maj MARK A., (ENV)

*Kennedy, James F., Daniel T. Holt, Mark A. Ward, and Michael A. Rehg. "The influence of outsourcing on job satisfaction and turnover intentions of engineers," *Proceedings of the Annual Meeting of the Southern Management Association*. Orlando FL, 7-11 November 2000.

WEEKS, DAVID E., (ENP)

*Hengehold, R.L**.,** D.E. Weeks, M.A. Marciniak, C.A. Bartholomew, and M.R. McKay. "Mid-Infrared Quantum-Well, Opto-Electronic Devices*," Solid State and Diode Laser Technology Review Technical Digest*. Albuquerque NM, May 21-24, 2001.

Weeks, D.E., S.H.Yang, and T.A.Niday. "Scattering Matrix Elements and Cross Sections for the Reaction B (2P1/2) + H2 (j) □ B (2P3/2) + H2 (j ')," *High Energy Density Matter (HEDM) Contractors' Conference*. Park City UT, 24-26 October 2000.

WIESEL, WILLIAM E., (ENY)

Wiesel, William E. "The Dynamics of Relative Satellite Motion," *AAS 01-163, AAS/AIAA Space Flight Mechanics Meeting*, Santa Barbara CA, Feb 11-15, 2001.

Bordner, Ralph E. and Wiesel, William E. "Trajectory Estimation for Satellite Clusters," *AAS 01-342, AAS/AIAA Astrodynamics Conference*. Quebec City Quebec Canada, 29 July-3 Aug 2001.

3.7 SUBSTANTIAL CONSULTATIONS

[*Denotes duplicate entry, multiple faculty authors.]

AGNES, Maj GREGORY S. (ENY)

*Terzuoli, A.J., Jr., (co-PI), G. Agnes, (co-PI), and P.J. Collins. "Comparison of Alternate Wing Control Surfaces." Sponsors: DARPA, ASC/EN, AFRL/SN, RATSCAT.

BALDWIN, Maj RUSTY O., (ENG)

Baldwin, R.O. Air Force Representative for Joint Staff/J6 NETWARS Technical Advisory Group and Member of Architecture and Standards Committee for NETWARS Communications Simulation Effort.

Baldwin, R., R. Raines, and M. Temple. Technical Support, Air Force Communication Systems Modeling. Sponsor: Air Force Communications Agency.

BIROS, Lt Col DAVID P., (ENV)

*Biros, David P., and Alan R. Heminger. Consulted with Air Force Special Operations Command (AFSOC) on development of Strategic Information Plan, 11-13 March 2001.

CANFIELD, Lt Col ROBERT A., (ENY)

Canfield, Robert A. *Basic Research Strategy to Support a Next Generation Bomber*, Air Force Office of Scientific Research meeting, Arlington, Virginia, 6 August 2001.

CLAYPOOLE, Maj ROGER, JR., (ENG)

Claypoole, R., Jr.. served as Image Processing Expert on the Opacity Science Advisory Committee for the Environmental Security Technology Certification Program. This program is run by Air Force Research Labs, AFRL/MLQL, Tyndall AFB FL.

Claypoole, R., Jr. supported the Maverick Missile Program Office (AAC/WMG) to improve maverick tracker performance in the presence of shadows.

*Terzuoli, A.J., Jr. (PI), M.A. Temple, S. Gustafson, R. Claypoole, Jr., and R. Tuttle. "Passive Sensor Initiative," Sponsor: NATO C3 Agency, The Hague.

COLLINS, Maj PETER J., (ENG)

*Terzuoli, A.J., Jr., M.A. Temple, P.J. Collins. "Computer Model Simulation & Measurement Studies in Support of Bistatic RCS Characterization." International Joint Venture with European Microwave Signature Lab, Sponsor: AFRL/SN.

*Terzuoli, A.J., Jr., (co-PI), G. Agnes, (co-PI), and P.J. Collins. "Comparison of Alternate Wing Control Surfaces." Sponsors: DARPA, ASC/EN, AFRL/SN, RATSCAT.

*Terzuoli, A.J., Jr., and P.J. Collins (PI). "Various Aspects of LO/CLO/CCLO." Sponsor: ASC/EN.

*Terzuoli, A.J., Jr., and M.A. Temple, (PI), P.J. Collins. "Investigation of Low-Band Direction Finding Using an Ensemble Integrated Antenna," Sponsor: AFRL/SN.

CUNNINGHAM, WILLIAM A., (ENS)

Provided assistance to the AF Air Transportation Process Reengineering Team

DECKRO, RICHARD F., (ENS)

Consulted with a number of units and agencies in conjunction with thesis efforts and normal operations.

*Raines, R. and R. Deckro. "Multicast Communications Using Low Earth Orbit Satellite Communication Networks." Sponsor: Department of Defense

DELOACH, Maj SCOTT A., (ENG)

*Jacobs, T.M., S.A. DeLoach, T.C. Hartrum, and M. Cox. "Graphical Interface for Agent-Based Mixed-Initiative Collaboration", (DAGSI Funded), Sponsor: AFRL/HECA.

FRANKE, MILTON E., (ENY)

Franke, M. E. ASME International (Committee on Organization and Rules), 14-15 November 2000, 15-17 March 2001, 5-7 June 2001, 21-23 September 2001.

Franke, M. E. and Capt Matthew Zuber. SMC/TL, Aviation Blvd., Lawndale, CA, Flow research.

Franke, M. E and Mark Taylor. TRW Space Park, Redondo Beach, CA, Flow research.

Franke, M. E.and William Walter. HYBRICRAFT technology.

Franke, M. E. and Dr. K. Ghia. University of Cincinnati, Cincinnati, OH, Boundary layer research.

Franke, M. E. and Dr. Richard Rivir. AFRL, Wright-Patterson AFB OH, Boundary layer research.

Franke, M. E. and Dr. Patrick McDaniel. AFRL, Kirtland AFB NM, Alternate energy source for propulsion.

Franke, M. E. and Gary Laughlin. Experimental aerodynamics.

Franke, M. E. and Lt Col Cowan. AFRL, Wright-Patterson AFB OH, MEMS.

Franke, M. E. Paper review, *Journal of Sound and Vibration.*

Franke, M. E. Paper review, ASME *Journal of Heat Transfer*.

GOLTZ, MARK N., (ENV)

Goltz, M. N. Evaluation of fuel seep near Camp Long/Wonju Air Station, Korea, June-October 2001.

GUNSCH, GREGG H., (ENG)

Gunsch, G.H. participant in Digital Forensics Workshop, 6-8 August 2001.

Gunsch, G.H. Legerdemain Project, AFIWC and IW Battle Lab, February-September 2001.

GUSTAFSON, STEVEN C., (ENG)

Gustafson, S.C. consultant to (Eglin AFB) on Maverick missile target shadow discrimination ($40,844), Sponsor: AAC/WMG

*Magee, E.P., J.A. Lott, and S.C. Gustafson. "Active/Passive Optical Sensor Research," Optical phased arrays for low cost, compact IRCM, $400K, Sponsor: DAGSI/AFRL/SN

*Terzuoli, A.J., Jr. (PI), M.A. Temple, S. Gustafson, R. Claypoole, Jr., and R. Tuttle. "Passive Sensor Initiative," Sponsor: NATO C3 Agency, The Hague.

HARTRUM, THOMAS C., (ENG)

*Jacobs, T.M., S.A. DeLoach, T.C. Hartrum, and M. Cox. "Graphical Interface for Agent-Based Mixed-Initiative Collaboration", (DAGSE Funded), Sponsor: AFRL/HECA.

HEMINGER, ALAN R., (ENV)

*Heminger, Alan R., and David P. Biros. Consulted with Air Force Special Operations Command (AFSOC) on development of Strategic Information Plan, 11-13 March 2001.

Heminger, Alan R. "Air Force Institute of Technology Academic Library Information Systems Architecture, Capabilities, and Processes," unpublished report, March 2001.

Heminger, Alan R. "AFIT/RRD Registration Processes," unpublished report, September 2001.

HILL, Lt Col RAYMOND R., (ENS)

Invited to attend the Common Human Behavior and Interchange System Workshop sponsored by the Defense Modeling and Simulation Office, June 2001.

JACOBS, Lt Col TIMOTHY M., (ENG)

*Jacobs, T.M. and K.S. Mathias. "Information Retrieval and Visualization for the Joint Battlespace Infosphere," Sponsor: AFRL/IFT.

Jacobs, T.M. "Visual Collaborative Training." Sponsor: HQ AETC/XP.

Jacobs, T.M. "Visualization of Collaborative Information Systems." Sponsor: AFOSR/NM.

Jacobs, T.M., "Multi-agent Systems Engineering and Visualization." Sponsor: AFRL/IFT.

*Jacobs, T.M., S.A. DeLoach, T.C. Hartrum, and M. Cox. "Graphical Interface for Agent-Based Mixed-Initiative Collaboration," (DAGSI Funded), Sponsor: AFRL/HECA.

LOTT, Lt Col JAMES A., (ENG)

Lott, J.A., "Development of Blue and Ultra-Violet Microcavity Lasers," May/June 2001, Sponsor: Northwestern University Center for Quantum Devices.

Lott, J.A., "Development of Integrated Microcavity Lasers and Detectors for Medical Spectroscopy," October 2000/September 2001, Sponsor: Stanford University Solid State & Photonics Lab.

Lott, J.A., "Development of III-V Micro-Electro-Mechanical Systems (MEMS)," October 2000/September 2001, Sponsor: AFRL/SND.

*Magee, E.P., J.A. Lott, and S.C. Gustafson, "Active/Passive Optical Sensor Research," Optical phased arrays for low cost, compact IRCM, $400K, Sponsor: DAGSI/AFRL/SN.

MAGEE, Maj ERIC P., (ENG)

Magee, E.P. consulting with the ABL Technology Branch (AFRL/DEBS) on ABL tracking and compensation.

Magee, E.P. consulting with the Maverick Missile Program Office (AAC/WMG) to improve maverick tracker performance in the presence of shadows.

*Magee, E.P., J.A. Lott, and S.C. Gustafson "Active/Passive Optical Sensor Research," Optical phased arrays for low cost, compact IRCM. Sponsor: DAGSI/AFRL/SN.

MATHIAS, Maj KARL S., (ENG)

Mathias, K.S. advised on database system required to store and analyze UAV video. Sponsor: AFRL/IF.

Mathias, K.S. built information server software to support combat modeling and advised developers as they created client software to access server. Sponsor: AFRL/SNZW.

Mathias, K.S. advised virtual distributed laboratory contractor on proper method for collecting intelligence imagery information and began development of intelligent front-end for image analysis. Sponsor: AFRL/SNAS.

Mathias, K.S. advised on use of JAVA database systems with Master Air Attack Planning Tools and began development of tool to detect differences between Air Operation Center (AOC) databases. Sponsor: Command & Control Battlelab.

*Jacobs, T.M. and K.S. Mathias. "Information Retrieval and Visualization for the Joint Battlespace Infosphere." Sponsor: AFRL/IFT.

MAYBECK, PETER S., (ENG)

Maybeck, P. "Multiple Model Algorithms Applied to Sensor/Actuator Failure Detection and Controller Reconfiguration for Survivable Flight Controller Design." Sponsors: ASC/HPMT and AFRL/VAC.

Maybeck, P. "Multiple Model Adaptive Estimators Applied to Detection/Compensation of Jamming/Spoofing of GPS-Aided Inertial Navigation Systems." Sponsor: AFRL/SNAR.

Maybeck, P. "Design of Ultra-Tightly Coupled GPS-Aided Inertial Navigation Systems for the Next Generation of Miniature Munition Systems." Sponsor: AFRL/MNGN.

PACHTER, MEIR, (ENG)

Pachter, M. "Adaptive and Nonlinear Control." Sponsor: AFOSR.

Pachter, M. "Kalman Filtering." Sponsor: AFRL/SNAT

Pachter, M. "Cooperative Control." Sponsor: DAGSI

Pachter, M. "Adaptive Optics." Sponsor: Sponsor: AFRL/DEBA

Pachter, M. "Cooperative Control for UAVs." Sponsor: AFRL/VACA

Pachter, M. "Cooperative Control for Air to Ground Munitions." Sponsor: AFRL/MN

Pachter, M., P. Maybeck, M. Miller, and J. Raquet. "GPS Navigation." Sponsor: CIGTF

PERRAM, GLEN P., (ENP)

Perram, G.P. Member of OSD Joint Technology Office Chemical Lasers Technical Area Working Group which meet at Kirtland AFB, NM in June 2001. Delivered report outlining recommendations for future DoD chemical laser research and development programs.

RAINES, Maj RICHARD A., (ENG)

*Raines, R. and R. Deckro. "Multicast Communications Using Low Earth Orbit Satellite Communication Networks." Sponsor: Department of Defense

*Baldwin, R., R. Raines, and M. Temple. "Technical Support, Air Force Communication Systems Modeling." Sponsor: Air Force Communications Agency.

RAQUET, Maj JOHN F., (ENG)

Raquet, J. and D. Smith. "Development of a Prototype Monitoring System for Aerospace Ground Equipment." Sponsor: AFRL

Raquet, J. and C. Ormsby. "Lunar Navigation Architecture Options Analysis." Sponsor: NASA Glenn Res. Center.

REHG, Maj MICHAEL T., (ENV)

Rehg, Michael T. Market research, core competencies, and organizational culture, AFMC/MSG, September 2001.

Rehg, Michael T. Facilitation of Strategic Planning Off-Site for ASC/YT, September 2001.

SWARTZ, Maj STEPHEN M., (ENS)

Analysis of system reliability and availability for the F-16 System Program Office

TEMPLE, MICHAEL A., (ENG)

*Baldwin, R., R. Raines, and M. Temple, "Technical Support, Air Force Communication Systems Modeling," $42K, Sponsor: Air Force Communications Agency.

Temple, M.A., R. Penno (UD), and L Hong (WSU). 'Interferometric Radar Clutter Suppression." 2 July 2001-30 June 2003. Sponsor: Joint Air Force Research Laboratory/Dayton Area Graduate Studies Institute (DAGSI).

*Terzuoli, A.J., Jr., M.A. Temple, P.J. Collins. "Computer Model Simulation & Measurement Studies in Support of Bistatic RCS Characterization." International Joint Venture with European Microwave Signature Lab, Sponsor: AFRL/SN

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

Terzuoli, A.J., Jr., OSU (PI), and WSU. "Foliage Penetration–Targets Under Trees Projects," Sponsor: AFRL/SNA.

*Terzuoli, A.J., Jr., M.A. Temple, P.J. Collins. "Computer Model Simulation & Measurement Studies in Support of Bistatic RCS Characterization." International Joint Venture with European Microwave Signature Lab, Sponsor: AFRL/SN.

*Terzuoli, A.J., Jr., (co-PI), G. Agnes, (co-PI), and P.J. Collins. "Comparison of Alternate Wing Control Surfaces." Sponsors: DARPA, ASC/EN, AFRL/SN, RATSCAT.

*Terzuoli, A.J., Jr., and P.J. Collins (PI). "Various Aspects of LO/CLO/CCLO," Sponsor: ASC/EN.

*Terzuoli, A.J., Jr., and M.A. Temple, (PI), P.J. Collins. "Investigation of Low-Band Direction Finding Using an Ensemble Integrated Antennas." Sponsor: AFRL/SN.

*Terzuoli, A.J., Jr. (PI), M.A. Temple, S. Gustafson, R. Claypoole, Jr. and R. Tuttle, "Passive Sensor Initiative." Sponsor: NATO C3 Agency, The Hague.

TUTTLE, RONALD F. (ENP)

*Terzuoli, A.J., Jr. (PI), M.A. Temple, S. Gustafson, R. Claypoole, Jr., and R. Tuttle. "Passive Sensor Initiative," Sponsor: NATO C3 Agency, The Hague.

3.8 PRESENTATIONS

[*Denotes duplicate entry, multiple faculty authors.]

AGNES, Maj GREGORY S., (ENY)

Agnes, Gregory S. "Adaptive Membrane Optics." AIAA Dayton Conference, March 2001.

Agnes, Gregoy S. "Multifunctional Structures for Space Applications." AFOSR Polymers Workshop, Dec 2000.

ANDREW, Col JOHN M., (ENS)

Andrew, John M. and Kirk A. Yost. "Junior/Senior Analyst Special Session." 69th Military Operations Research Society Symposium, United States Naval Academy, Annapolis, MD, June 2001.

AROSTEGUI, Maj MARVIN A., (ENS)

Arostegui, Marvin A. "Analysis Techniques." Short course given at USAFE Regional Supply Squadron, Sembach AB, Germany, January 2001 (four offerings).

Arostegui, Marvin A. "Supply Chain Management." Short course given at USAFE Regional Supply Squadron, Sembach AB, Germany, January 2001 (two offerings).

Arostegui, Marvin A. "Supply Chain Management." Short course given at 100th Supply Squadron, RAF Mildenhall, UK, January 2001 (three offerings).

Arostegui, Marvin A. "La Gerencia de la Logística." Talk given at The Center for Hemispheric Defense Studies Seminar, Washington DC, March 2001.

BAILEY, WILLIAM F., (ENP)

Josyula, E. and W.F. Bailey. *Vibration-Dissociation Coupling Using Master Equations in Nonequilibrium Hypersonic Blunt Body Flows.* presented at the annual AIAA Symposium in Dayton, Ohio in May 2001.

Josyula, E. and Wm. F. Bailey. *The Physics of Vibration-Dissociation Coupling Using Master Equations in Nonequilibrium Hpersonic Flows.* 32nd AIAA Plasmadynamics and Lasers Conference, 11-14 June 2001, Anaheim, CA.

BALDWIN, Maj RUSTY O., (ENG)

Baldwin, R.O. "Modeling and Simulation in the Department of Defense," DARPA Network Modeling and Simulation Principal Investigator Conference." invited presenter and military panelist, La Jolla CA, April 2001.

*Thomas, R.W., R.A. Raines, R.O. Baldwin, and M.A. Temple. "Performance Analysis of Multicast Protocols for Mobile Satellite Communication Networks." 2001 International Symposium on Performance Evaluation of Computer and Telecommunication Systems, Orlando FL, 15-19 July 2001.

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

*Alsing, Stephen G., Kenneth W. Bauer, Jr., and J.O. Miller. "Evaluating Competing Classifiers Using a Multinomial Selection Procedure." Artificial Neural Networks in Engineering (ANNIE) International Conference, St. Louis, MO, November 2000.

*East, Julia A., Kenneth W. Bauer, Jr., and Jeffrey W. Lanning. "Feature Selection for Predicting Pilot Mental Workload." ANNIE International Conference, St. Louis, MO, November 2000.

BIROS, Lt Col DAVID P., (ENV)

Burgoon, George, and David P. Biros. "Detecting Deception in the Military Infosphere: Improving and Integrating Human Detection Capabilities with Automated Tools." Air Force Office of Scientific Research, May 2001.

*Biros, David P., and Alan R. Heminger. "The AFIT Information Resource Management and Information Systems Management Programs." briefed to Mr. John Gilligan, SES, Deputy Chief Information Officer, 11 July 2001.

BONS, Maj JEFFREY P., (ENY)

*Schwabacher, Gregory, J., Bons, Jeffrey P., and Franke, Milton E. "CFD Simulation of an Aircraft Laser Turret with Fairings." Presented at the AIAA 39th Aerospace Sciences Meeting and Exhibit, (paper #AIAA 2001-0889), Reno, NV, 8-11 Jan 2001.

Bons, Jeffrey P., Taylor, Robert, and Rivir, Richard B. "Roughness Measurements on Ground Power Turbines." Presented at the ASM 2000 Materials Solutions Conference & Exhibition in St Louis, MO, 9-12 October 2000.

BRADY, Lt Col STEPHAN P., (ENS)

Brady, Stephan P. "Multi-Echelon Reordering with Competing Policies," Multi-Echelon Inventory Conference, University of Michigan, Ann Arbor, 2001.

Brady, Stephan P. "La Gerencia de la Logística." Talk given at The Center for Hemispheric Defense Studies Seminar, Washington DC, March 2001.

Brady, Stephan P. "Career Opportunities for Doctorates in Logistics Management." Council of Logistics Management Doctoral Student Symposium, September 2001.

BROTHERS, Lt Col HEIDI S., (ENV)

Kale, William H., III, and Heidi S. Brothers. *Environmental Life Cycle Cost Methodology for Incorporating Pollution Prevention in AF Weapon Systems*. Air & Waste Management Association 94th Conference, Orlando FL, 28 June 2001.

BURGGRAF, LARRY W. (ENP)

Burggraf, L.W. *SiC Surfaces and Clusters.* Invited Physical Chemistry Seminar. Department of Chemistry, University of Cincinnati, 2 Feb 2001

CANFIELD, Lt Col ROBERT A., (ENY)

Canfield, Robert A. "System Design Innovation using Multidisciplinary Optimization and Simulation." AFOSR Contractors/Grantees Workshop on Computational & Applied Mathematics, Stanford CA, 25-27 July 2001.

CHAMBAL, Capt STEPHEN P., (ENS)

*Beauregard, Joseph E., Richard F. Deckro, and Stephen P. Chambal. "Modeling Information Assurance." 69th Military Operations Research Society Symposium, United States Naval Academy, Annapolis, MD, June 2001.

Chambal, Stephen P. and J. Bert Keats. "Transient Behavior of Time-Between-Failures of Complex Repairable Systems." National Meeting of the Institute for Operations Research and Management Sciences, San Antonio TX, November 2000.

Chambal, Stephen P. "Confidence Intervals and Hypothesis Testing." Short course given at AF Operational Test and Evaluation Center (AFOTEC) Detachment 2, Eglin AFB, FL, October 2000.

*Chambal, Stephen P. and Jeffrey W. Lanning. "Probability and Statistics and Design of Experiments." Short course given at AF Test Pilot School, Edwards AFB CA, February 2001.

*Chambal, Stephen P. and Jeffrey W. Lanning. "Confidence Intervals, Hypothesis Testing, and Design of Experiments," Short course given at HQ AFOTEC, Kirtland AFB NM, March 2001.

CHILTON, Lt Col LAWRENCE K., (ENC)

Chilton, L. W. "Domain Decomposition and Mortar Finite Elements." AFOSR Contractors/Grantees Meeting, Computational and Applied Mathematics, Stanford University, Palo Alto CA, July 2001.

Chilton, L. W. "Mixed Methods with Mortar Elements for Stokes Flow." Applied Mathematics Colloquium, Air Force Institute of Technology, Wright-Patterson AFB OH, May 2001.

Chilton, L. W. "Orthogonal Polynomials." Mathematics Department Colloquium, Sinclair Community College, Dayton OH, October 2000.

CHRISSIS, JAMES W., (ENS)

*Calhoun, Kevin M., Richard F. Deckro, James W. Chrissis, James T. Moore, and John C. Van Hove. "A Heuristic Procedure for Scheduling and Re-Scheduling Allocated Attack Aircraft to Targets." 69th Military Operations Research Society Symposium (MORSS), United States Naval Academy, Annapolis MD, June 2001.

*Pinkstaff, Michael S., Richard F. Deckro, and James W. Chrissis. "An Approach to Disrupting Communications Networks," 69th MORSS, United States Naval Academy, Annapolis, MD, June 2001.

*Shelton, Sarah E., James W. Chrissis, Richard F. Deckro, and Brian K. Sperling. "Selecting Optimal Control Portfolios to Improve Army Aviation Safety." 4th Military Applications Society Mtg., Quantico VA, May 2001.

CLAYPOOLE, Maj ROGER L., JR., (ENG)

Claypoole, R.L., Jr. "AFIT Warrior Brief." presented to Air University Command Board of Visitors, Maxwell AFB AL, 19 January 2001.

Claypoole, R.L., Jr. "AFIT Warrior Brief." presented to the Air Force Institute of Technology Foundation, Wright-Patterson AFB OH, 16 February 2001.

Claypoole, R.L., Jr. "AFIT Warrior Brief." presented to the Air Force Institute of Technology Board of Visitors, 26 March 2001

Claypoole, R.L., Jr. "AFIT Warrior Brief." presented to Air Force Materiel Command Single Manager Conference, 14 June 2001.

Mendenhall, M. and R.L. Claypoole, Jr. "Wavelet-Based Audio Embedding and Audio/Video Compression," SPIE's 46th Annual Meeting and the International Symposium on Optical Science and Technology, San Diego CA, August 2001.

Brown, R. and R.L. Claypoole, Jr. "Image Registration Using Redundant Wavelet Transform", SPIE's 46th Annual Meeting and the International Symposium on Optical Science and Technology, San Diego CA, August 2001.

*Klein, R.W., M.A. Temple, R.L. Claypoole, Jr., R.A. Raines, and J.P. Stephens. "Performance Characterization of a Proposed Wavelet Domain Communication System (WDCS)", 5th World Multi-Conference on Systematics, Cybernetics, and Informatics (SCI 2001) and 7th International Conference on Information Systems Analysis and Synthesis (ISAS 2001), Orlando FL, July 2001.

COLLINS, Maj, PETER J., (ENG)

*Bradley, C.J., P.J. Collins, M.A. Temple, A.J. Terzuoli, Jr., G. Nesti, J. Fortuny, and G.D. Lewis. "A Study of Existing Bistatic Calibration Techniques." 2001 IEEE AP-S International Symposium on Electromagnetic Theory, Boston MA, May 2001.

*Bradley, C.J., P.J. Collins, M.A. Temple, A.J. Terzuoli, Jr., G. Nesti, J. Fortuny, and G.D. Lewis. "Issues in the Calibration of Bistatic RCS Measurements," IEEE Eleventh International Conference on Antennas and Propagation (ICAP 2001), Manchester, UK, April 2001.

*Freundl, K.J., G. Agnes, P.J. Collins, A.J. Terzuoli, Jr., and K.S. Wilson. "Using an FVTD to Compare Control Surface Bistatis RCS Mechanisms," Proceedings of the Electromagnetic Code Consortium Annual Symposium, U.S. Government Classified, 28 May – 1 June 2001.

*Freundl, K.J., G. Agnes, P.J. Collins, A.J. Terzuoli, Jr. "Comparison of Control Surface Bistatic RCS Mechanisms," Military Sensing Symposia, 47th Annual Tri-Service Radar Symposium, U.S. Government Classified, Laurel MD, 22-24 May 2001.

*Golla, K.J., P.J. Collins, S. Schneider, and A.J. Terzuoli, Jr. "Broadband Application of High Impedance Ground Planes," 2001 IEEE/AP-S/URSI International Symposium, Boston MA, 8-13 July 2001.

*Bradley, C.J., P.J. Collins, M.A. Temple, A.J. Terzuoli, Jr., K.S. Wilson, J. Fortuny, and G.D. Lewis. "A Performance Analysis of Several Bistatic Calibration Techniques," IEEE 2001 International Geoscience and Remote Sensing Symposium, Sydney Australia, 9-13 2001.

CUNNINGHAM, WILLIAM A., (ENS)

Cunningham, William A. "La Gerencia de la Logística." Talk given at The Center for Hemispheric Defense Studies Seminar, Washington DC, March 2001.

Cunningham, William A. "Civil Reserve Air Fleet and Strategic Mobility." Presentation given at Introduction to Logistics Course, Wright-Patterson AFB OH, April 2001.

Cunningham, William A. "Strategic Defense Management Initiative: Impact on Time Definite Delivery." Presentation given at Logistics Executive Development Seminar, Wright-Patterson AFB OH, April 2001.

Cunningham, William A. "Strategic Defense Management Initiative and Its Impact on Transportation." Keynote speech for the AF Material Command Transportation Awards Conference, June 2001.

Cunningham, William A., "An Introduction to Activity Based Costing in DoD," Presentation given at Introduction to Logistics Course, Wright-Patterson AFB, OH, July 2001.

DECKRO, RICHARD F., (ENS)

*Beauregard, Joseph E., Richard F. Deckro, and Stephen P. Chambal. "Modeling Information Assurance." 69th Military Operations Research Society Symposium (MORSS), United States Naval Academy, Annapolis MD, June 2001.

Bennett, Sheila G. and Richard F. Deckro. "Vectoring Offensive Information Warfare at the Tactical Level of Operations." 69th MORSS, United States Naval Academy, Annapolis, MD, June 2001.

*Calhoun, Kevin M., Richard F. Deckro, James W. Chrissis, James T. Moore, and John C. Van Hove. "A Heuristic Procedure for Scheduling and Re-Scheduling Allocated Attack Aircraft to Targets." 69th MORSS, United States Naval Academy, Annapolis MD, June 2001.

Deckro, Richard F. "Value Focused Thinking: Getting the Most Out of Your Decision Analyses." Presentation to Cincinnati/Dayton Chapter of the Institute for Operations Research and Management Sciences (INFORMS), November 2000.

Deckro, Richard F. "Information Operations Opportunities at AFIT," Phoenix Challenge 2001, AF Information Warfare Center, San Antonio TX, May 2001.

Deckro, Richard F. "Information Operations Education at AFIT: Opportunities for Cooperation." Phoenix Challenge 2001, AF Information Warfare Center, San Antonio TX, September 2001.

Deckro, Richard F. and Gregory S. Parnell. "Government Decision Analysis: An Environmental Example." National Meeting of the INFORMS, San Antonio TX, November 2000.

Deckro, Richard F. and Gregory S. Parnell. "Interfacing Information Operations and Operations Research." 12th France/US Simulation and Operations Research Symposium, The Center for Defense Analysis, Paris, France, May 2001.

Gallan, Roger D., Jr., Jack M. Kloeber, Jr., and Richard F. Deckro. "Building a Safety Portfolio to Reduce Army Aviation Losses: The UH-60 Blackhawk Project." Decision Analysis Affinity Group, Houston TX, May 2001.

Garrett, Laura K. and Richard F. Deckro. "Malicious hackers: A Framework for Analysis and Case Study." 69th MORSS, United States Naval Academy, Annapolis MD, June 2001.

*Pinkstaff, Michael S., Richard F. Deckro, and James W. Chrissis. "An Approach to Disrupting Communications Networks." 69th MORSS, United States Naval Academy, Annapolis MD, June 2001.

Renfro, Robert S., II and Richard F. Deckro, "A Preliminary Analysis of an Iranian Acquisition Social Network," 69th MORSS, United States Naval Academy, Annapolis MD, June 2001 (Secret).

*Shelton, Sarah E., James W. Chrissis, Richard F. Deckro, and Brian K. Sperling. "Selecting Optimal Control Portfolios to Improve Army Aviation Safety." 4th Military Applications Society Mtg., Quantico VA, May 2001.

DELLA-ROSE, Maj DEVIN J., (ENP)

Della-Rose, Devin J. *The Space Environment, Space Weather Storms, and Effects on Technology*. Address to Dayton Institute of Electrical and Electronics Engineers (IEEE) meeting, Dayton OH. 16 October 2001.

DELOACH, Maj SCOTT A., (ENG)

DeLoach, S.A. "Engineering Multiagent Systems." invited talk at the Twelfth Annual Midwest Artificial Intelligence and Cognitive Science Conference (MAICS 2001), Miami University, Oxford OH, 1 April 2001.

DeLoach, S.A. "Specifying Agent Behavior as Concurrent Tasks: Defining the Behavior of Social Agents." Fifth Annual Conference on Autonomous Agents, Montreal, Canada, 28 May-1 June 2001.

DeLoach, S.A. "Analysis and Design Using MaSE and agentTool," 12th Midwest Artificial Intelligence and Cognitive Science Conference (MAICS 2001), Miami University, Oxford OH, 31 March-1 April 2001.

O'Malley, S.A. and S.A. DeLoach. "Determining When to Use an Agent-Oriented Software Engineering Paradigm." Second International Workshop on Agent-Oriented Software Engineering (AOSE-2001), in conjunction with the Fifth International Conference on Autonomous Agents 2001, Montreal, Canada, 29 May 2001.

Raphael, M. J. and S.A. DeLoach, "A Knowledge Base for Knowledge-Based Multiagent System Construction." National Aerospace and Electronics Conference (NAECON), Dayton OH, 10-12 October 2000.

Sparkman, C.H., S.A. DeLoach, and A.L. Self. "Automated Derivation of Complex Agent Architectures from Analysis Specifications." Second International Workshop on Agent-Oriented Software Engineering (AOSE-2001), The Fifth International Conference on Autonomous Agents 2001, Montreal Canada, 29 May 2001.

Bryson, J., K. Decker, S.A. DeLoach, M. Huhns, and M. Wooldridge (panel). "Agent Development Tools." in Intelligent Agents VII. Agent Theories Architectures and Languages, 7th International Workshop (ATAL 2000), Boston MA, 7-9 July 2000.

O'Malley, S.A., A.L. Self, and S.A. DeLoach. "Comparing Performance of Static Versus Mobile Multiagent Systems." National Aerospace and Electronics Conference (NAECON), Dayton OH, 10-12 October 2000.

FRANKE, MILTON E., (ENY)

*Schwabacher, Gregory J., Jeffrey P. Bons, & Milton E. Franke. "CFD Simulation of an Aircraft Turret Model with Fairings." AIAA Paper No. 2001-0889, AIAA 39th Aerospace Sciences Mtg. & Ex., Reno NV, 8-11 Jan 01.

*Hartsfield, C. R., P. I. King, and M. E. Franke. "Analysis of the Application of a Triggered Isomer Heat Exchanger as a Replacement for the Combustion Chamber in an Off-the-Shelf Turbojet," Proceedings of the 37th Heat Transfer and Fluid Mechanics Institute, California State Univ., Sacramento CA: 35-52, 31 May-1 June 2001.

Galbreath, Charles S. and M. E. Franke. "Quality Initiatives in the Air Force Development of Reusable Launch Vehicles." AIAA Paper No. 2001-4621, AIAA Space 2001 Conf. & Ex., Albuquerque NM, 28-30 August 2001.

GALLAGHER, Lt Col MARK A., (ENS)

*Cullenbine, Christopher A., Mark A. Gallagher, and James T. Moore. *A Tabu Search Approach to the Weapons Assignment Model*. National Meeting of the Institute for Operations Research and Management Sciences, San Antonio TX, November 2000.

Porter, Paul H. and Mark A. Gallagher. "Predicting R&D Budgets During Fiscal Curtailment with the Weibull Model." Department of Defense Cost Analysis Symposium, Williamsburg VA, January 2001.

Porter, Paul H. and Mark A. Gallagher. "Revised R&D Budgets for Funding Postponements." 69th Military Operations Research Society Symposium (MORSS), U. S. Naval Academy, Annapolis MD, June 2001.

Shariff, Guenever L. and Mark A. Gallagher. "Estimating Budget Relationships with the Leontief Input-Output Model." 69th MORSS, United States Naval Academy, Annapolis MD, June 2001.

Tapp, Charles S. and Mark A. Gallagher. "BRAC to the Future: Analysis of Cost Savings from Base Closures." 69th MORSS, United States Naval Academy, Annapolis MD, June 2001.

*Unger, Eric J., Mark A. Gallagher, and Edward D. White. "Predicting R&D Cost Overruns and Schedule Slips," 69th MORSS, United States Naval Academy, Annapolis MD, June 2001.

GOLTZ, MARK N., (ENV)

Goltz, M. N., F.-J. Eisenberg, R. K. Gandhi, S. M. Gorelick, G. D. Hopkins, P. L. McCarty, and L. H. Smith. "Bioenhanced In-well Vapor Stripping to Treat a TCE Groundwater Contamination Source," *Partners in Environmental Technology Technical Symposium and Workshop*, Washington, D.C., 27-29 November 2001.

Goltz, M. N., R. K. Gandhi, S. M. Gorelick, G. D. Hopkins, C. LeBron, P. L. McCarty, and M. Reinhard. "Application of Circulating Wells for *In Situ* Treatment of Contaminated Groundwater." *Internatl. Symposium on Soil and Groundwater Contamination Control Strategy*, Kyung Hee University, Seoul Korea, 21 June 2001.

Goltz, M. N., R. K. Gandhi, S. M. Gorelick, G. D. Hopkins, and P. L. McCarty. "Field Experiments Using *In Situ* Bioremediation to Treat Trichloroethylene (TCE)-Contaminated Groundwater." Proceedings of the Spring Meeting of the Korean Groundwater and Soil En. Society, Hanyang University, Seoul Korea, 13-14 April 2001.

*Young, H. C., C. A. Bleckmann, J. Huang, D. E. Reynolds, and M. N. Goltz. "Quantitative Validation of a Model of Chlorinated Ethene Natural Attenuation," *Sixth International In Situ and On-Site Bioremediation Symposium*, San Diego CA, 4-7 June 2001.

GUNSCH, GREGG H., (ENG)

Gunsch, G.H. "Tutorial on Information Warfare," NAECON, Dayton OH, 10 October 2000.

Gunsch, G.H. "Information System Security," IEEE/ACM, Dayton OH, 19 October 2000.

Gunsch, G.H. "Denial of Service Attacks," IEEE, Dayton OH, 21 June 2001.

HARTRUM, THOMAS C., (ENG)

Hartrum, T.C. and J.C. Nonnweiler. "Software System Integration Methodology Using Formal Specifications." 44th IEEE 2001 Midwest Symposium on Circuits and Systems (MWSCAS 2001), Dayton OH, 14-17 August 2001.

HEMINGER, ALAN R., (ENV)

Heminger, Alan R. "The Role of Information Resource Management in the career of the Comm-Info Officer of the Air Force Tomorrow," Advanced Comm-Info Training, Keesler Air Force Base MS, 19 July 2001.

*Heminger, Alan R., and David P. Biros. "The AFIT Information Resource Management and Information Systems Management Programs." briefed to Mr John Gilligan, SES, Deputy Chief Information Officer, 11 July 2001.

HENGEHOLD, ROBERT L., (ENP)

*Ahoujja, M., Y. K. Yeo, R. L. Hengehold, and J. E. Van Nostrand *"Temperature-dependent Hall-effect Measurements of Si-doped $Al_xGa_{1-x}N$ Grown by MBE,"* March 2001 Meeting of the American Physical Society, Seattle Washington, 12-16 March 2001 .

*Ahoujja, M., Y. K. Yeo, R. L. Hengehold, and J. E. Van Nostrand. *"Electrical Properties of MBE grown Si-doped $Al_xGa_{1-x}N$ as a Function of Nominal Al Mole Fraction up to 0.5,"* Spring Meeting of the Materials Research Society, San Francisco CA, 16-20 April 2001.

*Fellows, J. A., Y. K. Yeo, R. L. Hengehold, and L. Krasnobaev. *"Optical Characterization of Mg- and Si-Implanted GaN,"* Spring Meeting of the Materials Research Society, San Francisco CA, 16-20 April 2001 in.

*McKay, M.R., M.A. Marciniak, R.L. Hengehold, and G.W. Turner, *"Time resolved photoluminescence of InAs/GaInSb quantum well lasers,"* American Physical Society-Ohio Section Spring 2001 Meeting, Kent State University, 21 Apr 01.

Hengehold, R.L., D.E. Weeks, M.A. Marciniak, C.A. Bartholomew, M.R. McKay, P. Powers, and S. Kelley. *"Mid-infrared quantum-well opto-electronic devices."* 14th Annual Solid-State and Diode Laser Technology Review, Albuquerque NM, 21-24 May 01.

HILL, Lt Col RAYMOND R., (ENS)

*Baltacioglu, Erhan, James T. Moore, and Raymond R. Hill, Jr. "The Distributer's Three-Dimensional Pallet-Packing Problem: A Human Intelligence-Based Heuristic Approach," 69th Military Operations Research Society Symposium (MORSS), United States Naval Academy, Annapolis, MD, June 2001.

Bullock, Richard K., Gregory A. McIntyre, and Raymond R. Hill, Jr. "Using Agent-Based Modeling to Capture Airpower Strategic Effects," 2000 Winter Simulation Conference, Orlando, FL, December 2000.

*Harder, Robert W., Gary W. Kinney, Jr., Raymond R. Hill, Jr., and James T. Moore. "A Quick-Running Routing Algorithm for UAV Reconnaissance Operations," National Meeting of the Institute for Operations Research and Management Sciences, San Antonio TX, November 2000.

*Gregory A. McIntyre, J. O. Miller, and Raymond R. Hill, Jr. "Applications of Discrete Event Modeling to Military Problems," 2000 Winter Simulation Conference Orlando, FL, December 2000.

*Hill, Raymond R., Jr. and James T. Moore. "Tutorial on Tabu Search for Military Applications," 69th MORSS, United States Naval Academy, Annapolis MD, June 2001.

Hill, Raymond R., Jr. and Gregory A. McIntyre. "Genetic Algorithms for Model Optimization," Simulation Technology and Training Conference 2001, Canberra Australia, May 2001.

HUFFINES, Maj GARY R., (ENP)

Orville R.E. and G.R. Huffines. "Eleven years of cloud-to-ground lightning in the continental United States, 1989-1999: Large scale & small scale results," Int. Lightning Detection Conference, Tucson Arizona, 7-8 Nov 2000.

Huffines, G.R. and R.E. Orville. "Peak current variations in cloud-to-ground lightning over the continental United States: 1995-99," Int. Lightning Detection Conference, Tucson Arizona, 7-8 November 2000.

Orville R.E. and G.R. Huffines. "Eleven years of cloud-to-ground lightning in the continental Unites States, 1989-1999: Large scale and small scale results," American Geophysical Union 2000 Fall Meeting, San Francisco California, 15-19 December 2000.

Huffines, G.R. and R.E. Orville. "Cloud-to-ground lightning characteristics associated with tornadoes on 15 May 1998," American Geophysical Union 2000 Fall Meeting, San Francisco California, 15-19 December 2000.

Orville, R.E. and G.R. Huffines. "Lightning and climate modification within, near, and downwind of urban areas," 15th Weather Modification Conference, Albuquerque New Mexico, 14-19 January 2001.

JACOBS, Lt Col TIMOTHY M., (ENG)

Jacobs, T.M. and S. Butler. "Collaborative Visualization for Military Planning," SPIE's International Symposia on the Convergence of Information Technologies and Communications (ITCom), Denver CO, August 2001.

JODOIN, Lt Col VINCENT J., (ENP)

Jodoin, V.J. "Improvement of the Nuclear Weapon Source Model for the Hazard Prediction & Assessment Capability Code," Invited paper presented at 1st Annual DTRA/AF S&T Symp., Ft Belvoir VA, 17-18 Oct 00.

JOHNSON, Lt Col ALAN W., (ENS)

*Filcek, Paul G., Stephen M. Swartz, and Alan W. Johnson. "Mission Resources Value Assessment Technique—Value Focused Thinking," 69th Military Operations Research Society Symposium (MORSS), United States Naval Academy, Annapolis MD, June 2001.

*Wakefield, David J., Alan W. Johnson, and Stephen M. Swartz. "Mission Resources Value Assessment Technique—Genetic Annealing," 69th MORSS, United States Naval Academy, Annapolis MD, June 2001.

KHAROUFEH, JEFFREY P., (ENS)

Kharoufeh, Jeffrey P. and Natarajan Gautam. " Travel Time Distribution for a Vehicle with State-Dependent Velocity," Invited Session, National Meeting of the Institute for Operations Research and Management Sciences, San Antonio, TX, November 2000.

LAMONT, GARY B., (ENG)

Lamont, G.B. and B.A. Kadrovach. "Design and Analysis of Swarm Based Sensor Systems," 2001 Midwest Symposium of Circuits and Systems (MWSCAS'01), Dayton OH, August 2001.

Lamont, G.B. and J.B. Zydallis. "Solving of Discrete Multiobjective Problems Using an Evolutionary Algorithm with a Repair Mechanism," 2001 Midwest Symp. of Circuits & Systems (MWSCAS'01), Dayton OH, Aug 01.

Lamont, G.B. and D.M. Strong. "A Parallel Implementation and Analysis of the Genetic Rule and Classifier Construction Environment," 2001 Parallel and Distributed Processing Techniques and Applications Conference (PDPTA '01), Las Vegas NV, 25-28 June 2001.

Lamont, G.B. and B. Secrest. "Communication in Particle Swarm Optimization Illustrated by the Traveling Salesman Problem," 2001 Particle Swarm Optimization Workshop, Indianapolis IN, 6-7 April 2001.

Lamont, G.B., C. Kinzig, T. Hirunaragan, and R. Marmelstein. "Summarizing Data Sets for Classification," 2001 International Conference on Artificial Intelligence (IC-IA 2001), Las Vegas NV, 25-28 June 2001.

Lamont, G.B., K.R. Deerman, and R. Pachter. "Linkage Investigating Genetic Algorithms and Their Application to the Protein Structure Prediction Problem," ACM Symposium, on Applied Computing (SAC'01), Las Vegas NV, 11-14 March 2001.

Lamont, G.B., J.B. Zydallis, and D.A. Van Veldhuizen. "A Statistical Comparison of Multiobjective Evolutionary Algorithms Including the MOMGA-II," 2001 Evolutionary Multiobjective Optimization (EMO'01) Conference, Zurich, Switzerland, 7-9 March 2001.

Lamont, G.B., S.R. Michaud, J.B. Zydallis, and R. Pachter. "Scaling a Genetic Algorithm to Medium-Sized Peptides by Detecting Secondary Structures with an Analysis of Building Blocks, " First International Conference on Computational Nanoscience (ICCN'01), Hilton Head SC, 19-21 March 2001.

Lamont, G.B., S.R. Michaud, J.B. Zydallis, and R. Pachter. "Load Balancing the Parallel Fast Messy Genetic Algorithm for Increased Computational Efficiency in Attempting to Solve the Protein Structure Prediction Problem with a Heterogeneous Cluster of PCs," Tenth SIAM Conference on Parallel Processing for Scientific Computing (PP'01), Portsmouth VA, 12-14 March 2001.

Lamont, G.B., S.R. Michaud, J.B. Zydallis, P.K. Harmer, and R. Pachter. "Protein Structure Prediction with EA Immunological Computation," 2001 Genetic and Evolutionary Computation Conference (GECCO'01), San Francisco CA, 7-11 July 2001.

Lamont, G.B., B.A. Kadrovach, S.R. Michaud, J.B. Zydallis, B. Secrest, and D. Strong. "Extending the Simple Genetic Algorithm into Multi-Objective Problems Via Mendelian Pressure," 2001 GECCO Workshop on Multi-Objective Evolutionary Algorithms, San Francisco CA, 7-11 July 2001.

*Strong, D.M., E.P. Magee, and G.B. Lamont. "Implementation and Test of Wave Optics Code Using Parallel FFT Algorithms", in *Optics in Atmospheric Propagation and Adaptive Systems VI,* 2000.

LANNING, Maj JEFFREY W., (ENS)

*Chambal, Stephen P. and Jeffrey W. Lanning. "Probability and Statistics and Design of Experiments," Short course given at AF Test Pilot School, Edwards AFB CA, February 2001.

*Chambal, Stephen P. and Jeffrey W. Lanning. "Confidence Intervals, Hypothesis Testing, and Design of Experiments," Short course given at HQ AFOTEC, Kirtland AFB NM, March 2001.

*East, Julia A., Kenneth W. Bauer, Jr., and Jeffrey W. Lanning. "Feature Selection for Predicting Pilot Mental Workload," Artificial Neural Networks in Engineering International Conference, St. Louis, MO, November 2000.

LAPUMA, Maj PETER T., (ENV)

LaPuma, Peter T. "Recirculation Model for Industrial Air," *Air & Waste Management Association 94th Conference*, Orlando FL, June 2001.

LIEBST, BRADLEY S., (ENY)

*Hughson, M. C., and Liebst, B. S.. "A Vision for Graduate Aerospace Education in the 21st Century Air (and Space) Force," presented at the 39th Aerospace Sciences Meeting, Reno NV, 8-11 January 2001.

*Spenny, C.H., B.S. Liebst, T. Chelette, C. Folecsu, and J Sigda. "Development of a Sustainable-G Dynamic Flight Simulator," Presented at the AIAA Modeling and Simulation Technologies Conference, Denver CO, Aug 2000.

Liebst, Bradley S. "History of Flight and Aerospace Engineering." Address to the Honors Seminar of Metropolitan Dayton. Air Force Institute of Technology, Wright-Patterson AFB OH, 7 December 2000.

LOTT, Lt Col JAMES A., (ENG)

Lott, J.A. "Microcavity Lasers Based on Quantum Dots," invited talk for the Advanced Research Workshop on Semiconductor Nanostructures, Queenstown, South Island, New Zealand, 5-9 February 2001.

Lott, J.A. "Physics of Quantum Dot VCSELs," invited talk at the University of Canterbury, Christchurch, New Zealand, 9 February 2001.

Lott, J.A. "Fabrication and Assembly Studies of III-V Semiconductor Microlaser Disks and Actuators: Toward Optical Nanoelectromechanical Systems," Advanced Research Workshop, Future Trends in Microelectronics: The Nano-Mellenium, Ile de Bendor, France, 25-29 June 2001.

Lott, J.A. "Quantum Dot Vertical Cavity Lasers," invited talk for the IEEE Summer Topicals: VCSELs, Copper Mountain CO, 30 July-1 August 2001.

Lott, J.A., N.N. Ledentsov, V.M. Ustinov, Zh.I. Alferov, and D. Bimberg. "Tunable 1.3 μm Quantum Dot VCSELs on GaAs Substrates," invited talk for SPIE ITCOM 602, Denver CO, 20-24 August 2001.

Lott, J.A., W.J. Siskaninetz, and M.J. Noble. "Tunable Red Vertical Cavity Surface Emitting Lasers Using Electrostatic Actuation," Conference on Optoelectronics and Microelectronic Materials and Devices, Bundoora (Melbourne), Victoria, Australia 6-8 December 2000.

Lott, J.A., N.N. Ledentsov, V.M. Ustinov, D. Bimberg, and Zh.I. Alferov. "Continuous Wave 1.3 μm InAs-InGaAs Quantum Dot VCSELs on GaAs Substrates," invited talk for CLEO 01, Baltimore MD, 7-11 May 2001.

Lott, J.A., N.N. Ledentsov, V.M. Ustinov, M.V. Maximov, Zh.I. Alferov, and D. Bimberg. "Room Temperature Continuous Wave InAs-InGaAs Quantum Dot VCSELs on GaAs Substrates Emitting at 1.3 μm," IEEE Lasers and Electro-Optics Society Annual Meeting, Rio Grande, Puerto Rico, November 2000.

Starman, L.A., Jr., J.A. Lott, M.S. Amer, W.D. Cowan, and J.D. Busbee. "Stress Characterization Using Raman Spectroscopy on MEMS Devices, " IEEE Optical MEMS, Okinawa, Japan, 24-28 September 2001.

Starman, L.A., Jr., J. Busbee, J. Reber, J.A. Lott, and W.D. Cowan. "Stress Measurement in MEMS Devices," 4th International Conference on Modeling and Simulation of Microsystems, Hilton Head, SC, 19-21 March 2001.

Bimberg, D., M. Grundmann, V.M. Ustinov, Zh.I. Alferov, and J.A. Lott. "Quantum Dot Lasers," invited talk for IEEE Lasers and Electro-Optics Society Annual Meeting, Rio Grande, Puerto Rico, November 2000.

LOWTHER, Lt Col RONALD P., (ENP)

Lowther, Ronald P. "Weather Factors Involved in Operation Eagle Claw" [Analysis of the 1980 Iranian Hostage Rescue Attempt and Lessons Learned]," Address to Air Force Institute of Technology students and faculty. Air Force Institute of Technology, Wright-Patterson AFB OH, 28 January 2001.

MAGEE, Maj ERIC P., (ENG)

Magee, E.P. Optical Propagation Short Course at the Directed Energy Symposium, Kirtland AFB NM, 30 Oct 2000.

Hall, H.J., E.P. Magee, and W.D. Cowan. "Control of Line-Addressable Micromirror Phase Arrays Using Electromechanical Bistability", *High-Resolution Wavefront Control: Methods, Devices, and Applications III,* San Diego CA, 2001.

*Strong, D.M., E.P. Magee, and G.B. Lamont. "Implementation and Test of Wave Optics Code Using Parallel FFT Algorithms", *Optics in Atmospheric Propagation and Adaptive Systems VI,* Barcelona, Spain, 2000.

Roberts, M.L., M.A. Temple, R.A. Raines, and E.P. Magee. "Initial Acquisition Performance of a Transform Domain Communication System: Modeling and Simulation Results," MILCOM '00,* Los Angeles CA, 2000.

MALL, SHANKAR, (ENY)

Avram, J. B. and S. Mall. " Fatigue response of Thin Stiffened Aluminum Cracked Panels Repaired with Bonded Composite Patches" presented at DOD Composite Repair Workshop, Nov. 16-17, 2000.

Steel, S. G., L. P. Zawada, and S. Mall. "Fatigue Behavior of Nextel 720/Alumina Composite at Room and Elevated Temperature", presented at the 25th Annual Conference on Composites, Materials and Structures, Cocoa Beach, 20-24 Jan. 2001.

Mall, S. "Response of Graphite/Epoxy Laminates Embedded with Piezoelectric Sensor under Fatigue Loading," presented at 25th Annual Conference on Composites, Materials and Structures, Cocoa Beach, 20-24 Jan. 2001.

Mall, S., V. Jain, S. A. Namjoshi, and C. D. Lykins. "Fretting Fatigue Crack Initiation Behavior of Ti-6Al-4V," Third International Symposium on Fretting Fatigue, Nagaoka, Japan, May 15-18, 2001.

Sanders, J. F., S. K. Sharma, A. K. Rai, R. Weiju, and S. Mall. "Evaluation of Coatings for High Cycle Fatigue Mitigation", presented at The 2001 Annual Meeting of The Society of Tribologists and Lubrication Engineers (STLE), Orlando, FL, May 2001.

Neslen, C. and S. Mall. "Fretting Fatigue damage characterization and Crack Detection Analysis", presented at AEROMAT 2001, Long Beach CA, June 11-14, 2001.

Mall, S. "Fretting Fatigue Research at AFRL/ML" presented at AFOSR Metallic and Ceramics Materials Program Review, in Snowbird, Utah, August 20-21, 2001

MATHIAS, Maj KARL S., (ENG)

Mathias, K.S. taught a JAVA Short Course to AFIT/ENG and AFRL/IF, 26 Mar 01-1 Jun 01.

MARCINIAK, Lt Col MICHAEL A., (ENP)

*McKay, M.R., M.A. Marciniak, R.L. Hengehold, and G.W. Turner. "Time resolved photoluminescence of InAs/GaInSb quantum well lasers," American Physical Society-Ohio Section Spring 2001 Meeting, Kent State University, 21 Apr 01.

*Hengehold, R.L., D.E. Weeks**,** M.A. Marciniak, C.A. Bartholomew, M.R. McKay, P. Powers, and S. Kelley. "Mid-infrared quantum-well opto-electronic devices," 14th Annual Solid-State and Diode Laser Technology Review, Albuquerque, NM, 21-24 May 01.

MAYBECK, PETER S., (ENG)

Brehm, T.E. and P.S. Maybeck. "Generalized LQG Design by Filter and Controller Model Selection," 2000 IEEE Conference on Decision and Control, Sydney, Australia, December 2000.

MILLER, Lt Col J.O., (ENS)

*Alsing, Stephen G., Kenneth W. Bauer, Jr., and J.O. Miller. "Evaluating Competing Classifiers Using a Multinomial Selection Procedure," Artificial Neural Networks in Enrg. International. Conference, St. Louis, MO, Nov 00.

*Gregory A. McIntyre, J. O. Miller, and Raymond R. Hill, Jr. "Applications of Discrete Event Modeling to Military Problems," 2000 Winter Simulation Conference, Orlando, FL, December 2000.

MILLER, Lt Col, MIKEL, (ENG)

Tredway B., M. Miller, and J. Raquet. "Using GPS to Collect Trajectory Data for Ejection Seat Design, Validation, and Testing," ION GPS-2001*,* Salt Lake City UT, Sept 2001.

Miller, M. and J. Raquet. "Introduction to GPS," 6-week short course presented at AFRL, Jul-Aug 2001.

Hoffman, G.S. and M. Miller. "Real Time Personal Positioning and Physiological Monitoring System," 14th ION GPS-2001, Salt Lake City UT, September 2001.

MOORE, JAMES T., (ENS)

*Baltacioglu, Erhan, James T. Moore, and Raymond R. Hill, Jr. "The Distributer's Three-Dimensional Pallet-Packing Problem: A Human Intelligence-Based Heuristic Approach," 69th Military Operations Research Society Symposium (MORSS), United States Naval Academy, Annapolis, MD, June 2001.

*Calhoun, Kevin M., Richard F. Deckro, James W. Chrissis, James T. Moore, and John C. Van Hove. "A Heuristic Procedure for Scheduling and Re-Scheduling Allocated Attack Aircraft to Targets," 69th MORSS, United States Naval Academy, Annapolis, MD, June 2001.

*Cullenbine, Christopher A., Mark A. Gallagher, and James T. Moore. "A Tabu Search Approach to the Weapons Assignment Model," National Meeting of the Institute for Operations Research and Management Sciences (INFORMS), San Antonio, TX, November 2000.

*Harder, Robert W., Gary W. Kinney, Jr., Raymond R. Hill, Jr., and James T. Moore. "A Quick-Running Routing Algorithm for UAV Reconnaissance Operations," National Meeting of the INFORMS, San Antonio, TX, November 2000.

*Hill, Raymond R., Jr. and James T. Moore. "Tutorial on Tabu Search for Military Applications," 69th MORSS, United States Naval Academy, Annapolis, MD, June 2001.

OXLEY, MARK E., (ENC)

Oxley, M. E. and M. A Carter. "Capability Measures of Artificial Neural Network Architectures based on Soft Shattering," *SPIE AeroSense, Applications & Science of Computational Intelligence IV,* Orlando FL, April 2001

Oxley, M. E. "Measuring the Capability of Classifiers", AFRL/IFTA, Rome, NY. June 2001.

PACHTER, MEIR, (ENG)

Pachter, M. "IR Interceptor Missiles: Guidance and Control," AFIT Seminar, 8 November 2000.

Pachter, M. "Stochastic Modeling Based DGPS Estimation Algorithm," IEEE Conference on Decision and Control, Sydney, Australia, 12-15 December 2000.

Pachter, M. and J. Hebert. "Cooperative Aircraft Trajectories – Minimum Radar Exposure," Workshop for Cooperative Control and Optimization, Gainesville FL, 3-5 December 2000.

Pachter, M. and J. Hebert. "Minimizing Radar Exposure in Air Vehicle Path Planning," 41st Israel Annual Conference on Aerospace Sciences, Tel Aviv, Israel, 21-22 February 2001.

Pachter, M. and J. Hebert. "Optimal Aircraft Trajectories for Radar Exposure Minimization," American Control Conference, Arlington VA, 25-27 June 2001.

Pachter, M. and P.R. Chandler. "UAV Cooperative Control," American Control Conf., Arlington VA, 25-27 Jun 01.

Chandler, P.R. and M. Pachter. "UAV Cooperative Classification," Workshop for Cooperative Control and Optimization, Gainesville FL, 3-5 December 2000.

Chandler, P.R. and M. Pachter. "Dynamic Network for Flow Optimization Models for Air Vehicle Resource Allocation," American Control Conference, Arlington VA, 25-27 June 2001.

Hall, J. and M. Pachter. "Three Dimensional Formation Maneuvers," IEEE Conference on Decision and Control, Sydney, Australia, 12-15 December 2000.

Oppenheimer, M. and M. Pachter. "Adaptive Optics Controller for the Airborne Laser," AeroSense Conference, Orlando FL, 16-21 April 2001.

Chandler, P.R. and M. Pachter. "Cooperative Control of UAV Rendezvous," American Control Conference, Arlington VA, 25-27 June 2001.

Schindeler, N. and M. Pachter. "Phugoid Damping Control, " 2001 AIAA Guidance, Navigation and Control Conference, Montreal, Canada, 6-9 August 2001.

Chandler, P.R. and M. Pachter. "Hierarchical Control of Autonomous Teams," 2001 AIAA Guidance, Navigation and Control Conference, Montreal, Canada, 6-9 August 2001.

Wagner, G., D. Jacques, and M. Pachter. "An Analytical Study of Drag Reduction in Tight Formation Flight," 2001 AIAA Guidance, Navigation and Control Conference, Montreal, Canada, 6-9 August 2001.

Passino, K., M. Polycarpou, P.R. Chandler, and M. Pachter. "Distributed Cooperation and Control for Autonomous Air Vehicles," Workshop for Cooperative Control and Optimization, Gainesville FL, 3-5 December 2000.

Hebert, J., M. Novy, D. Jacques, and M. Pachter. "Cooperative Control of UAVs," 2001 AIAA Guidance, Navigation and Control Conference, Montreal, Canada, 6-9 August 2001.

PALAZOTTO, ANTHONY, N., (ENY)

Palazotto, A. and S. Naboulsi. "Elastic Plastic Damage Model For Composites Under High Intensity Loads", 15th Technical Conference for the American Society of Composites , Texas A&M Univ., 24-27 Sep 2001.

Palazotto,A.and A. Forral. " Nonlinear Dynamic Analysis of Plates and Shells Considering Chaotic Behavior", Presented at the ASME symposium on Nonlinear Shell Dynamics, Orlando FL, 6-10 Nov 2000.

Laird, D. and A. Palazotto. "High Speed Test Track Slipper/Rail Gouging Phenomena Simulation", ASME PressurE Vessel and Piping Conference, Atlanta,GA., July 22-26, 2001.

Palazotto,A. and Boatwright,J., Finite Element Analysis and Progressive Failure of a Composite Shell", presented at the Sixth U.S. National Congress of Computational Mechanics, Aug. 1-3,2001, Dearborn. MI.

PERRAM, GLEN P., (ENP)

Bagby, W.F., J.A. Orson, and G.P. Perram. "Spectral and Temporal Characterization of the Infrared Emissions from Conventional Munitions Detonations", AIAA Space Conf. & Exposition, Albuquerque NM, 27-30 Aug 2001.

Boss, N.C., R.R. Biggers, J.G. Jones, I. Maartense, G.P. Perram, R. Rogow, G. Koslowski, and T.L. Peterson. "Process Control for Pulsed-Laser Deposition of YBCO Superconductors," International Conference on Metallurgical Coatings and Thin Films, 30 April – 4 May 2001.

POTOCZNY, HENRY, (ENG)

Presented a program on cryptography to the Dayton Honor Seminars, 27 October 2000.

RAINES, Maj RICHARD A., (ENG)

Raines, R.A. "AFIT Warrior Brief," presented to the Commandant, Naval Post Graduate School, Wright-Patterson AFB OH, September 2001.

Raines, R.A. "AFIT Warrior Brief," presented to Air Force Materiel Command Single Manager Conference, Centerville OH, June 2001.

Raines, R.A. "AFIT Warrior Brief," presented to Air Force Institute of Technology Board of Visitors, Wright-Patterson AFB OH, March 2001.

Raines, R.A. "AFIT Warrior Brief," presented to Air Force Institute of Technology Foundation, Wright- Patterson AFB OH, February 2001.

Raines, R.A. "AFIT Warrior Brief," presented to Air University Command Board of Advisors, Maxwell AFB AL, January 2001.

*Thomas, R.W., R.A. Raines, R.O. Baldwin, and M.A. Temple. "Performance Analysis of Multicast Protocols for Mobile Satellite Communication Networks," 2001 International Symposium on Performance Evaluation of Computer and Telecommunication Systems, Orlando FL, 15-19 July 2001.

*Roberts, M.L., M.A. Temple, R.A. Raines, and E.P. Magee. "Initial Acquisition Performance of a Transform Domain Communication System: Modeling and Simulation Results," MILCOM '00, Los Angeles CA, 2000.

*Roberts, M.L., M.A. Temple, R.A. Raines, and J.P. Stephens, Sr., "Transform Domain Communications: Interference Avoidance and Acquisition Capabilities," IEEE National Aerospace and Electronics Conference, First Place Da Vinci Predictive Paper, Dayton OH, 10-12 October 2000.

*Klein, R.W., M.A. Temple, R.L. Claypoole, Jr., R.A. Raines, and J.P. Stephens, "Performance Characterization of a Proposed Wavelet Domain Communication System (WDCS)," 5th World Multi-Conference on Systematics, Cybernetics, and Informatics (SCI 2001) and 7th International Conference on Information Systems Analysis and Synthesis (ISAS 2001), Orlando FL, July 2001.

RAQUET, Maj JOHN F., (ENG)

*Tredway B., M. Miller, and J. Raquet. "Using GPS to Collect Trajectory Data for Ejection Seat Design, Validation, and Testing," ION GPS-2001, Salt Lake City UT, Sept 2001.

*Miller, M. and J. Raquet. "Introduction to GPS," 6-week short course presented at AFRL, Jul-Aug 2001.

REED, Maj TIMOTHY S., (ENV)

Reed, Timothy S. "Coming to America: An exploratory study of foreign firms conducting initial public offerings (IPOs) in the United States," Entrepreneurship Division, *Academy of Management Annual Meeting*, Washington, D.C., August 2001.

REHG, Maj MICHAEL T., (ENV)

Miceli, M. P., J. P. Near, J. van Scotter, and M. Rehg. "Individual differences and whistle-blowing," Annual Meeting of the Academy of Management, Washington D.C., August 2001.

ROH, WON B., (ENP)

Russell, T. H., W. B. Roh, and J. R. Marciante. "Incoherent Laser Beam Combining via Stimulated Brillouin Scattering in Multi-mode Fibers," IEEE/LEOS Annual Mtg. Rio Grande, Puerto Rico, 13-16 Nov 00.

Marciante, J.R. and W. B. Roh, "Analysis of the self-pumped phase-conjugation geometry in photo-refractive and Kerr materials," Annual Meeting of the Optical Society of America, Providence RI, 22-26 October 2000.

Russell, T. H. and W. B. Roh, "SBS Fiber Beam Combiner: the threshold of the second Stokes excitation," 2001 Solid State and Diode Laser Technical Review, SSDLTR-2001, Albuquerque NM, 21-24 May 01.

SHELLEY, MICHAEL L., (ENV)

*Shelley, Michael L., W. Brent Nixon, and Charles A. Bleckmann. "The Challenge of Pursuing a System Dynamics Approach in Analyzing Complex Natural Systems," The 19th International Conference of the System Dynamics Society, Altanta GA, 23-27 July 2001.

*Slusser, Thomas J., Michael L. Shelley, James P. Amon, Mark N. Goltz, and Abinash Agrawal. "Dechlorination potential of wetland soils for treatment of contaminated groundwater," Sixth International Conference on In Situ and On-Site Bioremediation, San Diego CA, 4-7 June 2001.

*Shelley, Michael L., James P. Amon, Abinash Agrawal, and Mark N. Goltz. "Abiotic & Biochemical Fate & Transport of Contaminants," Joint AFRL/DAGSI Research Prog. Symp. 2001, AFIT, WPAFB OH, Feb 2001.

SMITH, Lt Col E. PRICE, (ENY)

Smith, E., and A. Rogers. "Project Kookaburra: Teaching Systems Engineering Using the Design of Unmanned Aerial Vehicles," International Council on Sys. Enrg., Annual International Symp, Melbourne, Australia, Jul 01.

SWARTZ, Lt Col STEPHEN M., (ENS)

*Filcek, Paul G., Stephen M. Swartz, and Alan W. Johnson. "Mission Resources Value Assessment Technique—Value Focused Thinking," 69th Military Operations Research Society Symposium (MORSS), United States Naval Academy, Annapolis MD, June 2001.

Swartz, Stephen M., "Mission Resources Value Assessment Technique and the Advanced Logistic Project," 4th Annual Defense Advanced Research Projects Agency Symposium on the Advanced Logistics Project, Washington DC, December 2000.

*Wakefield, David J., Alan W. Johnson, and Stephen M. Swartz. "Mission Resources Value Assessment Technique—Genetic Annealing," 69th MORSS, United States Naval Academy, Annapolis, MD, June 2001.

TEMPLE, Maj MICHAEL A., (ENG)

Klein, R.W., M.A. Temple, R.L. Claypoole, Jr., R.A. Raines, and J.P. Stephens. "Performance Characterization of a Proposed Wavelet Domain Communication System (WDCS)," 5th World Multi-Conference on Systematics, Cybernetics, and Informatics (SCI 2001) and 7th International Conference on Information Systems Analysis and Synthesis (ISAS 2001), Orlando FL, July 2001.

Roberts, M.L., M.A. Temple, R.A. Raines, and E.P. Magee. "Initial Acquisition Performance of a Transform Domain Communication System: Modeling and Simulation Results," *MILCOM '00,* Los Angeles CA, 2000.

Roberts, M.L., M.A. Temple, R.A. Raines, and J.P. Stephens, Sr. "Transform Domain Communications: Interference Avoidance and Acquisition Capabilities," IEEE National Aerospace and Electronics Conference, First Place Da Vinci Predictive Paper, Dayton OH, 10-12 October 2000.

*Bradley, C.J., P.J. Collins, M.A. Temple, A.J. Terzuoli, Jr., G. Nesti, J. Fortuny, and G.D. Lewis. "A Study of Existing Bistatic Calibration Techniques," 2001 IEEE AP-S International Symposium on Electromagnetic Theory, Boston MA, May 2001.

*Bradley, C.J., P.J. Collins, M.A. Temple, A.J. Terzuoli, Jr., G. Nesti, J. Fortuny, and G.D. Lewis. "Issues in the Calibration of Bistatic RCS Measurements," IEEE Eleventh International Conference on Antennas and Propagation (ICAP 2001), Manchester, UK, April 2001.

*Bradley, C.J., P.J. Collins, M.A. Temple, A.J. Terzuoli, Jr., K.S. Wilson, J. Fortuny, and G.D. Lewis. "A Performance Analysis of Several Bistatic Calibration Techniques," IEEE 2001 International Geoscience and Remote Sensing Symposium, Sydney, Australia, 13 Sep 2001.

*Thomas, R.W., R.A. Raines, R.O. Baldwin, and M.A. Temple. "Performance Analysis of Multicast Protocols for Mobile Satellite Communication Networks," 2001 International Symposium on Performance Evaluation of Computer and Telecommunication Systems, Orlando FL, 15-19 July 2001.

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

*Bradley, C.J., P.J. Collins, M.A. Temple, A.J. Terzuoli, Jr., G. Nesti, J. Fortuny, and G.D. Lewis. "A Study of Existing Bistatic Calibration Techniques," 2001 IEEE AP-S International Symposium on Electromagnetic Theory, Boston MA, May 2001.

*Bradley, C.J., P.J. Collins, M.A. Temple, A.J. Terzuoli, Jr., G. Nesti, J. Fortuny, and G.D. Lewis. "Issues in the Calibration of Bistatic RCS Measurements," IEEE Eleventh International Conference on Antennas and Propagation (ICAP 2001), Manchester, UK, April 2001.

*Freundl, K.J., G. Agnes, P.J. Collins, A.J. Terzuoli, Jr., and K.S. Wilson. "Using an FVTD to Compare Control Surface Bistatis RCS Mechanisms," Electromagnetic Code Consortium Annual Symposium, U.S. Government Classified, Kauai, Hawaii, 28 May – 1 June 2001.

*Freundl, K.J., G. Agnes, P.J. Collins, A.J. Terzuoli, Jr. "Comparison of Control Surface Bistatic RCS Mechanisms," Military Sensing Symposia, 47th Annual Tri-Service Radar Symposium, U.S. Government Classified, Laurel MD, 22-24 May 2001.

*Golla, K.J., P.J. Collins, S. Schneider, and A.J. Terzuoli, Jr., "Broadband Application of High Impedance Ground Planes," 2001 IEEE/AP-S/URSI International Symposium, Boston MA, 8-13 July 2001.

*Bradley, C.J., P.J. Collins, M.A. Temple, A.J. Terzuoli, Jr., K.S. Wilson, J. Fortuny, and G.D. Lewis. "A Performance Analysis of Several Bistatic Calibration Techniques," IEEE 2001 International Geoscience and Remote Sensing Symposium, Sydney, Australia, 13 Sep 2001.

TRAGESSER, STEVEN G., (ENY)

Tragesser, S.G., "Formation Flying with Tethered Spacecraft" Presentation at a Tether Workshop. Air Force Research Lab, Space Vehicles Directorate, Kirtland AFB NM, October 2000.

WALTERS, Lt Col MICHAEL K., (ENP)

Early, Stephen A. and M.K. Walters. "Investigation of the Correlation Between Mechanical Turbulence and Optical Turbulence in the Atmosphere," 11th AMS Symposium on Meteorological Observations and Instrumentation, Albuquerque NM, January 2001.

WEEKS, DAVID E., (ENP)

*R.L. Hengehold, D.E. Weeks, M.A. Marciniak, C.A. Bartholomew, and M.R. McKay. "Mid-Infrared Quantum-Well, Opto-Electronic Devices," Solid State and Diode Laser Technology Review Technical Digest, Albuquerque NM, May 21-24, 2001.

D.E.Weeks, S.H.Yang, and T.A.Niday, "Scattering Matrix Elements and Cross Sections for the Reaction B ($^2P_{1/2}$) + H_2 (j) $\leftrightarrow$ B ($^2P_{3/2}$) + H_2 (j ')," Proceedings of the High Energy Density Matter (HEDM) Contractors' Conference, Park City UT, 24-26 October 2000.

X. Duan, D.E. Weeks, L.W. Burggraf. "Theoretical Calculations of SiC Clusters and SiC Surfaces," AFOSR Molecular Dynamics Contractor's Review, Irvine CA, 21-23 May 2001.

D.E. Weeks and S.H. Yang. "Ineleastic Scattering Matrix Elements and Cross Sections for the Reaction B ($^2P_{1/2}$) + H_2 (j = 0) $\leftrightarrow$ B ($^2P_{3/2}$) + H_2 (j')," AFOSR Molecular Dynamics Contractor's Review, Irvine CA, 21-23 May 2001.

S.H. Yang, D.E. Weeks, and TA. Niday. "Inelastic Scattering Matrix Elements, Cross Sections and Reaction Rates for Non-adiabatic B + H_2 Molecular Reaction Dynamics," APS March meeting, Seattle WA, March 12-16, 2001

WIESEL, WILLIAM E., (ENY)

Wiesel, William E. "The Dynamics of Relative Satellite Motion", AAS 01-163, AAS/AIAA Space Flight Mechanics Meeting, Santa Barbara CA, Feb. 11-15, 2001.

Wiesel, William E. "Trajectory Estimation for Satellite Clusters", AAS 01-342, AAS/AIAA Astrodynamics Conference, Quebec City, Quebec, Canada, 29 July-3 Aug 2001.

WOOD, AIHUA W., (ENC)

Wood, A. W. "A Hybrid Finite Element/Boundary Integral Method for Electromagnetic Scattering from 3D Cavities," AFOSR Electromagnetics Workshop, San Antonio, TX. January 2001.

Wood, A. W. "Hybrid Maxwell Solver for Radar Signature Prediction of LO Targets," Second Annual Joint AFRL/DAGSI Symposium, Air Force Institute of Technology, Wright-Patterson AFB, OH. February 2001.

YEO, YUNG KEE, (ENP)

Johnstone, D., M. Ahoujja**,** Y. K. Yeo**,** and L.Guido. "GaN Deep Level Capture Barriers," presented an invited talk to the SPIE Meeting, San Jose CA, 20-26 January 2001.

*Ahoujja, M., Y. K. Yeo, R. L. Hengehold, and J. E. Van Nostrand. "Temperature-dependent Hall-effect Measurements of Si-doped $Al_xGa_{1-x}N$ Grown by MBE," March 2001 Meeting of the American Physical Society, Seattle, WA,12-16 March 2001.

*Ahoujja, M., Y. K. Yeo, R. L. Hengehold, and J. E. Van Nostrand, "Electrical Properties of MBE grown Si-doped $Al_xGa_{1-x}N$ as a Function of Nominal Al Mole Fraction up to 0.5," Spring Meeting of the Materials Research Society.San Francisco CA,16-20 April 2001.

Fellows, J. A., Y. K. Yeo, R. L. Hengehold, and L. Krasnobaev, "Optical Characterization of Mg- and Si-Implanted GaN,"* presented at the Spring Meeting of the Materials Research Society held on 16-20 April 2001 in San Francisco.

3.9 OTHER SIGNIFICANT PROFESSIONAL ACTIVITIES

AGNES, Maj GREGORY S., (ENY)

CoChair SPIE Damping and Isolation Conference, Program Committee SPIE Smart Structures Conference

AIAA Adaptive Structures TC Member

AIAA Gossamer Structures Working Group

ASME Adaptive Materials and Structures TC Member

Reviewed 8 journal papers, 2 Army proposals

Consulted for NASA Working Group on Solar Sail Technology, New Millenium Working Group,

ANDREW, Col JOHN M., (ENS)

Member, Air Force Analytic Community Steering Group

Member, Data and Model Management Steering Group

Member, AF Scientist and Engineer Career Program Executive Panel

Member, Developing Aerospace Leaders Advanced Degree Education Process Team

AROSTEGUI, Maj MARVIN A., (ENS)

Referee, Decision Sciences Institute (DSI) National Meeting, November 2000

Referee, 6th International Conference, DSI, 2001

Track Chair, 6th International Conference, DSI, 2001

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

Referee, *International Journal of Smart Engineering System Design*

Referee, *Military Operations Research*

Referee, Artificial Neural Networks in Engineering International Conference, St. Louis, MO, November 2000

BONS, Maj JEFFREY P., (ENY)

Session Chair, ASME International Gas Turbine Conference in New Orleans, June 2001.

BRADY, Lt Col STEPHAN P., (ENS)

Member, Collaborative Planning, Forecasting and Replenishment Committee, Voluntary Inter-Industry Commerce Standards Association

CANFIELD, Lt Col ROBERT A., (ENY)

Executive Council Secretary, American Institute of Aeronautics and Astronautics (AIAA) Dayton-Cincinnati Section.

Awards Chairman, AIAA Multidisciplinary Design Optimization Technical Committee.

CHAMBAL, Capt STEPHEN P., (ENS)

Referee, *Journal of Quality Technology*

CHRISSIS, JAMES W. (ENS)

Member, Policies and Procedures Committee, Institute for Operations Research and Management Sciences

Member, Organizing Committee, and Working Group Co-Chair, Military Operations Research Society Workshop, *Operations Research Methods for Information Operations: A Battlespace of the 21st Century*, to be held in the spring of 2002

Organized session for the National Meeting of the Institute for Operations Research and Management Sciences, Miami, FL, November 2001

CLAYPOOLE, Maj ROGER L., JR., (ENG)

Chairman of the IEEE Signal Processing Society (Dayton Section)

Secretary of the Dayton Section of the IEEE.

CUNNINGHAM, WILLIAM A., (ENS)

Editorial Review Board, *Journal of Transportation Management*

Editorial Board, *Journal of Marketing Theory and Practice*

Executive Member, Board of Directors, Tri Rivers Waterway Development Association

D'AZZO, JOHN J., (ENG)

D'Azzo, J. J., was appointed as External Examiner for the University of Hong Kong. He evaluated the doctoral dissertation entitled, "Evolutionary Design of Fuzzy-Logic Controllers for Overhead Cranes," for the PhD candidate Cheung Tai Yam.

DECKRO, RICHARD F. (ENS)

Editor, *Military Operations Research* (as of 15 June 2001)

Associate Editor, *Military Operations Research* (through 14 June 2001)

Guest Editor, Special Issue, *Military Operations Research*, "Operations Research Methods for Information Operations: A Battlespace of the 21st Century," Vol. 6, No. 2 (2001)

Area Editor, Service Systems, *Computers & Industrial Engineering*

Editorial Advisory Board, *Computers & Operations Research*

Editorial Advisory Board, *IEEE Transactions on Engineering Management*

Chair, Working Group 8 (Information Operations/Information Warfare), 69th Military Operations Research Society Symposium, Annapolis, MD, June 2001

Chair, Bylaws, Policies, and Procedures Committee, Institute for Operations Research and Management Sciences (INFORMS)

Secretary/Treasurer, Military Applications Society, INFORMS

Invited to organize and chair MORS Symposium/Workshop, "Operations Research Methods for Information Operations: A Battlespace of the 21st Century," to be held in the spring of 2002

Member, Military Operations Research Society Publication Committee

Delegate, 12th France/US Simulation and Operations Research Symposium

Referee for numerous journals

FRANKE, MILTON E., (ENY)

Chair, Committee on Organization and Rules (COR). COR is a committee of the Board of Governors

American Society of Mechanical Engineers (ASME International).

ASME International representative to American Association for the Advancement of Science.

Member of the AIAA Technical Committee on Weapon Systems Effectiveness

GALLAGHER, Lt Col MARK A., (ENS)

Director, Military Operations Research Society

Chair, Prize Committee, Military Operations Research Society

Associate Editor, *Military Operations Research*

GOLTZ, MARK N., (ENV)

Member, Science Advisory Committee, U.S. EPA's Great Lakes/Mid-Atlantic Hazardous Substance Research Center.

City of Beavercreek Environmental Advisory Committee.

Consulting Associate Professor at Stanford University.

HEMINGER, ALAN R., (ENV)

Track Chair, IASTED Collaborative Technologies Symposium (CTS 2000), October 2000.

Subject matter expert for Defense Leadership and Management Program (DLAMP); evaluated DLAMP class at George Mason University, 5-6 April 2001.

Member, Management Information Systems Program Advisory Board, University of Dayton (since 1996)

HENGEHOLD, ROBERT L. (ENP)

Member of the Executive Committee and Honors and Awards Chair of the Ohio Section of the American Physical Society.

HILL, Lt Col RAYMOND R., (ENS)

Associate Editor, *Military Operations Research*

Technical reviewer for the textbook, *Applied Management Science: Modeling, Spreadsheet Analysis, and Communication for Decision making, 2nd Edition,* for John Wiley and Sons

HUFFINES, Maj GARY R., (ENP)

Vice President, Wright Memorial Chapter, American Meteorology Society.

HUGHSON, Lt Col MONTGOMERY C., (ENY)

Session Chair, CFD (Computational Fluid Dynamics) Techniques I, Dayton-Cincinnati Aerospace Science Symposium, Dayton OH, March 2001

JACQUES, Lt Col DAVID R., (ENY)

Member, Guidance Navigation and Control Technical Committee, American Institute of Aeronautics and Astronautics.

Summer Research Professor, AFRL/VACA.

JOHNSON, Lt Col ALAN W., (ENS)

Referee, *Naval Research Logistics*

Technical reviewer for management science textbook for John Wiley and Sons

LANNING, Maj JEFFREY W., (ENS)

Referee, *Journal of Quality Technology*

LIEBST, BRADLEY S., (ENY)

Member, Dayton-Cincinnati AIAA Executive Council.

Member, 2001 AIAA Cincinnati-Dayton Aerospace Symposium Committee.

President, Honors Seminars of Metropolitan Dayton.

MAGEE, Maj ERIC P., (ENG)

AFIT Signal Processing Representative for the WSU PhD Oversight Committee.

ENG representative on the Outreach Committee.

DAGSI academic advisor.

MAYBECK, PETER S., (ENG)

Chaired the IEEE Dayton Section Student Branch Cross-Fertilization Meeting, enhancing the communication among area colleges and the Dayton Section.

Dayton Section IEEE Student Activities Chairman and member of the Section's Executive Committee.

MILLER, Lt Col J.O., (ENS)

Technical reviewer for the reference book, *Space Systems Modeling and Simulation*

MILLER, Lt Col MIKEL M., (ENG)

Elected the National Space Representative for the Institute of Navigation (ION) and served as the 2000-2001 Chairman of the Dayton Section of the ION.

MOORE, JAMES T., (ENS)

Associate Editor, *Military Operations Research*

Associate Editor, *Naval Research Logistics*

AFIT lead for research consortium (University of Texas at Austin, Air Mobility Command, and AFIT)

Co-Chair, Working Group 18 (Mobility and Transport of Forces), 69th Military Operations Research Society Symposium, Annapolis, MD, June 2001

OXLEY, MARK E., (ENC)

Member, Alumni Board for Department of Mathematics, Physics and Geography, Cumberland College, Williamsburg, KY.

PACHTER, MEIR, (ENG)

Member of AFOSR Review Panel

Member of AFRL/VACA AFOSR *Star Team*

PERRAM, GLEN P., (ENP)

Director, AFIT Center for Directed Energy

Panel Member, OSD High Energy Laser Joint Technology Office, Chemical Laser Working Group

Reviewer, Cooperative Grants Program of the U.S. Civilian Research and Development Foundation

Reviewer, Ballistic Missile Defense Organization, Small Business Innovative Research Proposals

RAINES, Maj RICHARD A., (ENG)

Text Book Reviewer, *Satellite Communications 2e,* J. Wiley Publishers

Technical Paper Referee, *IEEE Communications Letters*

ROH, WON B., (ENP)

Member, Review Panel for "the SRS/Fiber optic wavelength shifter" program, a Joint Technology Office (JTO) sponsored R&D program to Boeing Company, managed through NRL

SPENNY, CURTIS H., (ENY)

AFIT representative: Ohio Board of Registration for Professional Engineers and Surveyors.

AFIT representative, Ohio Space Grant Consortium.

Member, WSU PhD Program Coordinating Committee (Human Interaction with Complex Systems).

Scholarship Selection Committee, Honors Seminars of Metropolitan Dayton.

SWARTZ, Lt Col STEPHEN M., (ENS)

Referee, *Production and Operations Management*

Session/track chair and discussant for Production and Operations Management Society and Decision Sciences Institute conferences

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

Local Chapter Chair for Joint IEEE Societies APS, MTT, GRS.

3.10 SPECIAL AWARDS OR SPECIAL RECOGNITION

3.10.1 FACULTY

BAUER, KENNETH W., (ENS)

Received the 2000 Gage H. Crocker Outstanding Professor Award as the individual who made the most significant contribution to the AFIT mission

BIROS, Lt Col DAVID P., (ENV)

Air Force Association, Wright Memorial Chapter, 2001 Senior Military Officer of the Year

BONS, Maj JEFFREY P., (ENY)

Co-recipient of the 2001 AFRL Scientific/Technical Achievement Team Award.

Co-recipient of AFRL/PR's Annual S.D. Heron Award for Basic Research, 2000.

BRADY, Lt Col (sel) STEPHAN P., (ENS)

Received the 2000 Professor Ezra Kotcher Award for significant, substantive contribution to curriculum or instruction development within AFIT

CANFIELD, Lt. Col ROBERT, (ENY)

Associate Fellow, American Institute of Aeronautics and Astronautics, Jan 2000.

CLAYPOOLE, Maj ROGER L., (ENG)

Air University Company Grade Officer of the Year, 2000.

*Paper titled "Performance Characterization of a Proposed Wavelet Domain Communication System (WDCS)" selected as the best paper presented in the session Transmission System III of the 5th World Multi-Conference on Systematics, Cybernetics, and Informatics (SCI 2001), and 7th International Conference on Information Systems Analysis and Synthesis (SAS 2001).

D'AZZO, JOHN J., (ENG)

Associate Fellow of the American Institute of Aeronautics and Astronautics.

DECKRO, RICHARD F., (ENS)

Selected as Editor, *Military Operations Research*

Best Presentation, "A Preliminary Analysis of an Iranian Acquisition Social Network" (S), Information Operations/Information Warfare Working Group, 69th Military Operations Research Society Symposium, Annapolis, MD, June 2001

GALLAGHER, Lt Col MARK A., (ENS)

Promoted to Associate Professor of Operations Research

GOLTZ, MARK N., (ENV)

Awarded Institute of Environmental Science and Research International Fellowship

GRIFFIS, Maj STANLEY E., (ENS)

Awarded the 2001 University of Arkansas Supply Chain Management Research Center Doctoral Dissertation Proposal Award

GUSTAFSON, STEVEN C., (ENG)

Gustafson, S.C., received the Air Force Aeronautical Systems Center Scientific Achievement Award (IDEA 2001 – 0079), 5 October 2000.

HILL, Lt Col RAYMOND R., (ENS)

Promoted to Associate Professor of Operations Research

Received the 2000 General Bernard A. Schriever Award for outstanding contributions to the advancement of aerospace power, technology, and doctrine

JACQUES, Lt Col DAVID R., (ENY)

Member of AFRL/VACA Star Team receiving award for basic research from AFOSR.

JOHNSON, Lt Col ALAN W., (ENS)

Promoted to Associate Professor of Logistics Management

LOTT, Lt Col JAMES A., (ENG)

Lott, J.A., "Microcavity Surface Emitting Lasers," United States Patent No. 6,266,357, 24 July 2001.

MALL, SHANKAR, (ENY)

Neslen, C. and Mall, S., "Fretting Fatigue Damage Characterization and Crack Detection Analysis", presented at AEROMAT 2001, June 11-14, 2001, Long Beach, CA, USA. Selected Best Paper of the AEROMAT 2001.

MATHEWS, KIRK A., (ENP)

Promoted to Professor of Nuclear Engineering

MOORE, JAMES T., (ENS)

Granted tenure

Inducted as an Eminent Engineer into Tau Beta Pi, the national engineering honor society

NANRY, COL WILLIAM P., (ENS)

Selected by the AFIT Student Association as the Fall 2000 "Instructor of the Quarter" for the Graduate School of Engineering and Management.

PACHTER, MEIR, (ENG)

Received the 2000 Special Act/Service Award for his contributions in the field of flight control while working in the flight control while working in the Control Theory and Optimization Branch of the Air Vehicles Directorate. AFRL/VACA.

Received the 2000 Affiliate Societies Council's Outstanding Engineers and Scientists Award for research in aircraft formation flight control, adaptive and reconfigurable flight control, differential games, and signal processing for GPS navigation and electronic warfare.

Elected an *Associate Fellow of AIAA*.

Nominated for the AFRL/VA 2000 *Foulois Award.*

PALAZOTTO, ANTHONY N., (ENY)

Associate Editor AIAA journal

RAINES, Maj RICHARD A., (ENG)

Received the Air Force Commendation Medal for outstanding achievement in the development and presentation of the AFIT Warrior Brief to senior leaders of the Air Force, January 2001.

*Paper titled "Performance Characterization of a Proposed Wavelet Domain Communication System (WDCS)" selected as the best paper presented in the session Transmission System III of the 5th World Multi-Conference on Systematics, Cybernetics, and Informatics (SCI 2001), and 7th International Conference on Information Systems Analysis and Synthesis (SAS 2001).

REHG, Maj MICHAEL T., (ENV)

Best Paper Award in the Social Issues in Management Division for Miceli, M. P., J. P. Near, J. van Scotter, and M. Rehg. "Individual differences and whistle-blowing," presentation at the *Annual Meeting of the Academy of Management*, Washington, D.C. (August 2001).

SWARTZ, Lt Col STEPHEN M., (ENS)

Recognized as the Outstanding Operations Research Educator by the AFIT Student Chapter of the Institute for Operations Research and the Management Sciences

TEMPLE, MICHAEL A., (ENG)

Brendle, J.F., J.P. Stephens, M.A. Temple, and R.S. Parks, "Length Selectable, Hardware Efficient Pseudorandom Code Genrarot," United States Patent No. 6,292,506, 18 September 2001.

Paper titled "Performance Characterization of a Proposed Wavelet Domain Communication System (WDCS)" selected as the best paper presented in the session Transmission System III of the 5th World Multi-Conference on Systematics, Cybernetics, and Informatics (SCI 2001), and 7th International Conference on Information Systems Analysis and Synthesis (SAS 2001).

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

IEEE Certificate of Appreciation

WALTERS, Lt Col MICHAEL K., (ENP)

Promoted to Associate Professor of Atmospheric Physics

3.10.2 STUDENTS

BALTACIOGLU, 1Lt ERHAN, TURKISH AF (ENS)

Received the Military Operations Research Society (MORS) Graduate Research Award for research that led to demonstration of, or potential for, increased operating effectiveness of currently available or near term assets.

BENNETT, Capt SHEILA G., (ENV)

Master's thesis, *A Process for Vectoring Offensive Information Warfare as a Primary Weapon Option within the United States Air Force* (Faculty Advisor: Dr. Richard Deckro, AFIT/ENS), won the 2001 Armed Forces Communications and Electronics Association Information Resources Management Award.

BOONE, Capt CHRISTOPHER, (ENS)

Received the Dr. Anthony D'Angelo Student Leadership Award given to a member in each graduating class in recognition of the student whose leadership and mentorship contributions to his/her fellow students are judged superior.

DRAB, Capt JESS W., (ENY)

Drab, Jess W., "Turbine Glade Surface Roughness Effects on Shear Drag and Heat Transfer". Selected as best M.S. Thesis from ENY department for 2001 academic year.

FILCEK, Capt PAUL G., (ENS)

Received the Louis F. Polk Award for advanced contributions in his professional field and reflecting the highest standards of academic and professional accomplishment.

GALBREATH, Capt CHARLES S., (ENY)

Galbreath, Charles S. and M. E. Franke, "Quality Initiatives in the Air Force Development of Reusable Launch Vehicles," AIAA Paper No. 2001-4621, AIAA Space 2001 Conference and Exposition, Albuquerque, NM, 28-30 August 2001.

HARTSFIELD, Capt CARL R., (ENY)

Hartsfield, C. R., P. I. King, and M. E. Franke, "Analysis of the Application of a Triggered Isomer Heat Exchanger as a Replacement for the Combustion Chamber in an Off-the-Shelf Turbojet," Proceedings of the 37th Heat Transfer and Fluid Mechanics Institute, California State University, Sacramento CA, pp. 35-52, 31 May-1 June 2001.

MARTINEZ, Capt STEVEN L., (ENS)

Received the Lt Edwin E. Aldrin, Sr., Award given in recognition of the student who has displayed exceptional leadership characteristics.

Received the International Society of Logistics Jerome G. Peppers, Jr., C.P.L., Outstanding Student Award given to a member in each graduating class whose academic record and contributions to the field of logistics are judged superior.

NOEL, Capt JEREMY B., (ENS)

Received the Dean's Award given in recognition of the ENS master's thesis that reflects the most exceptional research contribution to scientific, management, and engineering knowledge.

RENFRO, Capt ROBERT S., II, (ENS)

Best Presentation, "A Preliminary Analysis of an Iranian Acquisition Social Network" (S), Information Operations/Information Warfare Working Group, 69th Military Operations Research Society Symposium, Annapolis, MD, June 2001

SCHWABACHER, Capt GREGORY J., (ENY)

Schwabacher, Gregory J., Jeffrey P. Bons, and Milton E. Franke, "CFD Simulation of an Aircraft Turret Model with Fairings," AIAA Paper No. 2001-0889, AIAA 39th Aerospace Sciences Meeting and Exhibit, Reno, NV, 8-11 January 2001, 14 pages.

ZALEWSKI, Maj DANIEL E., (ENP)

Zalewski, Daniel E. *Assessment of the Effects of Entrainment and Wind Shear on Nuclear Cloud Rise Modeling*. Dean's Research Award Recipient. AFIT/GNE/ENP/01M-06. Faculty Advisor: Lt Col Vincent J. Jodoin, DSN: 785-3636, ext 4506. Sponsor: DTRA/TDOC & AFOSR/CC.

APPENDICES

APPENDIX A FACULTY CREDENTIALS

AGNES, GREGORY S., Maj, Assistant Professor of Aerospace Engineering, Department of Aeronautics and Astronautics, (AFIT/ENY); BSAE, Rensselaer Polytechnic Institute, 1989; MSAE, University of Maryland, 1991; PhD, Engineering Mechanics, Virginia Tech, 1997. Major Agnes previously worked in the Structural Dynamics Branch of the Air Force Research Laboratory. His research interests center around inflatable/rigidizable space structures, active and passive vibration suppression, smart structures, and nonlinear dynamics. He has published numerous conference and journal papers and is a member of the AIAA, ASEE and ASME. Tel. 937-255-6565, x4317 (DSN: 785-6565 x 4317), email = Gregory.Agnes@afit.edu

ANDREW, JOHN M., Col, Assistant Professor of Operations Research and Head, Dept of Operational Sciences (AFIT/ENS); BS, United States Air Force Academy, 1976; SM, Harvard University, 1982; PhD, Harvard University, 1985. Col Andrew's research interests include training simulations and stochastic processes. He is a member of the Institute for Operations Research and Management Science (INFORMS) and the Military Operations Research Society (MORS). Tel. 937-255-6565, x4329 (DSN 785-6565, x4329), email = John.Andrew@afit.edu

ANTHENIEN, RALPH A. JR., CAPT, Assistant Professor of Aerospace Engineering, Department of Aeronautics and Astrounautics, (AFIT/ENY); BS, University of California at Berkeley, 1993; MS UC Berkeley, 1996; PhD, UC Berkeley, 1998. Capt. Anthenien's research interests include developing compact combustors for gas turbine engines, smoldering combustion, combustion in microgravity and micro-scale combustion. Tel. 937-255-3636 x4643 (DSN: 785-3636 x4643), email = Ralph.Anthenien@afit.edu

AROSTEGUI, MARVIN A., Maj, Assistant Professor of Logistics Management, Dept of Operational Sciences (AFIT/ENS); BA, Applied Mathematics, University of California at Berkeley, 1987; MS, Logistics Management, Air Force Institute of Technology, 1992; PhD, Business Administration, University of Houston, 1997. Maj Arostegui's research interests include reparable inventory management, supply chain management, metaheuristics (tabu search, simulated annealing, and genetic algorithms).

AYRES, BRADLEY J., Lt Col, Instructor of Acquisition Management, Department of Systems and Engineering Management (AFIT/ENV); MS, Software Systems Management, Air Force Institute of Technology. Lt Col Ayres' research interests include management of software development projects, control theory and governance structures within organizations, and institutional theory as applied to organizations. Tel. 937-255-3636, x4798 (DSN: 785-3636, x4798), email = Bradley.Ayres@afit.edu

BAILEY, WILLIAM F., Associate Professor of Physics, Department of Engineering Physics, (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/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 have been 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., **Maj,** Assistant Professor of Computer Engineering, Department of Electrical and Computer Engineering (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, queuing theory, performance modeling, and analysis and simulation of real-time communication systems. Tel. 937-255-3636, x4612 (DSN: 785-3636, x4612), 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 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

BAUER, KENNETH W., Jr., Professor of Operations Research, Dept of Operational Sciences (AFIT/ENS); 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, x4328 (DSN 785-6565, x4328), email = Kenneth.Bauer@afit.edu

BENTON, R. NICOLE, Maj, Instructor of Statistics, Department of Mathematics and Statistics, (AFIT/ENC); BS, Creighton University, 1985; MS, Air Force Institute of Technology, 1986; PhD candidate, Colorado State University. Maj Benton's research interests include queuing networks, stochastic processes, and reliability theory. Tel. 937-255-3636, x4513 (DSN: 785-3636, x4513), email = Robin.Benton@afit.edu

BIROS, DAVID P., Lt Col, Assistant Professor of Information Resource Management, Department of Systems and Engineering Management (AFIT/ENV); BA, History and Secondary Education, Flagler College, 1985; MA, Public Administration, Troy State University 1990; MS, Information Resource Management, Air Force Institute of Technology, 1992; PhD, Information and Management Sciences (minor concentration in Strategy), Florida State University, 1998. Lt Col Biros' research interests include information warfare, deception and deception detection in information technologies, biases in communication, and the diffusion of technology. Tel. (937) 255-3636 x4826 (DSN: 785-3636, x4826), email = David.Biros@afit.edu

BLECKMANN, CHARLES A., Associate Professor of Engineering and Environmental Management, Department of Systems and Engineering Management (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 wastewater analyses and treatment, hazardous waste identification and management, land treatment of hazardous and non-hazardous wastes, groundwater monitoring and remediation, biodegradation of wastes, environmental compliance audits, and bioassays. Tel. 937-255-3636, x4721 (DSN: 785-3636, x4721), email = Charles.Bleckmann@afit.edu

BONS, JEFFREY P., Maj, Associate Professor of Aeronautical Engineering, Department of Aeronautics and Astronautics, (AFIT/ENY); BS, Massachusetts Institute of Technology, 1988; MS, Massachusetts Institute of Technology, 1990; PhD, Massachusetts Institute of Technology, 1997. Major Bons' research interests include fluid dynamics and heat transfer with a focus on applications to gas turbine engines. He has published numerous articles relating to turbine heat transfer and turbine cooling with a research emphasis on experimentation. Tel. 937-255-6565 x4327 (DSN: 785-6565, x4327), email = Jeffrey.Bons@afit.edu

BRADY, STEPHAN P., Lt Col, Assistant Professor of Logistics Management, Dept of Operational Sciences (AFIT/ENS); BA, Political Science, Western Maryland College, 1985; MPA, Public Administration, New Hampshire University, 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 supply chain management, consumable and reparable inventory management, simulation, and modeling. Tel. 937- 255-6565, x4284 (DSN 785-6565, x4284), 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 interest's 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 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

BROTHERS, HEIDI S., Lt Col, Assistant Professor of Engineering Management**,** Department of Systems and Engineering Management (AFIT/ENV); BS, Civil Engineering, Portland State University, 1984; MS, Systems Management, University of Southern California, 1987; PhD, Environmental Engineering, University of Cincinnati, 1995. Lt Col Brothers' research interests include facility management, engineering management, contract management, and environmental management. Lt Col Brothers is a professional engineer. Tel. 937-255-3636, x4800 (DSN: 785-3636 x4800), email = Heidi.Brothers@afit.edu

BURGGRAF, LARRY W., Associate Professor of Engineering Physics, Department. of Engineering Physics (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's research applies surface physics and radiation measurements including photoluminescence spectroscopy, infrared spectroscopy, raman spectroscopy, spectro-electrochemistry and nuclear spectrometry to solve DoD problems. Applications include chemical and biochemical detection, MEMS photothermal IR detectors, nuclear fuels detection, uranium oxide surface chemistry, chemical toxicity, and imaging radiation sources and hidden interfaces using Compton CT imaging. His surface modeling research centers on using hybrid molecular mechanics/molecular orbital models to predict surface structures for silicon, silicon carbide, silica and alumina surfaces. Tel. 937-255-3636, x4507 (DSN: 785-3636, x4507), email = Larry.Burggraf@afit.edu

CANFIELD, ROBERT A., Lt Col, Associate Professor in Aeronautics and Astronautics, Department of Aeronautics and Astronautics, (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 thirteen journal articles and sixteen 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, x4641, (DSN: 785-3636, x4641), email = Robert.Canfield@afit.edu

CHAMBAL, STEPHEN P., Capt, Assistant Professor of Operations Research, Department of Operational Sciences (AFIT/ENS); BS, United States Air Force Academy, 1993; MS, Arizona State University, 1994; PhD, Arizona State University, 1999. Capt Chambal's research interests include decision analysis, modeling and simulation, and reliability analysis. Tel. 937-255-6565, x4314 (DSN 785-6565, x4314), email = mailto:Stephen.Chambal@afit.edu

CHILTON, LAWERENCE K., Lt Col, Assistant Professor of Mathematics, Department of Mathematics and Statistics, (AFIT/ENC); BA, University of California at San Diego, 1981; MS, University of Illinois at Urbana-Champaign, 1988; PhD, University of Maryland, Baltimore, 1997. Lt Col Chilton's interests include finite element analysis, h- and p- refinement, linear and nonlinear elasticity, mixed methods for nearly incompressible materials, computational electromagnetics. His recent papers have been on locking free mixed methods, mixed methods for geometrically nonlinear elasticity, and mixed methods on curvilinear elements. Tel. 937-255-3636, x4523 (DSN: 785-3636, x4523), email = Lawrence.Chilton@afit.edu

CHRISSIS, JAMES W., Associate Professor of Operations Research, Dept of Operational Sciences (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 industrial engineering and operations research, engineering optimization, mathematical programming, stochastic systems, and simulation. Dr. Chrissis has been a member of the faculties of Virginia Polytechnic Institute and the University of South Florida. He is a member of the Institute for Operations Research and Management Sciences, The Society for Industrial and Applied Mathematics, the Military Operations Research Society, The American Institute of Aeronautics and Astronautics, and Sigma Xi. Tel. 937-255-6565, x4338 (DSN 785-656, x4338), email = James.Chrissis@afit.edu

CLAYPOOLE, ROGER L., Maj, Assistant Professor of Electrical Engineering, Department of Electrical and Computer Engineering (AFIT/ENG). BS, Massachusetts Institute of Technology, 1989; MS, Air Force Institute of Technology, 1994; PhD, Rice University, 2000. His research interests include wavelet theory, signal estimation, image compression, and adaptive transform theory. Tel. 937-255-3636, x4625 (DSN: 785-3636, x4625), email = Roger.Claypoole@afit.edu

COBB, RICHARD G., Maj, USAF, Assistant Professor of Aerospace Engineering, Department of Aeronautics and Astronautics, (AFIT/ENY); BS, the Pennsylvania State University, 1988; MS, Air Force Institute of Technology, 1992; PhD, Air Force Institute of Technology, 1996. Maj Cobb's 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, Major 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, Major 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, Major Cobb served as program manager for the Air Force Research Laboratory's Tech Sat 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, Major 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

COLLINS, PETER J., Maj, Associate Professor, Department of Electrical and Computer Engineering, (AFIT/ENG); BA, Bethel College, St. Paul, Minnesota, 1985; BSEE, University of Minnesota, 1985; MSEE, Air Force Institute of Technology, 1990; PhD, Air Force Institute of Technology, 1996. Maj Collins' research interest areas include computational electromagnetics, electromagnetic radiation and scattering, radar cross section (RCS) reduction and measurement, frequency selective surfaces (FSS), antenna design and analysis, and electromagnetic design optimization techniques. He has published several papers on radiation and scattering.

CUNNINGHAM, WILLIAM A. III, Professor of Logistics Management, Dept of Operational Sciences (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, Dept of Operational Sciences (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 applied mathematical programming and optimization, information operations, 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 boards of *Computers & Operations Research* and *IEEE Transactions on Engineering Management*. In addition to having published a number of articles and proceedings, he consults to a variety of both public and private sector organizations. 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/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

DELOACH, SCOTT A., Maj, Assistant Professor of Computer Science and Engineering, Department of Electrical and Computer Engineering (AFIT/ENG); BS, Iowa State University, 1982; MS, Air Force Institute of Technology, 1988; PhD, Air Force Institute of Technology, 1996. Maj DeLoach's research interests include artificial intelligence, multiagent systems engineering and design, automated software engineering and formal methods.

DELONEY, THURMON L., II, Col, Department of Electrical and Computer Engineering, (AFIT/ENG); BS, North Carolina A&T State University, 1976; MS, Massachusetts Institute of Technology, 1978; PhD, Stanford University, 1987. Col Deloney's research interests are in ballistic missile defense and free electron lasers.

ERICKSEN, WILHELM S., Professor Emeritus of Mathematics, Department of Mathematics and Statistics, (AFIT/ENC); BA, St. Olaf College, 1936; MS, University of Wisconsin, 1939; PhD, University of Wisconsin, 1942. Dr. Ericksen's research interests include applied mathematics, differential equations, and tensor analysis. He has published on topics of elasticity of non-isotropic material, inverse pairs of test metrics, and dynamics of rigid bodies. Tel. 937-255-3636, x4678 (DSN: 785-3636, x4678), email = Wilhelm.Ericksen@afit.edu

FRANKE, MILTON E., Professor of Aerospace Engineering, Department of Aeronautics and Astronautics, (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, electrostatic cooling, boundary layers, ground-vehicle aerodynamics, lean initiatives, 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 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

GALLAGHER, MARK A., Lt Col, Associate Professor of Operations Research, Dept of Operational Sciences (AFIT/ENS); BS, United States Air Force Academy, 1983; MS, Air Force Institute of Technology, 1986; PhD, Air Force Institute of Technology, 1992. Lt Col Gallagher's research interests include cost analysis, military strategic effects and strategic warfare modeling. He is a Director and Prize Committee Chair of the Military Operations Research Society (MORS) and an Associate Editor of *Military Operations Research*. Lt Col Gallagher has published in *Operations Research*, *Management Science*, *Annals of Operations Research* and other journals.

GOLTZ, MARK N., Professor of Engineering and Environmental Management**,** Department of Systems and Engineering Management (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

GREINER, MICHAEL A., Capt, Assistant Professor of Acquisition Management, Department of Systems and Engineering Management (AFIT/ENV); BS, Physics, University of Portland, 1992; MS, Cost Analysis, Air Force Institute of Technology, 1996; PhD, Industrial Engineering, Arizona State University, 2001. Capt Greiner's research interests include the role of cost analysis in the acquisition decision making process, R&D portfolio selection and management, applying best commercial practices to the DoD acquisition process, and risk analysis and mitigation. Tel. (937) 255-3636, x4588 (DSN: 785-3636, x4588), email = Michael.Greiner@afit.edu

GRIFFIS, STANLEY E., Maj, Assistant Professor of Logistics Management, Dept of Operational Sciences (AFIT/ENS); 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. 937-255-6565, x4333 (DSN 785-6565, x4333), email = Stanley.Griffis@afit.edu

GUNSCH, GREGG H., Assistant Professor of Computer Engineering, Department of Electrical and Computer Engineering, (AFIT/ENG); BSEE, University of North Dakota, 1979; MSEE, Air Force Institute of Technology, 1983; PhD, University of Illinois, 1991. Dr. Gunsch's research interests include information survivability, information warfare, artificial intelligence, and machine learning. Tel. 937-255-6565, x4281 (DSN: 785-6565, x4281), email = Gregg.Gunsch@afit.edu

GUSTAFSON, STEVEN C., Associate Professor of Electrical Engineering, Department of Electrical and Computer Engineering (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

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.

HEIL, MICHAEL L., Col. Commandant, Air Force Institute of Technology, (AFIT/CC); BS, Engineering Sciences, United States Air Force Academy, Colorado, distinguished graduate, 1975; MS, Flight Structures, Guggenheim Fellowship, Columbia University, New York, New York, 1976; Outstanding Military Educator in Engineering Mechanics, United States Air Force Academy, Colorado, 1982-1983; PhD, Solid Mechanics, Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, 1986; MS, National Resource Strategy, Industrial College of the Armed Forces, Fort Lesley J. McNair, Washington, D.C., 1994. Col Heil has held a variety of technology and acquisition leadership positions and served on the faculty at the United States Air Force Academy. Prior to his current assignment, he served as commander of the Arnold Engineering Development Center. Col Heil is a registered Professional Engineer, State of Colorado. Tel. 937-255-2321 (DSN: 785-2321), email = Michael.Heil@afit.edu .

HEMINGER, ALAN R., Associate Professor, Department of Systems and Engineering Management (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/ENP); AB, 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 60 archival publications and over 150 presentations at technical meetings. He has served as advisor on over 15 doctoral dissertations and 75 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 Sensors Directorates of AFRL and the MIT Lincoln Laboratory. Tel. 937-255-2012 (DSN: 785-2012), email = Robert.Hengehold@afit.edu

HILL, RAYMOND R., Lt Col, Associate Professor of Operations Research, Dept of Operational Sciences (AFIT/ENS); BS, Mathematics, Eastern Connecticut State University, 1983; MS, Air Force Institute of Technology, 1988; PhD, The Ohio State University, 1996. Lt Col Hill's research interests include simulation and optimization with ongoing funded research performed for multiple AF Battlelabs, Air Staff agencies, Logistics Management Agency, and AFRL/HES. Tel. 937-255-6565, x4323 (DSN 785-6565, x4323), email = Raymond.Hill@afit.edu

HOLT, DANIEL T., Maj, Instructor of Engineering Management, Department of Systems and Engineering Management (AFIT/ENV); BS, Electrical Engineering, University of Louisville, 1989; MA, Human Resource Development, Webster University, 1993; MS, Air Force Institute of Technology, 1995. Major Holt's research interests include environmental attitudes, organizational change, human personality and emotions, and survey development. Tel. 937-255-3636, x4574 (DSN: 785-3636, x4574), email = Daniel.Holt@afit.edu

HOUPIS, CONSTANTINE H., Professor Emeritus, 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

HUFFINES, GARY R., Maj, Assistant Professor of Atmospheric Physics, Department of Engineering Physics, (AFIT/ENP); BA, Ohio Northern University, 1983; MS, Utah State University, 1990; PhD, Texas A&M University, 1999. Major Huffines' research interests are focused on atmospheric electricity with an emphasis on the characteristics of cloud-to-ground lightning. He has served as the advisor for 8 masters theses dealing with lightning and other aspects of atmospheric physics. Current research efforts include the distance that lightning travels from a storm and lightning characteristics associated with severe weather events. He has authored 5 refereed journal articles and given 6 conference presentations. Tel. 937-255-3636, x4511 (DSN: 785-3636, x4511), email = Gary.Huffines@afit.edu

HUGHSON, MONTGOMERY C., Lt Col, Assistant Professor of Aerospace Engineering and Deputy Department Head, Department of Aeronautics and Astronautics (AFIT/ENY); AA Resource Management, Community College of the Air Force, 1989; BS Aerospace Engineering, University of Texas at Austin, 1984; MS Systems Analysis, University of West Florida, 1989; MS Aeronautical Engineering, Air Force Institute of Technology, 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 aerospace vehicle applications. Lt Col Hughson is a senior member of the American Institute of Aeronautics and Astronautics (AIAA). Tel. 937-255-3636, x4597 (DSN: 785-3636, x4597), email = Montgomery.Hughson@afit.edu

JACOBS, TIMOTHY M., Lt Col, Assistant Professor of Computer Science and Engineering, Department of Electrical and Computer Engineering (AFIT/ENG); BS, Air Force Academy, 1983; MS, Boston University, 1989; MS, Air Force Institute of Technology, 1991; PhD, University of Utah, 1998. Lt Col Jacobs' primary research interests are information and software visualization, virtual environments, computer graphics, and software engineering. He is interested in using these technologies to facilitate complexity management and understanding of advanced applications in software development, computer aided engineering, decision-support, cooperative work, planning and analysis, and battlefield management. Tel. 937-255-6565, x4279 (DSN: 785-6565, x4279), email = Timothy.Jacobs@afit.edu

JACQUES, DAVID R., Lt Col, Assistant Professor of Aerospace Engineering, Department of Aeronautics and Astronautics (AFIT/ENY); BSME, Lehigh University, 1983; MSAE, Air Force Institute of Technology, 1989; PhD, Air Force Institute of Technology, 1995. Lt Col 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. His current research is focused on cooperative behavior and control for air and space vehicles. This includes the coordinated rendezvous problems for manned and unmanned aircraft, cooperative search and engagement for autonomous munitions, and formation station keeping and reconfiguration for micro-satellites. Lt Col Jacques' previous assignment was a Research Engineer and Program Manager at the Munitions Directorate of the Air Force Research Lab (AFRL), Eglin AFB, FL. While assigned to AFRL, Lt Col Jacques was awarded the 1998 HQ USAF Science and Technology Award for Research and Development. Tel. 937-255-3636, x4723 (DSN: 785-3636, x4723), email = David.Jacques@afit.edu

JODOIN, VINCENT J., Maj, Assistant Professor of Nuclear Engineering, Department of Engineering Physics, (AFIT/ENP); BSNE, Rensselaer Polytechnic Institute, 1985; MSEE, California State University, 1988; MSNE and PhD, Air Force Institute of Technology, 1989 and 1994. Major Jodoin's interests center around nuclear weapon effects and countering nuclear weapon proliferation. He has been associated with nuclear weapon issues since 1985. He was a member of the first operational test and evaluation team for the B-2 bomber with Strategic Air Command, was a nuclear science and technology analyst for the Air Force Technical Applications Center, and has managed nuclear and counterproliferation research studies for AF/XONP and DTRA. His current research interests are nuclear weapon fallout and nuclear proliferation modeling. He is a registered Professional Engineer. Tel. 937-255-3636, x4506 (DSN: 785-3636, x4506), email = Vincent.Jodoin@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 Materials Laboratory 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., Lt Col, Associate Professor of Logistics Management and Deputy Head, Dept of Operational Sciences (AFIT/ENS); BS, Montana State University, 1982; MS, Air Force Institute of Technology, 1989; PhD, Virginia Polytechnic Institute and State University, 1996. Lt Col Johnson's research interests include stochastic processes, maintainability, reliability, heuristics, and simulation analysis.

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. 937-255-3636, x4541 (DSN: 785-3636, x4541), email = Matthew.Kabrisky@afit.edu

KELSO, T. S., Col, Assistant Professor of Space Operations and Vice Commandant (AFIT/CV); BS, US Air Force Academy, 1976; MBA, University of Missouri-Columbia, 1978; MS, Air Force Institute of Technology, 1982; PhD, The University of Texas at Austin, 1988. Col. Kelso's research interests include orbital mechanics, astrodynamics, remote sensing, satellite image processing, space operations, and computer simulation. He was the recipient of the AFIT Bernard A. Schriever Award in 1994 and is an Associate Fellow of the AIAA and a Member of the AAS. Col. Kelso's previous assignment was as Associate Dean of the Graduate School of Engineering.

KHAROUFEH, JEFFREY P., Assistant Professor of Operations Research, Dept of Operational Sciences (AFIT/ENS); BS, Ohio University, 1995; MS, Ohio University, 1997; PhD, The Pennsylvania State University, 2001. Dr. Kharoufeh's primary research interest is the design, control, and analysis of stochastic systems with special emphasis on transportation and manufacturing systems. Other research interests include statistical tolerancing analysis and synthesis. Tel. 937-255-6565, x4336 (DSN 785-6565, x4336), email = Jeffrey.Kharoufeh@afit.edu

KING, PAUL I., Associate Professor of Aerospace Engineering, Department of Aeronautics and Astronautics, (AFIT/ENY); BS, Arizona State University, 1971; MS, Air Force Institute of Technology, 1972; PhD, Oxford University, England, 1986. Dr. King's research interests include fluid dynamics and heat transfer (turbomachinery and other applications). His research emphasizes experimentation and instrumentation. Tel. 937-255-3636, x4628 (DSN: 785-3636, x4628), email = Paul.King@afit.edu

KLADITIS, PAUL E., Captain, Assistant Professor of Electrical Engineering, Department of Electrical and Computer Engineering (AFIT/ENG): B.S. Electrical Engineering, Wright State University, 1996; M.S. Electrical Engineering, 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, ASME, and Tau Beta Pi. Tel: 937-255-3636 ext. 4595 (DSN 785-3636), Fax: 937-656-4055 (DSN 986-4055), Email: Paul.Kladitis@afit.edu.

LAIR, ALAN V., Professor of Mathematics and Head, Department of Mathematics and Statistics, (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/ENG); B. 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

LANNING, JEFFREY W., Maj, Assistant Professor of Operations Research, Dept of Operational Sciences (AFIT/ENS); BS, United States Air Force Academy, 1988; MS, Air Force Institute of Technology, 1993; PhD, Arizona State University, 1998. Maj Lanning's research interests include statistical aspects of simulation, design of experiments, response surface methodology, multivariate statistics, statistical process monitoring, time series analysis and forecasting.

LAPUMA, PETER T., Maj, Assistant Professor of Engineering and Environmental Management, Department of Systems and Engineering Management (AFIT/ENV); BS, Mechanical and Industrial Engineering, Clarkson University, 1986; Master of Business Administration, Wright State University, 1991; MS, Engineering and Environmental Management, Air Force Institute of Technology, 1994; PhD, Environmental Engineering Sciences, University of Florida, 1998. Major LaPuma's research interests include, chromated primer paint toxicity, and life cycle energy modeling. His previous assignments include Director of Industrial Hygiene and environmental research engineer. Tel. 937-255-6565, x4319 (DSN: 785-6565, x4319), email = Peter.Lapuma@afit.edu

LARGENT, CRAIG C., Maj, Assistant Professor of Engineering Physics, Department of Engineering Physics, (AFIT/ENP); BS, Northwestern University, 1988; MS, Stanford University, 1989; PhD, University of Florida, 1996. Major Largent's research interests include semiconductor lasers and their applications. He teaches classes in the areas of optics, infrared technology, and remote sensing. Based on research Major Largent performed as a Visiting Scholar in the Department of Chemistry (Professor Richard Zare) at Stanford University, Palo Alto, CA, work has begun on a joint program with AFTAC to perform chemical detection using cavity-ring-down spectroscopy. He has advised 1 MS student during his time on the AFIT faculty. Tel. 937-255-3636, x4505 (DSN: 785-3636, x4505), email = Craig.Largent@afit.edu

LIEBST, BRADLEY S., Professor of Aerospace Engineering and Head, Department. of Aeronautics and Astronautics, (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 50 thesis 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: 785-3636, x4636), email = Bradley.Liebst@afit.edu

LOTT, JAMES A., Lt Col, Professor of Electrical Engineering and Deputy Head, Department of Electrical and Computer Engineering (AFIT/ENG); BSEECS, University of California at Berkeley, 1983; MSEE, Air Force Institute of Technology, 1987; PhD, University of New Mexico at Albuquerque, 1993. Lt Col Lott's research interests include microelectronics, photonics, micro-electro-mechanical systems (MEMS), and nanotechnology. His areas of expertise include epitaxial crystal growth, micro-fabrication, semiconductor physics and lasers. Lt Col Lott received a 1990 Air Force Basic Research Award, a 1994 R&D 100 Award, and the 1999 IEEE Noble Award. He is a Senior Member of the IEEE, author or co-author of over 100 refereed archival journal and conference papers, and holds four patents. Tel. 937-255-3636, x 4576 (DSN: 785-3636, x4576), email = James.Lott@afit.edu

LOWTHER, RONALD P., Lt Col, Assistant Professor of Atmospheric Physics, Department of Engineering Physics, (AFIT/ENP); BS, Computer Science, Chapman College, 1983; MS, Meteorology, Texas A&M University, 1989; PhD, Meteorology, Texas A&M University, 1998. Lt Col Lowther has chaired 5 MS theses in one year at AFIT in the areas of numerical weather prediction model validation, long-range forecasting, seasonal predictions, and data mining of climate data for predictive patterns. Lt Col Lowther's research interests are in the field of applied climatology and the effects of weather on DoD operations and weapon systems. Lt Col Lowther is a member of the American Meteorological Society, the Royal Geographical Society, and the Association of American Geographers. Tel. 937-255-3636, x4645 (DSN: 785-3636, x4645), email = Ronald.Lowther@afit.edu

MAGEE, ERIC P., Maj, Assistant Professor of Electrical Engineering, Department of Electrical and Computer Engineering (AFIT/ENG); BSE, Grove City College, 1987; MSEE, Air Force Institute of Technology, 1993; PhD, The Pennsylvania State University, 1998. Maj Magee's research interests include laser remote sensing (LIDAR/LADAR), coherent laser radar, adaptive optics, atmospheric optics, and optical space surveillance. His areas of expertise are communication theory, electro-optics, and linear systems. Tel. 937-255-3636, x4614 (DSN: 785-3636, x4614), email = Eric.Magee@afit.edu

MALL, SHANKAR, AFRL Professor, Department of Aeronautics and Astronautics, (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 also. Tel. 937-255-3636, x4587 (DSN: 785-3636, x4587), email = Shankar.Mall@afit.edu

MARCINIAK, MICHAEL A., Lt Col, Assistant Professor of Physics, Department of Engineering Physics (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

MATHEWS, KIRK A., Professor of Nuclear Engineering, Department of Engineering Physics, (AFIT/ENP); BS, California Institute of Technology, 1971; MS, Air Force Institute of Technology, 1982; PhD, Air Force Institute of Technology, 1983. Professor 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

MATHIAS, KARL S., Maj, Assistant Professor, Department of Electrical and Computer Engineering (AFIT/ENG); BS, Computer Science, Utah State University, 1986; MS, Computer Systems, Air Force Institute of Technology, 1993; PhD, Auburn University, 1999. Maj Mathias' research interests include automated data collection techniques, software visualization techniques, software engineering process improvement, and combat simulations. Tel. 937-255-6565, x4280 (DSN: 785-6565, x4280), email = Karl.Mathias@afit.edu

MAYBECK, PETER S., Professor of Electrical Engineering, Department of Electrical and Computer Engineering, (AFIT/ENG); BS, Massachusetts Institute of Technology, 1968; PhD, Massachusetts Institute of Technology, 1972. Professor 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, x 4581) email = Peter.Maybeck@afit.edu

MCAREE, PAUL W., Maj, Assistant Professor of Operations Research, Dept of Operational Sciences (AFIT/ENS); BS, Michigan State University, 1989; MS, Saint Mary's University, 1992; MS, Air Force Institute of Technology, 1996; PhD, University of Maryland, 2001. Maj McAree's research interests include mathematical programming, applied statistical analysis, modeling, transportation, logistics, and personnel force management applications. Tel. 937-255-6565, x4324 (DSN 785-6565, x4324), email = Paul.Mcaree@afit.edu

MILLER, J. O., Lt Col, Assistant Professor of Operations Research and Deputy Head, Dept of Operational Sciences (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. Lt Col Miller's research interests include simulation, ranking and selection, complex adaptive systems, and nonparametric statistics. Tel. 937-255-6565, x4326 (DSN 785-6565, x4326), email = John.Miller@afit.edu .

MILLER, MIKEL M., Lt Col, Assistant Professor of Electrical Engineering, Department. of Electrical and Computer Engineering (AFIT/ENG); BSEE, North Dakota State University, Fargo, North Dakota, 1982; MSEE, Air Force Institute of Technology, 1987; PhD, Air Force Institute of Technology, 1998. Lt Col Miller's areas of interest include personal navigation and physiological monitoring, optimal estimation, adaptive estimation, Kalman filtering, multiple model adaptive estimation, optimal inertial navigation integration with the Global Positioning System (GPS) for both existing navigation systems and MEMS-based navigation systems, electromagnetic interference and mitigation techniques affecting GPS receiver performance, and autonomous vehicle navigation, control, and guidance. Lt Col Miller is an active member of Tau Beta Pi, Eta Kappa Nu, and the Institute of Navigation where he is currently the National Space Representative. Tel. 937-255-6565, x4278 (DSN: 785-6565, x 4278), email = Mikel.Miller@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 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, Dept of Operational Sciences (AFIT/ENS); 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. 937-255-6565, x4337 (DSN 785-6565, x4337), email = James.Moore@afit.edu .

MORRIS, MICHAEL G., Maj, Associate Professor, Department of Systems and Engineering Management (AFIT/ENV); BS, Bowling Green State University, 1985; MS, Information Resource Management, Air Force Institute of Technology, 1990; PhD, Management Information Systems, Indiana University, 1996. Maj Morris' research interests include technology acceptance, human-computer interaction, systems analysis and design, and decision-making.

NANRY, WILLIAM P., COL, Assistant Professor of Operations Research, Dept of Operational Sciences, (AFIT/ENS); BS, United States Military Academy, 1979; MA, The University of Texas at Austin, 1989; PhD, University of Texas at Austin, 1998. LTC Nanry's research interests include heuristics, combat modeling, campaign planning, optimization and numerical analysis.

NORRIS, JAMES M., Col, Assistant Professor, Department of Systems and Engineering Management (AFIT/ENV); BS, Economics, North Carolina State University, 1970; MA, Economics, Vanderbilt University, 1973; PhD, Economics, Vanderbilt University, 1980. Col Norris' research interests include organizational strategy and change, strategic human-resource management, military compensation policy, and the role of airpower in joint military campaigns. Tel. (937) 255-2998 (DSN: 785-2998), email = James.Norris@afit.edu

OXLEY, MARK E., Professor of Mathematics, Department of Mathematics and Statistics, (AFIT/ENC); BS, Cumberland College, 1978; MS, Purdue University, 1980; PhD, North Carolina State University, 1987. Dr. Oxley's interests include partial differential equations, free and moving boundary value problems, finite time extinction problems, functional analysis, optimization, numerical analysis, artificial neural networks, groundwater modeling, and wavelet analysis. Several of his students have written theses related to optimal remediation of pump-and-treat systems, others are related to binaural listening, and also measuring the capability of artificial neural networks. Dr. Oxley currently is funded by AFRL/AFOSR to work on data reduction techniques related to material processing, by DAGSI to work on Automatic Target Recognition using invariants analysis, and by DAGSI to work on wavelet transform algorithms for real-time processing of images. Tel. 937-255-3636, x4515 (DSN: 785-3636, x4515), email = Mark.Oxley@afit.edu

PACHTER, MEIR, Professor, Department of Electrical and Computer Engineering, (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/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 153 archival technical publications and more than 320 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 & 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

PERRAM, GLEN P., Professor of Physics, Department of Engineering Physics, (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 9 PhD and 26 MS students, received 15 research grants and published over 60 papers during his twelve years on the AFIT faculty. Tel. 937-255-3636, x4504 (DSN: 785-3636, x4504), email = Glen.Perram@afit.edu

PETRILLO, DAVID, Lt Col, Assistant Professor of Contracting and Acquisition Management, Department of Systems and Engineering Management (AFIT/ENV); BA, Government and International Relations, University of Notre Dame, 1982; MS, Contracting Management, Air Force Institute of Technology, 1992; PhD, Business Logistics, Pennsylvania State University, 1998. Lt Col Petrillo's research interests include strategic purchasing, purchasing of services, best commercial purchasing practices, and integrated supply chain management.

PETROSKY, JAMES C., LTC, Assistant Professor of Nuclear Engineering, Department. of Engineering Physics, (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. LTC 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. LTC Petrosky is with the US Army, assigned to AFIT from the Defense Threat Reduction Agency. Tel. 937-255-3636, x4600 (DSN: 785-3636, x4600), email = James.Petrosky@afit.edu

POHL, ANTONY J., Capt, Instructor of Statistics, Department of Mathematics and Statistics, (AFIT/ENC); BA, University of St. Thomas, 1991; MS, Air Force Institute of Technology, 1995; PhD candidate, Texas A&M University. Capt Pohl's research interests include tolerance intervals and calibration. Tel. 937-255-3636, x4678 (DSN: 785-3636, x4678), email = Antony.Pohl@afit.edu.

POTOCZNY, HENRY B., Professor of Computer Science, Department of Electrical and Computer Engineering, (AFIT/ENG); BA, La Salle University, 1965; MA, University of Kentucky, 1967; PhD, University of Kentucky, 1969. Dr. Potoczny's interests include graph theory, algorithm analysis, computing science, and, most recently, computer and data security, including cryptology, steganography, and quantum cryptology. Tel. 937-255-6565, x4282 (DSN: 785-6565, x4282), email = Henry.Potoczny@afit.edu

PYATI, VITTAL P., Professor 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. 937-255-3636, x4620 (DSN: 785-3636, x4620), email = Vittal.Pyati@afit.edu

QUINN, DENNIS W., Professor of Mathematics, Department of Mathematics and Statistics, (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 thesis 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., Maj, Associate Professor of Electrical Engineering and Chief, Computer Science and Engineering Division, Department of Electrical and Computer Engineering (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 parallel and distributed processing systems, computer communication networks, satellite communications, and performance modeling, analysis and simulation of real-time communication systems. Tel. 937-255-3636, x4715 (DSN: 785-3636, x4715), email = Richard.Raines@afit.edu

RAQUET, JOHN F., Maj, Assistant Professor of Electrical Engineering, Department of Electrical and Computer Engineering (AFIT/ENG); BS, US Air Force Academy, 1989; MS Massachusetts Institute of Technology, 1991; PhD, University of Calgary, Canada, 1998. Maj Raquet's areas of interest include advanced Global Positioning System (GPS) receiver technology, GPS networks and warfare, autonomous vehicle navigation and control, digital GPS processing algorithms, MEMS-based navigation systems, and electromagnetic interference and mitigation techniques affecting GPS performance. Tel. 937-255-3636, x4580 (DSN: 785-3636, x4580), email = John.Raquet@afit.edu

REED, TIMOTHY S., Maj, Assistant Professor of Strategic Purchasing and Entrepreneurship, Department of Systems and Engineering Management (AFIT/ENV), BS, Telecommunications, University of Florida, 1985; MS, Administration, Central Michigan University, 1990; MS, Aerospace Studies, Air Command and Staff College, 2001; PhD, Strategic Management and Entrepreneurship, University of Colorado, 2000. Maj Reed's research interests include the entrepreneurial mindset and its application in the DoD; firm competitive advantage; firm legitimacy; and opportunity recognition. Tel (937) 255-3636 x4799 (DSN 785-3636, x4799) email = Timothy.Reed@afit.edu

REHG, MICHAEL, Maj, Assistant Professor of Management, Department of Systems and Engineering Management (AFIT/ENV); BS, Wildlife Management, University of Wyoming, 1980; MS, Logistics Management, Air Force Institute of Technology, 1990; PhD, Strategic Management, Indiana University, 1998. Maj Rehg's research interests include strategic management, organizational change, whistle-blowing, organizational structure, measurement scales and survey development, aerospace defense, and international management. Tel. (937) 255-3636 x4711 (DSN: 785-3636, x4711), email = Michael.Rehg@afit.edu

REID, THOMAS F., Maj, Assistant Professor of Statistics, Department of Mathematics and Statistics, (AFIT/ENC); BS, University of Oklahoma, 1982; MS, Air Force Institute of Technology, 1987; PhD, University of North Carolina, 1997. Maj Reid's research interests include design of communications networks and simulation. Tel. 937-255-3636, x4516 (DSN: 785-3636, x4516), email = Thomas.Reid@afit.edu

REYNOLDS, DANIEL E., Assistant Professor of Statistics, Department of Mathematics and Statistics, (AFIT/ENC); AB, University of Rochester, 1965; MS, Air Force Institute of Technology, 1971; MS, Wright State University, 1983. 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/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. 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/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 coupling, image processing, phase conjugation, chemical kinetics, and optical diagnostics. Professor Roh's research is currently funded by the Air Force Office of Scientific Research. He has advised 5 PhD and over 41 MS students during his 20 years on AFIT faculty, and published over 40 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 .

SCOTT, MICHAEL B., Maj, Assistant Professor of Physics, Department of Engineering Physics, (AFIT/ENP); BS, Oklahoma State University, 1984; MS, Air Force Institute of Technology, 1989; PhD, Air Force Institute of Technology, 1999. Major Scott's research areas focus on experimental solid state physics; semiconductors physics; including electrical and optical characterization of wide-bandgap semiconductors. His previous assignments include Physics Instructor, Air Force Academy and Air Force Preparatory School; Technical Director for conventional and simulated nuclear weapons effects testing for Field Command – Defense Nuclear Agency (now DTRA); and Flight Test Engineer for weapons delivery and navigation operational flight test of the B-1B bomber. He is currently researching activation of implanted ions and radiation-damage effects in 4H- and 6H-SiC. Tel. 937-255-3636 x4706 (DSN: 785-3636, x4706), email = MichaelB.Scott@afit.edu

SHELLEY, MICHAEL L., Associate Professor of Engineering and Environmental Management, Department of Systems and Engineering Management (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, E. PRICE, Lt Col, Assistant Professor of Aerospace and Systems Engineering, Department of Aeronautics and Astronautics, (AFIT/ENY); BSEE, Virginia Polytechnic Institute and State University, 1982; MS, Systems Engineering, AFIT, 1987; PhD, Industrial and Systems Engineering, Virginia Polytechnic Institute and State University, 1994. Lt Col Smith's research interests include unmanned aerial vehicle (UAV) design, systems engineering education, and global non-convex optimization algorithms. Lt Col Smith has previously been assigned to HQ USCENTCOM as the Deputy Science Advisor, and to the HQ Air Force Operational Test and Evaluation Center and the Aeronautical Systems Center as a test engineer for electronic warfare, flight simulator, and communications systems. Tel. 937-255-6565, x4318 (DSN: 785-6565, x4318), email = Ernest.Smith@afit.edu

SPENNY, CURTIS H., Associate Professor of Aerospace and Systems Engineering, Department of Aeronautics and Astronautics, (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. 937-255-6565, x4320 (DSN: 785-6565, x4320), email = Curtis.Spenny@afit.edu

STOCKMAN, WILLIAM K., Lt Col, Assistant Professor of Acquisition Management, Department of Systems and Engineering Management (AFIT/ENV); BS, Mathematics, Southeast Missouri University, 1977; BS, Business Administration, Southeast Missouri University, 1977; BS, Astronautical Engineering, Air Force Institute of Technology, 1984; MS, Engineering Management, West Coast University, 1986; MS, Operations Research, Air Force Institute of Technology, 1988; MA, Economics, George Mason University, 1995; PhD, Economics, George Mason University, 1996. Lt Col Stockman's research interests include source selection evaluation techniques, public-private competition, economic analysis, and general aviation. Tel. (937) 255-3636 x4796 (DSN: 785-3636, x4796), email = William.Stockman@afit.edu

SUSALLA, MICHAEL, Cdr. USN, Instructor of Nuclear Engineering, Department of Engineering Physics (AFIT/ENP); BS, Marine Engineering, U.S. Naval Academy, 1979; MS, Physics (Nuclear Weapons & Effects), Naval Postgraduate School, 1988. Cdr Susalla's research interests include reactor operations and nuclear weapons effects.

SWARTZ, STEPHEN M., Lt Col, Assistant Professor of Logistics Management, Dept of Operational Sciences, (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. Maj 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. 937-255-6565, x4285 (DSN 785-6565, x4285), email = Stephen.Swartz@afit.edu .

TALBERT, MICHAEL L., Maj, Assistant Professor of Computer Science, Department of Electrical and Computer Engineering (AFIT/ENG); BS, Meteorology, North Carolina State University, 1985; MS, Computer Information Systems, Air Force Institute of Technology, 1988; PhD, Computer Science and Applications, Virginia Polytechnic Institute and State University, 1995. Major Talbert's research interests include database management systems, content-based visual information retrieval, and data mining.

TEMPLE, MICHAEL A., Assistant Professor of Electrical Engineering, Department of Electrical and Computer Engineering, (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 (C^3I), radar signal/signature processing, and Electronic Warfare (EW), as adopted by and/or transitioned to DoD and other national agencies, has provided nearly $1M in research and technology benefits. Tel. 937-255-3636, x4703 (DSN: 785-3636, x4703), email = Michael.Temple@afit.edu

TERZUOLI, ANDREW J., Jr., Associate Professor of Electrical Engineering, Department of Electrical and Computer Engineering, (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; 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, Department Head and Assistant Professor of Engineering and Environmental Management, Department of Systems and Engineering Management (AFIT/ENV); BS, Civil Engineering, Texas Tech University, 1981; MS, Engineering Management, Air Force Institute of Technology, 1985; PhD, Environmental Engineering, University of Oklahoma, 1999. Lt Col Thal's research interests include Fair and Transport of Subsurface Contaminants, environmental policy and management issues, Engineering and Facility Management Issues, and contingency readiness and training. Telephone: (937) 255-3636, x4591 (DSN: 785-3636, x4591), email = Alfred.Thal@afit.edu

THURSTON, PAUL W., Maj, Instructor of Management and Organizational Behavior, Department of Systems and Engineering Management (AFIT/ENV); BS, Mechanical Engineering, Worcester Polytechnic Institute, 1984; MS, Systems Management, Air Force Institute of Technology, 1989; Doctoral Candidate, Organizational Studies, State University of New York (Albany). Maj Thurston's research interests include performance measurement and appraisals, motivation, decision-making processes, employee selection and training, minority influence, and experimental design/research methods.

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/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 analysis of other complex dynamical systems. Dr. Tragesser has published several refereed journal and conference papers and is a member of AIAA. Tel. 937-255-6565, x4286 (DSN: 785-6565, x4286), email = Steven.Tragesser@afit.edu

TUTTLE, RONALD F., Associate Professor of Nuclear Engineering and Chair, Measurement And Signature Intelligence (MASINT) Technologies, Dept. of Engineering Physics, (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, x 4536 (DSN 785-3636, x4536), email = Ronald.Tuttle@afit.edu

WALTERS, MICHAEL K., Lt Col, Assistant Professor of Atmospheric Physics, Department of Engineering Physics (AFIT/ENP); BS, Zoology, Texas A&M University, 1976; MS, Meteorology, Texas A&M University, 1985; PhD, Meteorology, Texas A&M University, 1988. Lt Col Walters has chaired 17 MS theses in four years at AFIT in the areas of battlefield-scale cloud forecasting, contrail forecasting, forecast support for electro-optical precision guided munitions, thunderstorm and downburst wind forecasting for space-launch support, ensemble-based probability of precipitation forecasting, transport and diffusion modeling, and mesoscale numerical weather prediction. He is a member of the American Meteorological Society and the American Geophysical Union. Tel. 937-255-3636, x4681 (DSN: 785-3636, x4681), email = Michael.Walters@afit.edu

WARD, MARK A., Maj, Assistant Professor of Information Resource Management, Department of Systems and Engineering Management, (AFIT/ENV); BS, Texas A&M University; MS, Air Force Institute of Technology, 1992; PhD, Business Administration, Southern Illinois University at Carbondale, 1999. Maj Ward previously worked at Headquarters Air Mobility Command in the C-17 acquisition program. His research interests center around information systems productivity and numerous organizational studies issues. He is a member of MENSA and Beta Gamma Sigma. Tel. 937-255-3636, x4742 (DSN: 785-3636, x4742), email = Mark.Ward@afit.edu

WEEKS, DAVID E., Associate Professor of Physics, Department of Engineering Physics (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

WHITE III, EDWARD D., Maj, Assistant Professor of Statistics, Department of Mathematics and Statistics, (AFIT/ENC); BS, University of Tampa, 1990; MAS, Ohio State University, 1991; PhD, Texas A&M University, 1998. Capt White's research interests include design of experiments, categorical data analysis, biostatistics, and model building. Tel. 937-255-3636, x4524 (DSN: 785-3636, x4524), email = Edward.White@afit.edu

WIESEL, WILLIAM E., JR., Professor of Astronautical Engineering, Department of Aeronautics and Astronautics, (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, also, authored over 25 technical papers and has been a member of the department for 24 years. Tel. 937-255-6565, x4312 (DSN: 785-6565, x4312), email = William.Wiesel@afit.edu

WILEY, VICTOR D., Capt, Assistant Professor of Operations Research, Dept of Operational Sciences (AFIT/ENS); BS, Texas A&M University, 1991; MS, Air Force Institute of Technology, 1996; PhD, The University of Texas at Austin, 2001. Capt Wiley's research interests include metaheuristics, applications of group theory to metaheuristic search neighborhoods, and program management. Tel. 937-255-6565, x4367 (DSN 785-6565, x4367), email = Victor.Wiley@afit.edu .

WOLF PAUL J., Associate Professor of Physics, Department of Engineering Physics, (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 advised two PhD and five MS students during his five years on the AFIT faculty and published over 20 papers. Tel. 937-255-3636, x4560 (DSN: 785-3636, x4560), email = Paul.Wolf@afit.edu

WOOD, AIHUA W., Associate Professor of Mathematics, Department of Mathematics and Statistics (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, finite element methods, and photonic crystals. Dr. Wood is currently funded by the Air Force Office of Scientific Research to investigate scattering and propagation of electromagnetic waves, and is the Principal Investigator for a AFRL/DAGSI Research Project to develop a hybrid Maxwell solver for wide-band radar signature prediction for low observable targets. Tel. 937-255-3636, x4521 (DSN: 785-3636, x4521), email = Aihua.Wood@afit.edu

WOOD, WILLIAM D., Major, Assistant Professor of Electrical Engineering, Department of Electrical and Computer Engineering (AFIT/ENG); BSEE, University of Arizona, 1985; MSEE, Air Force Institute of Technology, 1990; PhD, Air Force Institute of Technology, 1997. Major Wood's research interests include low observables and electromagnetic scattering and radiation. His areas of expertise include computational electromagnetics, wave interaction, and radar measurement technology. He is a Member of the IEEE, author or co-author of 12 refereed archival journal and conference papers. Tel. 937-255-3636, x4639 (DSN: 785-3636, x4639), email = William.Wood@afit.edu.

YEO, YUNG K., Professor of Physics, Dept of Engineering Physics, (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 and optical properties of elemental, compound, ternary, and quaternary semiconductors using techniques such as Hall effect measurement, deep level transient spectroscopy, cathodoluminescence, and photoluminescence. Professor Yeo has published over 70 articles in archival journals, several technical reports, presented over 150 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 SiC and GaN. This work involves collaborative effort with the Air Force Wright Laboratory, Oklahoma State University, and Virginia Polytecnic Institute and State University. He has directed the research of eleven PhD students and sixteen 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 .

APPENDIX B DEPARTMENT SYMBOLS AND LOCATIONS

Symbol	School Office/Department	Room	Telephone, (DSN)
EN	Office of the Dean	100	(937) 255-3025 (DSN: 785-3025)
	Dr. Robert A. Calico, Jr., Dean		(937) 255-3025 (DSN: 785-3025)
	Col Wayne F. Hallgren, Associate Dean		(937) 255-4372 (DSN: 785-4372)
	Col James M. Norris, Associate Dean for Plans & Programs)		(937) 255-3636, x4553 (DSN: 785-3636, x4553
	Dr. Paul J. Wolf, Assistant Dean for Academic Affairs)		(937) 255-3636, x4560 (DSN: 785-3636, x4560)
ENR	Office of Research and Consulting Dr. Heidi R. Ries, Associate Dean for Research	103	(937) 255-3633 (DSN: 785-3633)
ENC	Department of Mathematics and Statistics Dr. Alan V. Lair	114	(937) 255-3098 (DSN: 785-3098)
ENG	Department of Electrical and Computer Engineering Col Donald R. Kitchen	218	(937) 255-2024 (DSN: 785-2024)
ENP	Department of Engineering Physics Dr. Robert L. Hengehold	106	(937) 255-2012 (DSN: 785-2012)
ENS	Department of Operational Sciences Col John M. Andrew	177	(937) 255-2549 (DSN: 785-2549)
ENV	Department of Systems and Engineering Management Lt Col Alfred E. Thal, Jr.	204	(937) 255-2998 (DSN: 785-2998)
ENY	Department of Aeronautics and Astronautics Dr. Bradley S. Liebst	201	(937) 255-3069 (DSN: 785-3069)

APPENDIX C ABBREVIATIONS FOR ORGANIZATIONS

There are a number of abbreviations for organizations that are used in this report. This alphabetical listing will only include selected organizations. The Defense Technical Information Center has an acronym listing at http://www.dtic.mil/dtic/dtic-acronyms.html . The department symbols for the Graduate School of Engineering are found in Appendix B.

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
AFMC	Air Force Materiel Command
AFOSR	Air Force Office of Scientific Research
AFOTEC	Air Force Operational Test and Evaluation Center
AFRL	Air Force Research Laboratory
AFSPC	Air Force Space Command
AFTAC	Air Force Technical Applications Center
AIA	Air Intelligence Agency
AMC	Air Mobility Command
ASC	Aeronautical Systems Center
AU	Air University
DAGSI	Dayton Area Graduate Studies Institute
DISA	Defense Information Systems Agency
DoD	Department of Defense
DOE	Department of Energy
HQ AU	Headquarters, Air University
PACAF	Pacific Air Forces
SAF	Secretary of the Air Force
USAF	United States Air Force

APPENDIX D AFIT HISTORY

The Institute

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. 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 to Wright Field in 1927. Shortly after Pearl Harbor, the school suspended classes, but it reopened as the Army Air Forces Engineering School in 1944 to conduct a series of accelerated courses to meet emergency requirements.

In 1946, the Army Air Force Institute of Technology was established as part of the Air Materiel Command. The Institute 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 School of Civil Engineering Special Staff Officer's Course began. In 1948, civilian institution programs were transferred to AFIT.

In 1950, command jurisdiction of AFIT shifted from Air Materiel Command to Air University (AU) with headquarters at Maxwell AFB, Alabama. The Institute, however, remained at what was now known as Wright-Patterson AFB. In 1951, the two AFIT colleges were combined into the Resident College.

The Institute established a logistics education program at WPAFB in 1955, and The Ohio State University conducted the first courses on a contract basis. In 1958, AFIT began a series of short courses in logistics as part of the Air Force Logistics Command (AFLC) Education Center. Later that year, the School of Logistics became a permanent part of AFIT.

In 1954, the 83d Congress authorized the Commander, Air University, to confer degrees upon persons in the AFIT Resident College. The college was later divided into the School of Engineering, the School of Logistics, and the School of Business. The first undergraduate engineering degrees were granted in 1956, and the first graduate degrees in business in 1958. The School of Business programs were transferred to civilian universities in 1960. 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.

In 1967, AFIT became a member of the Dayton Miami Valley Consortium (DMVC), which later changed its name to Southwestern Ohio Council for Higher Education (SOCHE). The council is an association of colleges, universities, and industrial organizations in the Dayton area which are united to promote educational advancement. AFIT has traditionally been active in both the council and in other community and interinstitutional programs.

AFIT's flexibility is such that it adjusts quickly to changing Air Force requirements. The faculty, comprised of highly qualified military and civilian personnel, stay abreast of projected Air Force

operations, and the programs are continually updated to offer its students the latest available material. For example, an Air Force Software Review in 1989 led to AFIT programs in software engineering and software systems management barely a year later. When environmental concerns culminated in the Pollution Prevention Act of 1990, AFIT designed and implemented both graduate and professional continuing education programs in environmental engineering management. In 1994, Air Force Weather requested a meteorology program designed specifically for the warfighter, and in less than one year AFIT delivered a graduate education program in military meteorology with an initial enrollment of fourteen officers.

In 1995, AFIT's Graduate School of Engineering became a member of the Dayton Area Graduate Studies Institute (DAGSI) along with the graduate engineering schools of Wright State University and the University of Dayton. The purpose of the partnership was to provide, through the combined engineering and research resources of the three schools, educational and research opportunities at the MS and PhD level. The University of Cincinnati and the Ohio State University became affiliate members of DAGSI in 1997. DAGSI provides a continuing source of advanced technological expertise for the region covered by the five schools. The DAGSI program covers a broad spectrum of over 30 major research areas and benefits from the support of business and industry, government, and civic sectors of the Dayton Region.

Early in Fiscal Year 97, the Secretary of the Air Force made a decision to close AFIT resident graduate schools. In anticipation of closure, AFIT developed and began a transition and closure plan. Resident Phd. students scheduled for FY97 were diverted to the Civilian Institution Program and a transition plan for actual closure was developed, identifying manpower positions for elimination in FYs 97 through 00.

In April 1998, after a visit to AFIT, the Acting Secretary of the Air Force, F. Whitten Peters, announced a reversal of the Air Force decision to terminate the AFIT resident graduate programs. AFIT will continue a restructuring initiative begun in FY96 that will size the resident graduate programs to meet the Air Force education requirements of the FY03 force structure. As part of this restructuring, the two resident graduate schools were merged into the Graduate School of Engineering and Management on Oct 1, 1999.

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. The implementation of the PhD program at AFIT in 1965 resulted in significant growth of the research activities on the AFIT campus. The expanded role of sponsored research at AFIT was recognized by creating the Office of Research for the School of Engineering in 1989 and the Office of Research and Consulting for the School of Logistics and Acquisition Management in 1990 (now the Office of Research and Consulting in the Graduate School of Engineering and Management).

Several key projects are illustrative of AFIT's research impact on the Air Force, the Department of Defense, and the nation. For more than twenty years, the Department of Engineering Physics has conducted strong research in high-energy laser technology and delivered mission ready graduates to AF laboratories. Two PhD graduates served as directors of the Air Force laser program, and four PhD graduates led the team demonstrating a 40 kW laser for anti-satellite missions. The AFIT laser weapons research group is now supporting the development of the Airborne Laser, based on the Chemical Oxygen Iodine Laser co-invented by an AFIT graduate. Other work of the laser weapons research group includes the development of lasers for remote sensing and counter-proliferation applications, new optical diagnostic methods, and studies of ionization mechanisms in the thermosphere for satellite survivability.

In support of the Air Force's and DoD's environmental restoration programs, AFIT established a remediation research program in the early 1990s involving faculty from four departments. Since that time, over 50 student theses on the subject have been published and graduates have gone on to manage remediation programs at bases and major commands throughout the Air Force. Research contributions include a field demonstration of a bioremediation technology that destroys trichloroethylene, the most common groundwater contaminant at DoD installations, and some of the first studies of the biodegradability of tolyltriazole, an aircraft deicing fluid additive recently recognized as an important groundwater contaminant at airfields throughout the nation.

AFIT researchers in the Department of Operational Science, responding to the needs of the C-17 Systems Program Office (SPO), developed an object-oriented simulation model to quantify the rate of paratrooper/vortex interaction for various airdrop formations, enhanced through high-resolution computer visualization of model results. The research results were briefed to the C-17 SPO Director, the Director of Test and Evaluation for the Office of the Secretary of Defense, the Undersecretary of the Army for Operations Research, and the Commander of the XVIII Airborne Corps. Utilizing their C-17 airdrop simulation model, the AFIT researchers also led a preflight study of the multinational CENTRAZBAT '97 Exercise; their analysis was praised by the XVIII Airborne Corps Commander as "dead-on!"

The Department of Aeronautics and Astronautics has an ongoing research program studying high cycle fatigue, the cause of the most dominant issue relevant to gas turbine engine damage. Currently, there exists only a cursory understanding of damage, crack initiation, and crack propagation under high cycle fatigue conditions. It has been recognized that a significant number of failures of engine components are attributable to fretting damage, such as dove-tailed blades, including press-fit or interlocking connections which are subjected to surface wear and fretting fatigue. The study in collaboration with the Materials and Manufacturing Directorate of the Air Force Research Laboratory uses an integrated experimental/analytical numerical modeling approach to investigate the high cycle fretting fatigue behavior of titanium alloys.

In December 1998, AFIT broke ground for a $8.9 million engineering laboratory. The facility will be used for experimental research in aeronautical engineering, electrical engineering, applied physics and environmental science. The lab officially opened in March, 2001 and will enable AFIT to continue its tradition of high quality research programs in support of the Air Force Mission.

APPENDIX E INFORMATION FOR OBTAINING A COPY OF A THESIS

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General inquiries concerning faculty and student research at the Air Force Institute of Technology may addressed to:

Office of Research and Consulting
Air Force Institute of Technology
2950 P Street, Bldg 640, Room 103
Wright Patterson AFB, OH 45433-7765
Phone: (937) 255-3633 (DSN: 785-3633)
Website: http://www.afit.edu
Email: afit.enrsta@afit.edu

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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, Engineering Physics and Logistics and Acquisition Management.

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