

Air Force Institute of Technology AFIT Scholar

AFIT Documents

4-1-2001

Air Force Institute of Technology Research Report 2000

Office of the Associate Dean for Research and Consulting, Graduate School of Engineering and Management, AFIT

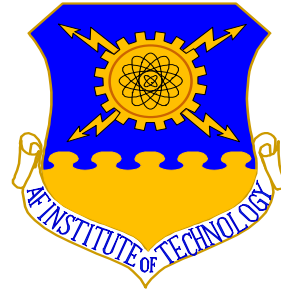
Follow this and additional works at: <https://scholar.afit.edu/docs>

Recommended Citation

Office of the Associate Dean for Research and Consulting, Graduate School of Engineering and Management, AFIT, "Air Force Institute of Technology Research Report 2000" (2001). *AFIT Documents*. 18.
<https://scholar.afit.edu/docs/18>

This Report is brought to you for free and open access by AFIT Scholar. It has been accepted for inclusion in AFIT Documents by an authorized administrator of AFIT Scholar. For more information, please contact richard.mansfield@afit.edu.

AFIT/EN-TR-01-01
TECHNICAL REPORT
March 2001



Air Force Institute of Technology

Research Report 2000

Period of Report: 1 October 1999 to 30 September 2000

Graduate School of Engineering and Management

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

Approved For Public Release: Distribution Unlimited

AIR FORCE INSTITUTE OF TECHNOLOGY

Wright-Patterson Air Force Base, Ohio

The Department of Defense, federal government, and non-government agencies supported the work reported herein.

Reproduction of all or part of this document is authorized.

Edited and produced by the Office of Research and Consulting, AFIT/ENR.

For additional information, please call or email:

(937) 255-3633

DSN 785-3633

enrsta@afit.edu

or visit the AFIT website: www.afit.edu



**Air Force Institute of Technology
Research Report 2000
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 US USAF laboratories and DoD agencies, and to encourage new sponsors to participate in AFIT's research program.

As USAF takes on the challenges of the 21st century, AFIT will continue to meet the technical education needs of USAF, DoD, and the nation.

**ROBERT A. CALICO, JR.
Dean, Graduate School of Engineering
& Management
Air Force Institute of Technology**

TABLE OF CONTENTS

Foreword.....	i
1. Introduction.....	1
1.1 Overview.....	1
1.2 The Graduate School Of Engineering And Management Research Collaboration.....	1
1.3 Research Assessment Questionnaire Results	4
2 Research Statistics	6
2.1 Research And Consulting Output Measures	6
2.2 Research And Consulting Sponsorship	7
2.3 Outside Funding For The Graduate School Of Engineering And Management	9
2.4 Faculty Fellows	10
2.5 Professional Certification.....	11
3. Contributions To The Air Force.....	12
3.1 Doctoral Dissertations	12
3.2 Masters Theses By Program.....	13
3.2.1 Acquisition Management	13
3.2.2 Aeronautical Engineering.....	13
3.2.3 Applied Mathematics	14
3.2.4 Applied Physics.....	14
3.2.5 Astronautical Engineering.....	14
3.2.6 Computer Engineering	14
3.2.7 Computer Systems	15
3.2.8 Electrical Engineering.....	16
3.2.9 Electro-Optics	18
3.2.10 Engineering And Environmental Management	18
3.2.11 Environmental Science And Engineering	19
3.2.12 Information Resource Management	19
3.2.13 Material Science.....	20
3.2.14 Meteorology	20
3.2.15 Nuclear Engineering.....	21
3.2.16 Operational Analysis.....	22
3.2.17 Operations Research.....	22
3.2.18 Space Operations.....	24
3.2.19 Systems Engineering.....	24
3.3 Sponsors Of Masters Theses	25
3.4 Funded Research Projects	39
3.5 Refereed Journal Publications	49
3.6 Other Publications.....	57
3.7 Substantial Consultations	69
3.8 Presentations	75
3.9 Other Significant Professional Activities	91
3.10 Special Awards Or Special Recognition	95
3.10.1 Faculty.....	95
3.10.2 Students.....	97
Appendices.....	98
Appendix A Faculty Credentials.....	98
Appendix B Department Symbols And Locations	117
Appendix C Abbreviations For Organizations	118
Appendix D AFIT History	119
Appendix E Information For Obtaining A Copy Of A Thesis	122

1. INTRODUCTION

1.1 OVERVIEW

This Research Report presents the FY 00 research statistics and contributions of the Graduate School of Engineering and Management (EN) at the Air Force Institute of Technology (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 (CRDAs). Interested individuals may discuss ideas for new research collaborations, potential CRDAs, or thesis topic proposals with individual faculty using the contact information in the Appendix.

Additional information on the research programs of AFIT may also be found on the research web home page at <http://www.afit.edu/research>. 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 Heidi.Ries@afit.edu or Mr. Gary M. Koenig, PE, Research Grants Engineer, (937) 255-3636, ext 4546 (DSN: 785-3636, ext 4546), email Gary.Koenig@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 call for thesis topic proposals in an effort to involve sponsor organizations actively in research and education. Over 200 responses were received last year in the *2001 Call For Thesis Topic Proposals*, and approximately 5% resulted in thesis projects. Many outstanding topics could not be addressed this year due to student shortages, but will be considered for adoption by next year's class. 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 MS theses suggestions and topics for the Electrical Engineering, Computer Engineering and Computer Science programs. The following research specialties are covered by the Department:

Communications / Networks
Evolutionary Algorithms
Information Operations
Micro Systems

Electromagnetics / Low Observables (Stealth)
Guidance, Navigation and Control
Intelligent Distributed Information Systems
Parallel / Distributed Processing

The Department of Engineering Physics invites MS thesis topic proposals for the Engineering Physics, Nuclear Engineering, Electro-Optics (Electro-Optics shared between Electrical Engineering and Engineering Physics), and Metrology programs. The areas covered by these programs include:

Atmospheric Sciences	Modeling and Simulation
Nuclear Weapons and Effects	Space Weather Research
Counterproliferation of Weapons of Mass Destruction	Lasers and Electro-Optics
Electronic and Photonic Materials	

The Department of Operational Sciences invites MS thesis suggestions and 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	Statistical Analysis
Transportation and Strategic Mobility	

The Department of Systems and Engineering Management is seeking thesis topic proposals for the Graduate Engineering and Environmental Management (GEEM) and Graduate Acquisition Management (GAQ) programs. The following research specialties are covered by the Department:

Applied Environmental Sciences	Information Resource Management
Cost Analysis	Program and Contract Management
Contract Management	Quantitative Decision Making
Environmental Systems Analysis and Management	Systems and Software Systems Management
	Human Resource Management

The Department of Aeronautics and Astronautics invites MS thesis suggestions and topics within the area of aerospace vehicles (which includes aircraft and spacecraft). The Department covers the following research specialties:

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

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 and applications of one or more faculty.
- Read through the list of recent graduates' thesis 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 thesis topic. 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 thesis 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 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 enrsta@afit.edu.

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

THESIS TOPIC PROPOSAL FORMAT

1. **THESIS 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 page 7, was sent to each sponsor of a master's thesis and doctoral dissertation project during FY 2000 to determine the projects contribution, significance and cost avoidance. Detailed results of the questions asked are shown in Table 1.4. The data in this table are based on 53 questionnaires returned out of the 169 questionnaires mailed.

Table 1.1: Sponsor Assessment of AFIT Research

QUESTION	EN
Did this research contribute to a current Air Force/DoD project?	98%
The thesis work was: Highly significant Significant Slightly significant Not significant	26% 59% 15% 0%
Avg. Man-years of effort saved	1.9
Average cost avoided per thesis/dissertation	\$159,450
Total cost avoided for all theses and dissertations sponsored	\$26,946,910
Rank of respondents Colonel (GM-15) Lt Col (GM-14) Major (GM-13) Captain (GS-12) Other	25% 38% 25% 9% 3%



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 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 FY00, these output measures are shown in Table 1.1 and in Figure 1.1.

Table 2.1: Faculty Research and Consulting Output

Graduate School Department	Number of Faculty	Refereed Publications	Other Publications	Presentations	Funded Research Projects	Significant Consultations	Masters Theses Advised	Doctoral Disserts. Advised
Math (ENC)	10	16	8	17	8	1	2	0
Elec (ENG)	23	23	68	69	42	53	51	3
Phys (ENP)	20	16	10	35	22	1	26	2
Op Sc (ENS)	17	10	25	57	31	10	30	1
Envir (ENV)	16	8	7	10	8	2	28	0
Aero (ENY)	17	15	14	10	30	9	24	2
Total	103	88	132	198	141*	76	161	8

*There were 105 separate projects, however, some projects had multiple faculty contributions

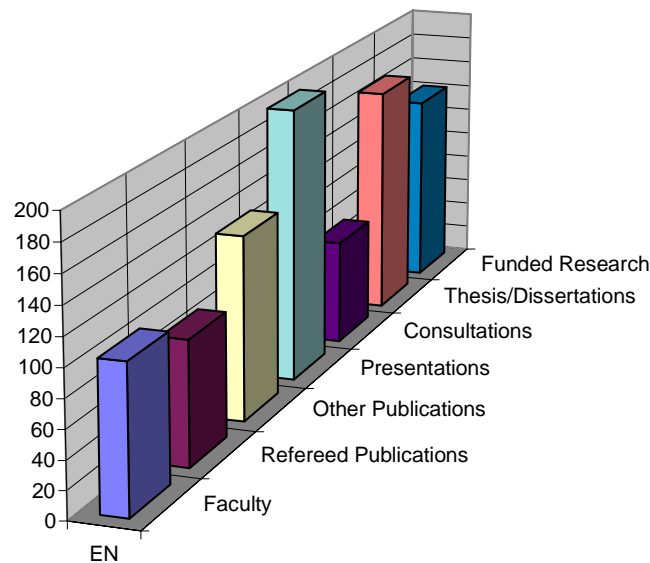


Figure 2.1: Research Output Measures

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 87% 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 1.2 and Figure 1.2.

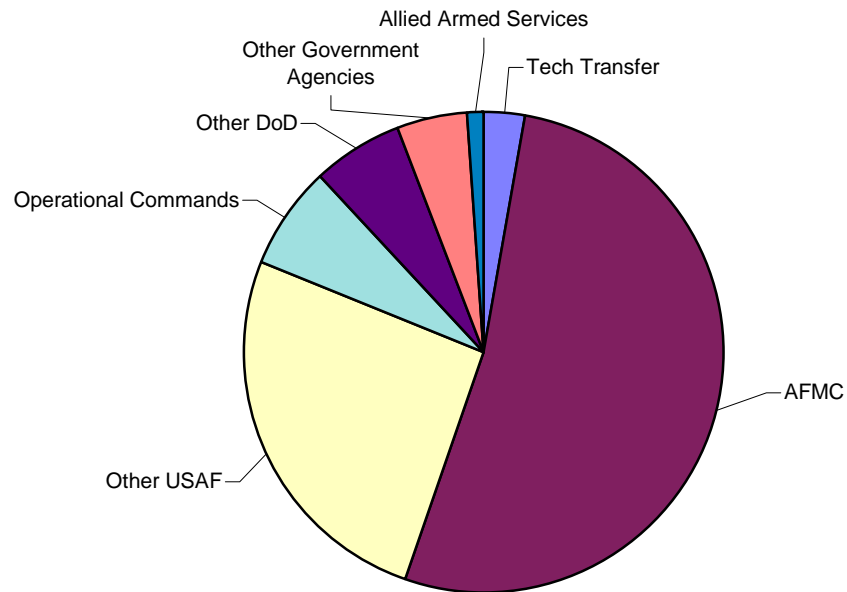


Figure 2.2: Sponsors of AFIT Theses and Dissertations

Table 2.2: Sponsorship of AFIT Research

SPONSOR ORGANIZATION	Masters' Theses	PhD Dissertation	Funded Research	Significant Consultations
AIR FORCE	5		7	1
AIR COMBAT COMMAND				
Air Force Information Warfare Center	2			
Command and Control Battle lab	1			
UAV Battle lab	2			
AIR EDUCATION & TRAINING COMMAND	1		1	1
Air Force Institute of Technology	15	1		
AIR FORCE MATERIEL COMMAND	2			
Aeronautical Systems Center	7		2	2
Air Force Research Laboratory	56	4	24	35
Air Force Office of Scientific Research	15	3	47	
Space & Missile Systems Center	1			
Air Force Flight Test Center	1			
75 th Operations Support Squadron	1			
746 th Test Squadron	2		1	
AIR FORCE SPACE COMMAND				1
Space Warfare Center	1			
AIR MOBILITY COMMAND	5			1
Air Mobility Warfare Center	1			
AIR NATIONAL GUARD	1			
USAF FIELD OPERATING AGENCIES				
Air Force Civil Engineer Support Agency	1			
Air Force Studies Analyses Agency	1			
Air Force Technical Applications Center	2		1	
Air Force Weather Agency	5			
45 th Weather Squadron	6			
USAF DIRECT REPORTING UNIT				
Air Force Communication Agency	6		1	9
ARMY			1	
US Army Logistics Management College				1
US Army Recruiting Command	1			
US Army Safety Center	1			
DEPARTMENT OF DEFENSE			3	1
Defense Advanced Research Projects Agency	3		3	4
Defense Intelligence Agency	1			
Defense Threat Reduction Agency	1			1
Office of Secretary of Defense	2			4
USSTRATCOM	2		1	
NATIONAL SECURITY AGENCY	8		2	2
DAYTON AREA GRADUATE STUDIES INSTITUTE	5		9	5
EGYPTIAN AIR FORCE	2			
OTHERS			2	8
TOTALS	166*	8	105	76

*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 1.3 and Figure 1.3 summarize outside funding for FY 2000.

Table 2.3: Sponsoring Organizations for Funded Research

Sponsoring Organization	Funded Projects	Dollars (\$)*
Air Force Research Lab (AFRL)	24	867,647
AFOSR	47	1,400,827
Other AFMC	3	23,000
Other USAF	10	347,316
Other DOD	8	221,000
NSA	2	20,000
Tech Transfer (CRDAs)	11	336,136
TOTAL	105	3,215,926**

* Includes carry over funding from FY99 of \$634,161.

**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.

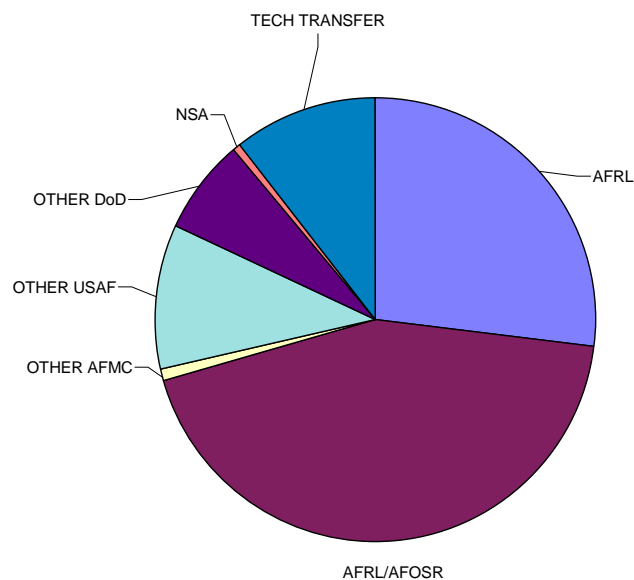


Figure 2.3: Funded Research for Fiscal Year 2000

2.4 FACULTY FELLOWS

BRIDGMAN, CHARLES J., Professor Emeritus of Nuclear Engineering, Dept of Engineering Physics, (AFIT/ENP); Fellow of the American Nuclear Society.

BROWN, WILLIAM M., Professor of Electrical Engineering, Department of Electrical and Computer Engineering, (AFIT/ENG); Fellow of the Institute of Electrical and Electronic Engineers.

D'AZZO, JOHN J., Professor Emeritus of Electrical Engineering, Department of Electrical and Computer Engineering, (AFIT/ENG); Fellow of the Institute of Electrical and Electronic Engineers.

FRANKE, MILTON E., Professor of Aerospace Engineering, Department of Aeronautics and Astronautics (AFIT/ENY); Fellow of the American Society of Mechanical Engineers.

HOUPIS, CONSTANTINE H., Professor Emeritus of Electrical Engineering, Department of Electrical and Computer Engineering, (AFIT/ENG); Fellow of the Institute of Electrical and Electronic Engineers.

MALL, SHANKAR, Air Force Research Laboratory, Professor, Department of Aeronautics and Astronautics, (AFIT/ENY); Fellow of the American Society of Mechanical Engineers.

MAYBECK, PETER S., Professor of Electrical Engineering, Department of Electrical and Computer Engineering, (AFIT/ENG); Fellow of the Institute of Electrical and Electronic Engineers.

PACHTER, MEIR, Professor of Electrical Engineering, Department of Electrical and Computer Engineering, (AFIT/ENG); Fellow of the Institute of Electrical and Electronic Engineers.

PALAZOTTO, ANTHONY N., Professor of Aerospace Engineering, Department of Aeronautics and Astronautics, (AFIT/ENY); Fellow of the American Society of Civil Engineers.

TORVIK, PETER J., Professor Emeritus of Aerospace Engineering and Engineering Mechanics, Department of Aeronautics and Astronautics, (AFIT/ENY); Fellow of the American Institute of Aeronautics and Astronautics, Fellow of American Society of Mechanical Engineers.

2.5 PROFESSIONAL CERTIFICATION

BROTHERS, HEIDI S., P.E., Professional Engineer, State of Oregon and California, C44500

BROWN, WILLIAM M., P.E., Professional Engineer, State of Michigan, H-483156

CHAN, YUPO, P.E., Professional Engineer, Commonwealth of Pennsylvania, PE-024730-E

CHRISSIS, JAMES W., P.E., Professional Engineer, State of Florida, 0037247

D'AZZO, JOHN J., P.E., Professional Engineer, State of Ohio, E-12550

GOLTZ, MARK N., DEE, Diplomat Environmental Engineer, American Academy of Environmental Engineers,
Hazardous Waste Management Specialty Certification

GOLTZ, MARK N., P.E., Professional Engineer, State of Minnesota, 13978

GUNSCH, GREGG H., P.E., Professional Engineer, State of Ohio, 56828

HOUPIS, CONSTANTINE H., P.E., Professional Engineer, State of Ohio, E-19084

JODOIN, VINCENT J., P.E., Professional Engineer, State of Ohio, E-57166

PALAZOTTO, A., P.E., Professional Engineer, State of Ohio, E-39937

PERRAM, GLEN, P.E., Professional Engineer, State of Ohio, E-060534

QUINN, DENNIS W., P.E., Professional Engineer, State of Ohio, E-056873

SPENNY, CURTIS H., P.E., Professional Engineer, State of Ohio, E-038759

3. CONTRIBUTIONS TO THE AIR FORCE

3.1 DOCTORAL DISSERTATIONS

Alsing, Stephen G. *The Evaluation of Competing Classifiers*. AFIT/DS/ENS/00-01. Faculty Advisor: Dr. Kenneth W. Bauer, Jr., DSN: 785-6565, ext 4328. Sponsor: AFRL/SNAT.

Hamrick, Joseph L. *Effects of Foreign Object Damage From Small Hard Particles On The High-Cycle Fatigue Life of Ti-6Al-4V*. AFIT/DS/ENY/99-02. Faculty Advisor: Dr. Shankar Mall, DSN: 785-3636, ext 4587. Sponsor: AFRL/MLLN.

Mac Lachlan, Michael J. *Computational Methods for Quantum Reactive Scattering in One Dimension*. AFIT/DS/ENP/99-02. Faculty Advisor: Dr. David Weeks, DSN: 785-3636, ext 4561. Sponsor: AFRL/AFOSR/NL.

Oppenheimer, Michael W. *Algorithm Development for On-Line Control of the Airborne Laser*. AFIT/DS/ENG/00-02. Faculty Advisor: Dr. Meir Pachter, DSN: 785-3636, ext 4593. Sponsor: AFRL/DEBA.

Perel, Victor *Three-Dimensional Dynamic Stress Analysis of Sandwich Plates*. AFIT/DS/ENY/00-02. Faculty Advisor: Dr. Anthony N. Palazotto, DSN: 785-3636, ext 4599. Sponsor: AFRL/AFOSR.

Salah, Moatz M. *Turbo Codes for Wireless Mobile Communication Systems Applications*. AFIT/DS/ENG/00-01. Faculty Advisor: Major Richard A. Raines, DSN: 785-3636, ext 4715.

SanGregory, Samuel L. *Approximation and Optimization of an Auditory Model for Realization in VLSI Hardware*. AFIT/DS/ENG/99-07. Faculty Advisor: Major Charles P. Brothers, DSN: 785-3636, ext 4618. Sponsor: AFRL/HECA.

Scott, Michael B. *Electrical and Optical Characterization of Intrinsic and Ion-Implantation Induced Defects in 6H- and 4H-SiC*. AFIT/DS/ENP/99-04. Faculty Advisor: Dr. Yung Kee Yeo, DSN: 785-3636, ext 4532. Sponsor: AFRL/AFOSR/NE.

3.2 MASTERS THESES BY PROGRAM

3.2.1 ACQUISITION MANAGEMENT

Burke, David A. *Towards a Game Theory Model of Information Warfare*. AFIT/GSS/LAL/99D-1. Faculty Advisor: Maj David P. Biros, DSN: 785-3636, ext 4826. Sponsor: HQ AFIWC/EA.

3.2.2 AERONAUTICAL ENGINEERING

Boatwright, Joshua T. *Finite Element Analysis of a Composite Cylindrical Shell with a Cutout Under a Fatigue Load*. AFIT/GAE/ENY/00M-03. Faculty Advisor: Dr. Anthony N. Palazotto, DSN: 785-3636, ext 4599. Sponsor: AFRL/AFOSR/NA.

Cseke, Peter. *Modeling Piezoceramic Twist Actuation in Single-Cell Anisotropic Torque Box of Low-Observable UAV Wing*. AFIT/ENY/GAE/00M-4. Faculty Advisor: Maj Gregory S. Agnes, DSN: 785-6565, ext 4317. Sponsor: AFIT.

Daetz, Daniel D. *Development of a Biodynamic Interference Suppression Algorithm for a Helmet-Mounted Display Tracking Task in the Presence of Aircraft Buffet*. AFIT/GAE/ENY/00M-02. Faculty Advisor: Dr. Bradley S. Liebst, DSN: 785-3636, ext 4636. Sponsor: AFRL/HECV.

Duffield, Colin J. *An Experimental Investigation on Periodic Forced Vibrations of a Bladed Disk*. AFIT/GAE/ENY/00M-5. Faculty Advisor: Maj Gregory S. Agnes, DSN: 785-6565, ext 4317. Sponsor: AFRL/AFOSR.

Hall, James K. *Three Dimensional Formation Flight Control*. AFIT/GAE/ENY/00M-06. Faculty Advisor: Dr. Meir Pachter, DSN: 785-3636, ext 4593. Sponsor: AFRL/VACA.

Hopper, David R. *Measurements of the Effects of Tunnel Wall Proximity on the Velocity Field Upstream of a Rod With Vortex Shedding in Low-Speed Flow*. AFIT/GAE/ENY/00M-07. Faculty Advisor: Dr. Paul I. King, DSN: 785-3636, ext 4628. Sponsor: AFRL/AFOSR/NA.

Jones, Keith W. *Finite Element Model Updating Using Antiresonant Frequencies*. AFIT/GAE/ENY/00M-08. Faculty Advisor: Lt Col Jeffrey Turcotte, DSN: 785-3636, ext 4597. Sponsor: AFRL/VSDV.

Pendleton, Ryan R. *Use of Unusual Aircraft Orientations to Generate Low Observable Routes*. AFIT/GAE/ENY/00M-09. Faculty Advisor: Dr. C.H. Spenny, DSN: 785-6565, ext 4320. Sponsors: ASC/RAV and AFRL/MNGN.

Pritchard, David E. *Dynamic Route Replanning and Retasking of Unmanned Aerial Reconnaissance Vehicles*. AFIT/GAE/ENY/00M-10. Faculty Advisor: Dr. C.H. Spenny, DSN: 785-6565, ext 4320. Sponsor: ASC/RAV.

Schwabacher, Gregory J. *Computational Fluid Dynamics Testing For Drag Reduction Of An Aircraft Laser Turret*. AFIT/GAE/ENY/00M-11. Faculty Advisor: Maj Jeffrey Bons, DSN: 785-255-3636, ext 4643. Sponsor: AFRL/SN.

Thornburg, Jefery T. *Simulations of Flowing Supercritical n-Decane*. AFIT/GAE/ENY/00M-12. Faculty Advisor: Lt Col Jeffery K. Little, (334) 953-7848. Sponsor: AFRL/PRSF.

Thurling, Andrew J. *Improving UAV Handling Qualities Using Time Delay Compensation*. AFIT/GAE/ENY/00M-01. Faculty Advisor: Prof Bradley Liebst, DSN: 785-3069. Sponsor: USAF Test Pilot School.

3.2.3 APPLIED MATHEMATICS

Anderson, Gregg T., *A Numerical Simulation of a Carbon Black Suspension Cell via a Time-Reversed, Double Layer Compute Algorithm*. AFIT/GAM/ENC/99D-01. Faculty Advisor: Prof William P. Baker, DSN: 785-3636, ext 4517. Sponsor: AFRL/MLPJ.

3.2.4 APPLIED PHYSICS

Acebal, Ariel O. *Testing of the New USGS K Index Algorithm at Bear Lake Observatory*. AFIT/GAP/ENP/00M-01. Faculty Advisor: Maj Devin Della-Rose, DSN: 785-3636, ext 4514. Sponsor: AFWA.

Doser, Kelly B. *Quantifying the Protonospheric Effect on PRISM*. AFIT/GAP/ENP/00M-02. Faculty Advisor: Dr. William Bailey, DSN: 785-3636, ext 4501. Sponsor: AFRL/VSBP.

Myers Jr., James W. *Spatially Resolved Temperature Determination in I₂ Gas Using Doppler-Limited Saturation Spectroscopy*. AFIT/GAP/ENP/00M-03. Faculty Advisor: Lt Col Glen Perram, DSN: 785-3636, ext 4504. Sponsor: AFRL/DEC.

Scott, M. D. *Validation of the Ionospheric Forecast Model (IFM) Version 3*. AFIT/GAP/ENP/00M-04. Faculty Advisor: Dr. David Weeks, DSN: 785-3636, ext 4561. Sponsor: SMC Det 11.

3.2.5 ASTRONAUTICAL ENGINEERING

Fulton, Joseph M. *Attitude Control and Multimedia Representation of Air Force Institute of Technology's (AFIT'S) Simulation Satellite (SIMSAT)*. AFIT/GA/ENY/00M-01. Faculty Advisor: Maj Gregory S. Agnes, DSN: 785-6565, ext 4317. Sponsor: AFIT/ENY.

Gaeta, Douglas E. *Damage Identification in a Real Structure Using Resonant and Anti-Resonant Frequencies*. AFIT/GA/ENY/00M-02. Faculty Advisor: Lt Col Jeffrey Turcotte, DSN: 785: 3636, ext 4597. Sponsor: AFRL/VSD.

Jarosh, Julian R. *Active and Adaptive Control for Payload Launch Vibration Isolation*. AFIT/GA/ENY/00M-03. Faculty Advisor: Maj Gregory S. Agnes, DSN: 785-6565, ext 4317. Sponsor: AFRL/VSDV.

McFarland, Charles B. *Investigation Into The Adaptation Of A Steam Injector For Use On A Liquid Rocket Engine*. AFIT/GA/ENY/00M-04. Faculty Advisor: Lt Col J. K. Little, DSN: 785-3069. Sponsor: AFIT/ENY.

Wagner, John W. *Optical Metrology of Adaptive Membrane Mirrors*. AFIT/GA/ENY/00M-05. Faculty Advisor: Maj Gregory S. Agnes, DSN: 785-6565, ext 4317. Sponsor: AFRL/AFOSR.

3.2.6 COMPUTER ENGINEERING

Arslan, Musa Serdar *A Methodology for Integrating Tools in a Web-Based Environment*. AFIT/GCE/ENG/00J-01. Faculty Advisor: Professor Thomas C. Hartrum, DSN: 785-3636, ext 4581. Sponsor: AFIT/RRD.

Harmer, Paul K. *A Distributed Agent Architecture for a Computer Virus Immune System*. AFIT/GCE/ENG/00M-02. Faculty Advisor: Dr. Gary B. Lamont, DSN: 785-3636, ext 4718. Sponsor: AFRL/AFOSR/NM.

Marsh, David W. *Formal Object State Model Transformations for Automated Agent System Synthesis*. AFIT/GCE/ENG/00M-03. Faculty Advisor: Dr. Thomas C. Hartrum, DSN: 785-3636, ext 4581. Sponsor: AFRL/AFOSR/NM.

Sezer, Ergin *Mission Route Planning with Multiple Aircraft & Targets Using Parallel A* Algorithm*. AFIT/GCE/ENG/00M-04. Faculty Advisor: Prof Gary B. Lamont, DSN: 785-3450, ext 4718. Sponsor: AFRL/SNAT.

3.2.7 COMPUTER SYSTEMS

- Berridge, Walter T. *Extracting Mission Semantics from Unmanned Aerial Vehicle Telemetry and Flight Plans*. AFIT/GCS/ENG/00M-01. Faculty Advisor: Maj Michael Talbert, DSN: 785-6565, ext 4280. Sponsor: AFRL/IFEC.
- Buckwalter, Steven R. *Generating Executable Persistent Data/Retrieval Code from Object-Oriented Specifications*. AFIT/GCS/ENG/00M-02. Faculty Advisor: Maj Robert Graham, DSN: 785-3636, ext 4595. Sponsor: AFRL/IFTD.
- Cochran, Jordon T. *Steganographic Computer Warfare*. AFIT/GCS/ENG/00M-03. Faculty Advisor: Dr. Henry B. Potoczny, DSN: 785-6565, ext 4282. Sponsor: NAIC/TAIF.
- Conkling, Stephen R. *A Comparative Analysis of Mobility Management Schemes in a Low Earth Orbit Satellite Network*. AFIT/GCS/ENG/00M-04. Faculty Advisor: Maj Richard Raines, DSN: 785-3636, ext 4715. Sponsor: AFCA/ITAI.
- Cornn, Gary L., Jr. *An Object-Oriented Repository-Based Software Synthesis System*. AFIT/GCS/ENG/00M-05. Faculty Advisor: Maj Robert Graham, DSN: 785-3636, ext 4595. Sponsor: AFRL/IFTD.
- Damp, Kevin T. *An Analysis of the Effectiveness of a Constructive Induction-Based Virus Detection Prototype*. AFIT/GCS/ENG/00J-01. Faculty Advisor: Dr. Gregg H. Gunsch, DSN: 785-6565, ext 4281. Sponsor: AFRL/AFOSR/NM.
- Douglas, James S. *Distributed Object System Engineering for Terminal Aerodrome Forecast Validation and Metrics Processing*. AFIT/GCS/ENG/00M-007. Faculty Advisor: Dr. Gary B. Lamont, DSN: 785-3636, ext 4718. Sponsor: HQ AFWA/XP.
- Goeringer, Michael L. *Three-Dimensional Data Visualization of Electronic Military Intelligence Using the Project Broadsword System*. AFIT-GCS-ENG-00M-08. Faculty Advisor: Lt Col Timothy Jacobs, DSN: 785-3636, ext 4279. Sponsor: AFRL/ RRS IFED.
- Joga, Meriellen C. *Data Warehouse Techniques to Support Global On-Demand Weather Forecast Metrics*. AFIT/GCS/ENG/00M-09. Faculty Advisor: Dr. Henry B. Potoczny, DSN: 785-6565, ext 4282. Sponsor: HQ AFWA/XP.
- Kern, Sean G. *A Human-Centered Approach for Designing Decision Support Systems*. AFIT/GCS/ENG/00M-10. Faculty Advisor: Dr. Henry B. Potoczny, DSN: 785-6565, ext 4282. Sponsor: 2SWS/DOUE.
- Kurkowski, Stuart H. *An Information Visualization Solution for the Analysis of the AFM Simulation Output Data*. AFIT/GCS/ENG/00M-11. Faculty Advisor: Lt Col Timothy Jacobs, DSN: 785-3636, ext 4279. Sponsor: HQ AMC/XPY.
- Lacey, Timothy H. *A Formal Methodology and Technique for Verifying Communication Protocols in a Multi-Agent Environment*. AFIT/GCS/ENG/00M-12. Faculty Advisor: Maj Scott A. DeLoach, DSN: 785-3636, ext 4622. Sponsor: AFRL/AFOSR/NM.
- Lathrop, Dale A. *Viral Computer Warfare Via Activation Engine Employing Steganography*. AFIT/GCS/ENG/00M-14. Faculty Advisor: Dr. Henry B. Potoczny, DSN: 785-6565, ext 4282. Sponsor: NAIC/TAIF.
- Leon, Darryl N. *An Intelligent User Interface to Support Air Force Weather Product Generation and Automated Metrics*. AFIT/GCS/ENG/00M-15. Faculty Advisor: Major Michael L. Talbert, DSN: 785-3636, ext 4280. Sponsor: HQ AFWA/XP.

McDonald, Jeffrey T. *Agent Based Framework for Collaborative Engineering Model Development*. AFIT/GCS/ENG/00M-16. Faculty Advisor: Major Michael L. Talbert, DSN: 785-6565, ext 4280. Sponsor: AFRL/SNZW.

Moesner, John F. *A Method of Focusing the Attention of the Decision-Maker on Uncertain Information*. AFIT/GCS/ENG/00M-17. Faculty Advisor: Dr. Gregg Gunsch, DSN: 785-6565, ext 4182. Sponsor: NAIC/TAIT.

Muller, Alexander, Jr. *A Comparative Analysis of Proposed Mobility Support Schemes for IP Multicasting*. AFIT/GCS/ENG/00J-02. Faculty Advisor: Maj Richard A. Raines, DSN: 785-3636, ext 4715. Sponsor: AFCA/ITAI.

Neville, Brett D. *A Study of The Simple Network Management Protocol For PVC Configuration in ATM Networks*. AFIT/GCS/ENG/OOJ-03. Faculty Advisor: Major Richard A. Raines, DSN: 785-3636, ext 4715. Sponsor: AFCS/ITAI.

Pearson, Joseph C. *An Improved Algorithm for Translating Relational Schemas into an Object Model*. AFIT/GCS/ENG/00J-04. Faculty Advisor: Dr. Thomas C. Hartrum, DSN: 785-3636, ext 4581. Sponsor: DARPA/ISO.

Raphael, Marc J. *Active Multispectral Bidirectional Reflectance Distribution Function Measurement System*. AFIT/GCS/ENG/00M-21. Faculty Advisor: Major Scott A. DeLoach, DSN: 785-3636, ext 4622. Sponsor: AFRL/AFOSR/NM.

Robinson, David J. *A Component Based Approach to Agent Specification*. AFIT/GCS/ENG/00M-22. Faculty Advisor: Major Scott A. DeLoach, DSN: 785-3636, ext 4622. Sponsor: AFRL/AFOSR/NM.

Ward, Jason T. *Enhancing a Virtual Distributed Library User Interface Via Server-Side User Profile Caching*. AFIT/GCS/ENG/00M-23. Faculty Advisor: Major Michael L. Talbert, DSN: 785-6565, ext 4280. Sponsor: AFRL/SNAS.

Watkins, Evan T. *Improving the Analyst and Decision-Maker's Perspective Through Uncertainty Visualization*. AFIT/GCS/ENG/00M-24. Faculty Advisor: Dr. Gregg Gunsch, DSN: 785-6565, ext 4182. Sponsor: NAIC/TAIT.

Williams, Darin L. *Explicitly Modeling Hierarchically Heterogeneous Software Architectures in an Object-Oriented Formal Transformation System*. AFIT/GCS/ENG/00M-25. Faculty Advisor: Major Robert P. Graham, DSN: 785-3636, ext 4595. Sponsor: AFRL/IFTD.

Wood, Mark F. *Multiagent Systems Engineering: A Methodology for Analysis and Design of Multiagent Systems*. AFIT/GCS/ENG/00M-26. Faculty Advisor: Major Scott A. DeLoach, DSN: 785-3636, ext 4622. Sponsor: AFRL/AFOSR/NM.

3.2.8 ELECTRICAL ENGINEERING

Akers, Geoffrey A. *Low Band Direction Finding Using an Ensemble of Structurally Integrated Antennas*. AFIT/GE/ENG/00M-01. Faculty Advisor: Dr. Andrew J. Terzuoli, Jr., DSN: 785-3636, ext 4717. Sponsor: AFRL/SNRP.

Ashby, Michael R. *Tool-Based Integration and Code Generation of Object Models*. AFIT/GE/ENG/00M-02. Faculty Advisor: Dr. T. C. Hartrum, DSN: 785-3636, ext 4581. Sponsor: AFRL/SNZW.

Banker, David M. *Modeling and Simulation of Communication Systems in OPNET*. AFIT/GE/ENG/00M-03. Faculty Advisor: Dr. Michael Temple, DSN: 785-3636, ext 4703. Sponsor: HQ AFCA/ITAT.

Blake, Travis F. *Investigation Of Ge₂Te₂sb₅ Chalcogenide Thin Film For Use As An Analog Memory*. AFIT/GE/ENG/00M-04. Faculty Advisor: Maj Charles P. Brothers, Jr., DSN: 785-3636, ext 4618. Sponsor: AFRL/VSSE.

Bracy, Brian L. *Evaluation of a Method for Kinematic GPS Carrier-Phase Ambiguity Resolution Using a Network of Reference Receivers*. AFIT/GE/ENG/00M-5. Faculty Advisor: Maj John F. Raquet, DSN: 785-3636, ext 4580. Sponsor: 746th Test Squadron.

Broadbuss, James T. *Stochastic Modeling-Based DGPS Estimation Algorithm*. AFIT/GE/ENG/00M-06. Faculty Advisor: Dr. Meir Pachter, DSN: 785-3636, ext 4593. Sponsor: AFRL/SNAR.

Cekic, Orhan *Development of a Real Time Guidance System for a Kinematic Test Vehicle*. AFIT/GE/ENG/00M-21. Faculty Advisor: Maj John Raquet, DSN: 785-3636, ext 4580. Sponsor: AFRL/SNAR.

Corbell, Phillip M. *Design and Validation of an Accurate GPS Signal and Receiver Truth Model for Comparing Advanced Receiver Processing Techniques*. AFIT/GE/ENG/00M-07. Faculty Advisor: Lt Col Mikel Miller, DSN: 785-6565, ext 4278. Sponsor: AFRL/SNAR.

Formwalt, Byron P. *Realtime Color Stereovision Processing*. AFIT/GE/ENG/00M-08. Faculty Advisor: Lt Col Mikel Miller, DSN: 785-6565, ext 4278. Sponsor: AFRL/SNAT.

Gebhardt, Matthew J. *A Comparative Analysis of Cockpit Display Development Tools*. AFIT/GE/ENG/00M-10. Faculty Advisor: Lt Col Timothy Jacobs, DSN: 785-6565, ext 4279. Sponsor: AFRL/IFSC.

Mellon, George T., II. *Simulation and Analysis of a Time Difference of Arrival GPS Jammer Location System*. AFIT/GE/ENG/00M-11. Faculty Advisor: Maj John Raquet, DSN: 785-3636, ext 4580. Sponsor: 746th Test Squadron.

Okuyucu, Ahmet *Effects of Jamming on Radars*. AFIT/GE/ENG/00M-22. Faculty Advisor: Dr. Vittal Pyati, DSN: 785-3636, ext 4620. Sponsor: AFRL/SNZW.

Richards, Daniel R., Jr. *Non-Uniformly Spaced Array Elements*. AFIT/GE/ENG/00M-14. Faculty Advisor: Maj Peter Collins, DSN: 785-6565, ext 4304. Sponsor: AFRL/SNRP.

Roberts, Marcus L. *Synchronization of a Transform Domain Communication System*. AFIT/GE/ENG/00M-15. Faculty Advisor: Dr. Michael A. Temple, DSN: 785-3636, ext 4703. Sponsor: AFRL/SNRW.

Saville, Michael A. *Investigation of Conformal High-Impedance Ground Planes*. AFIT/GE/ENG/00M-17. Faculty Advisor: Maj Peter Collins, DSN: 785-6565, ext 4304. Sponsor: AFRL/SNRP.

Stringer, Jeremy P. *The Air Force Institute of Technology (AFIT) Micro Electro-Mechanical Systems (MEMS) Interferometric Gyroscope (MiG)*. AFIT/GE/ENG/00M-18. Faculty Advisor: Lt Col Mikel Miller, DSN: 785-6565, ext 4278. Sponsor: AFRL/SN.

Thomson, Steven A. *Validation and Verification of Formal Specifications in Object-Oriented Software Engineering*. AFIT/GE/ENG/00S-01. Faculty Advisor: Maj Robert P. Graham, Jr., DSN: 785-3636, ext 4595. Sponsor: AFRL/IFTD.

Zumwalt, Michel P. *Robust High Range Resolution Radar for Target Classification*. AFIT/GE/ENG/00M-19. Faculty Advisor: Dr. Steven C. Gustafson, DSN: 785-3636, ext 4598. Sponsor: AFRL/SN.

Zwickel, Ronald J. *A Performance Analysis of a Joint LMDS/Satellite Communication Network*. AFIT/GE/ENG/00M-20. Faculty Advisor: Maj Richard A. Raines, DSN: 785-3636, ext 4715. Sponsor: AFCA/ITAL.

3.2.9 ELECTRO-OPTICS

Choi, B.J. *Investigation of Laser Beam Combining and Cleanup via Seeded Stimulated Brillouin Scattering in Multimode Optical Fibers*. AFIT/GEO/ENP/00M-01. Faculty Advisor: Dr. Won Roh, DSN: 785-3636, ext 4509. Sponsor: AFRL/AFOSR.

Crabtree, Peter N. *Multi-Conjugate Adaptive Optics for the Compensation of Amplitude and Phase Distortions*. AFIT/GEO/ENG/00M-01. Faculty Advisor: Dr. Steven C. Gustafson, DSN: 785-3636, ext 4598. Sponsor: AFRL/DES.

Glavic, F. J. *Tunable Mid-IR Optical Parametric Oscillator Using Periodically Poled Rubidium Titanyl Arsenate*. AFIT/GEO/ENP/00M-2. Faculty Advisor: Dr. Won Roh, DSN: 785-3636, ext 4509. Sponsor: AFRL/SNJ.

Proctor, Mark J. *Active Multispectral Bidirectional Reflectance Distribution Function Measurement System*. AFIT/GEO/ENG/00M-02. Faculty Advisor: Major Eric P. Magee, DSN: 785-4604, ext 4023. Sponsor: AFRL/SNJ.

Sperl, Daniel E. *Post-Processing Resolution Enhancement of Open Skies Photographic Imagery*. AFIT/GEO/ENG/00M-03. Faculty Advisor: Dr. Steven C. Gustafson, DSN: 785-3636, ext 4598. Sponsor: NAIC/GTN.

3.2.10 ENGINEERING AND ENVIRONMENTAL MANAGEMENT

Albritton, Patrick M. *Methodology for Evaluating the Impact of Aircraft Shelter Systems on Aircraft Operations at Forward Operating Locations*. AFIT/GEE/ENS/00M-01. Faculty Advisor: Maj W. Paul Murdock. Sponsor: ASC/YS.

Buzo, Christopher D. *A Decision Support Tool to Aid Campaign Planners in Selecting Combat Aircraft for Theater Crisis*. AFIT/GEE/ENS/00M-02. Faculty Advisor: Lt Col Alan Johnson, DSN: 785-6565, ext 4284. Sponsor: DARPA/ISO.

Carlson, David W. *Factors Affecting Perceptions of Ethics within Organizations: A Case Study of Organizations within Aeronautical Systems Center (ASC)*. AFIT/GEE/ENV/00M-01. Faculty Advisor: Maj Michael T. Rehg, DSN: 785-3636, ext 4711. Sponsor: ASC/HRMB.

Davis, Cynthia M. *Linking Engineer Career Orientation and Human Resource Management Practices: Does Fit Affect Retention?*. AFIT/GEE/ENV/00M-02. Faculty Advisor: Maj Michael T. Rehg, DSN: 785-3636, ext 4711. Sponsor: HQ AFCEA/CEO.

Eck, Craig P. *Effects of Moisture Content in Solid Waste Landfills*. AFIT/GEE/ENV/00M-03. Faculty Advisor: Dr. M. L. Shelly, DSN: 785-2998. Sponsor: AFIT.

Feng, Peter P. *Modeling the Effect of Nonlinear and Rate-limited Sorption on the Natural Attenuation of Chlorinated Ethenes*. AFIT/GEE/ENV/00M-04. Faculty Advisor: Dr. Mark N. Goltz, DSN: 785-255-3636, ext 4638. Sponsor: AFRL/MLQ.

Ferland, Derek R. *In Situ Treatment of Chlorinated Ethene-Contaminated Groundwater Using Horizontal Flow Treatment Wells*. AFIT/GEE/ENV/00M-05. Faculty Advisor: Dr. Mark N. Goltz, DSN: 785-255-3636, ext 4638. Sponsor: AFRL/MLQ.

Fox, Joseph M. *Chromium Concentration Bias In The Particle Size Distribution Of Primer Overspray*. AFIT/GEE/ENV/00M-06. Faculty Advisor: Maj Peter T. LaPuma, DSN: 785-6565, ext 4319. Sponsor: AL/MLQ.

Harris, Rodney C. *Analysis of the Air Force ISO 14001 Pilot Study Conducted by DoD*. AFIT/GEE/ENV/00M-07. Faculty Advisor: Maj Michael T. Rehg, DSN: 785-3636, ext 4711. Sponsor: HQ AETC.

Henry, Elwood. *Cost Analysis Between SABER and Design Bid Build Construction*. AFIT/GEE/ENV/00M-08. Faculty Advisor: Maj Heidi S. Brothers, DSN: 785-3636, ext 4800. Sponsor: AFIT/CESS.

Hoefar, Colby D. *Modeling Chlorinated Ethene Removal in Constructed Wetlands: A System Dynamics Approach*. AFIT/GEE/ENV/00M-09. Faculty Advisor: Dr. Michael L. Shelley, DSN: 785-2998. Sponsor: AFRL/MLQ and DAGSI.

Kennedy, James F. *The Influence of Outsourcing on Job Satisfaction and Turnover Intentions of Air Force Civil Engineer Company Grade Officers*. AFIT/GEE/ENV/00m-10. Faculty Advisor: Maj Mark A. Ward, DSN: 785-3636, ext 4742. Sponsor: HQ USAF/ILEI.

Leighton, Travis K. *Empirical Evaluation of the Civil Engineer Career Pyramid and Career Guidance*. AFIT/GEE/ENV/00M-11. Faculty Advisor: Maj Heidi Brothers, DSN: 785-3636 Ext 4800 and Maj Mark Ward, DSN: 785-3636, ext 4742. Sponsor: AFMC/CE, AFMC/XP and AFIT/CE.

Leonard, Christopher J. *Toxicity of Tolyltriazole to Bacillus Microorganisms*. AFIT/GEE/ENV/00M/12. Faculty Advisor: Prof Charles A. Bleckmann, DSN: 785-3636, ext 4721. Sponsor: ASC/EME.

Mitchell, Heather L. *Toxicity Of Tolyltriazole To Gram-Positive Coccus Microorganisms*. AFIT/GEE/ENV/00M-13. Faculty Advisor: Prof Charles A. Bleckmann, DSN: 785-3636, ext 4721. Sponsor: ASC/EME.

Morgan, Tiffany J. *Chromate Dissociation from Primer Paint in Simulated Lung Fluid*. AFIT/GEE/ENV/00M-14. Faculty Advisor: Maj Peter T. LaPuma, DSN: 785-6565, ext 4319. Sponsor: AL/MLQ.

Stumpe, Brian M. *Organizational and Individual Effects on the Reporting of Wrongdoing in the Workplace*. AFIT/GEE/ENV/00M-15. Faculty Advisor: Maj Mark A. Ward, DSN: 785-2998. Sponsor: AFIT.

Suhajda, Sierra H. *A Pharmacokinetic Study Of The Effects Of Stress On Chemical Exposure*. AFIT/GEE/ENV/00M-16. Faculty Advisor: Dr. Michael L. Shelley, DSN: 785-3636, ext 4594. Sponsor: AFRL/HEST.

Williamson, Chaz M. *Use of Genetic Algorithms to Characterize Groundwater Contamination Source Areas*. AFIT/GEE/ENV/00M-17. Faculty Advisor: Dr. Mark N. Goltz, DSN: 785-3636, ext 4638. Sponsor: AFRL/MLQ.

3.2.11 ENVIRONMENTAL SCIENCE AND ENGINEERING

Hack, Charles, *Evaporation of Jet Fuels*. AFIT/GES/ENC/99D-01. Faculty Advisor: Prof Dennis W. Quinn, DSN: 785-3636, ext 4522. Sponsor: AFRL/AFOSR/NL.

3.2.12 INFORMATION RESOURCE MANAGEMENT

Abell, Sean P. *Implementation of Speech Recognition Software for Text Processing: An Exploratory Analysis*. AFIT/GIR/LAS/99D-1. Faculty Advisor: Maj Michael G. Morris, DSN: 785-3636, ext 4578. Sponsor: AFRL.

Cunningham, Franklin E., Jr. *Network Security versus Network Connectivity: A Framework for Addressing the Issues Facing the Air Force Medical Community*. AFIT/GIR/LAS/99D-2. Faculty Advisor: Maj David P. Biros, DSN: 785-3636, ext 4826. Sponsor: HQ AFCA/GCI.

Fiorello, Alan P. *Power, Performance, and Perception (P^3): Integrating Usability Metrics and Technology Acceptance Determinants to Validate a New Model for Predicting System Usage*. AFIT/GIR/LAS/99D-3. Faculty Advisor: Maj Michael G. Morris, DSN: 785-3636, ext 4578. Sponsor: AFRL/HECA.

Heberlie, Brian J., and Mary O. Tolbert *Impact of Actual Facilitator Alignment, Co-Location, and Video Intervention on the Efficacy of Distributed Group Support Systems*. AFIT/GIR/LAS/99D-4. Faculty Advisor: Maj Paul W. Thurston, DSN: 785-6565, ext 4315. Sponsor: AFRL/HESS.

- Horony, Mark D. *Information Systems Incidents: The Development of a Damage Assessment Model.* AFIT/GSS/LAL/99D-5. Faculty Advisor: Maj David P. Biros, DSN: 785-3636, ext 4826. Sponsor: OASD/C3I.
- Kitchen, Robert C. *Why Didn't You Tell Me?: Toward Building a Model of Why Information is not Shared Well in Organizations.* AFIT/GIR/LAS/99D-6. Faculty Advisor: Dr Alan R. Heminger, DSN: 785-3636, ext 4797. Sponsor: AFIT.
- Little, Rex W. *An Analysis of Training Adequacy and Additional Training Requirements as Perceived by Communications and Information Officers.* AFIT/GIR/LAS/99D-7. Faculty Advisor: Maj David P. Biros, DSN: 785-3636, ext 4826. Sponsor: HQ AF/SCXP.
- Oxborrow, Glade G. *Defining Virtual Interactions: A Taxonomy for Researchers and Practitioners.* AFIT/GIR/LAS/99D-8. Faculty Advisor: Maj Michael G. Morris, DSN: 785-3636, ext 4578. Sponsor: HQ DIA.
- Singer, Kristopher A. *An Assessment of Mentoring Functions and Barriers to Mentoring.* AFIT/GIR/LAS/99D-9. Faculty Advisor: Maj Paul W. Thurston, DSN: 785-6565, ext 4315. Sponsor: AFIT.
- Thorley, Eric J. *A Successful Information Warfare Defense for an Air Force Major Command.* AFIT/GIS/LAL/99D-1. Faculty Advisor: Maj David P. Biros, DSN: 785-3636, ext 4826. Sponsor: HQ AFIWC/EA.

3.2.13 MATERIAL SCIENCE

- McFall, J. L. *Optical Investigation of Molecular Beam Epitaxy $Al_xGa_{1-x}N$ to Determine Material Quality.* AFIT/GMS/ENP/00M-01. Faculty Advisor: Dr. Robert Hengehold, DSN: 785-3636, ext 4502. Sponsor: AFRL/MLPA.
- Miller, Gerald B. *Mechanics of a Functionally-Graded Titanium Matrix Composite.* AFIT/GMS/ENY/00M-01. Faculty Advisor: Dr. Shanker Mall, DSN: 785-3636, ext 4587. Sponsor: AFRL/AFOSR/NA.
- Neslen, C. L. *Chemical Mechanical Polishing Optimization for 4H-SiC.* AFIT/GMS/ENP/00M-02. Faculty Advisor: Dr. Robert Hengehold, DSN: 785-3636, ext 4502. Sponsor: AFRL.
- Steel, Steven G. *Monotonic and Fatigue Loading of an Oxide/Oxide Ceramic Matrix Composite.* AFIT/GMS/ENY/00M-02. Faculty Advisor: Dr. Shanker Mall, DSN: 785-3636, ext 4587. Sponsor: AFRL/MLLN.

3.2.14 METEOROLOGY

- Boll, Elizabeth A. *An Analysis in Cloud-To-Ground Lightning Over Land Versus Water.* AFIT/GM/ENP/00M-01. Faculty Advisor: Maj Gary Huffines, DSN: 785-3636, ext 4511. Sponsor: 75th OSS/OSW.
- Calidonna, M.J. *Extensible Markup Language as a Weather Tool.* AFIT/GM/ENP/00M-02. Faculty Advisor: Lt Col Cecilia Miner. Sponsor: AFRL/IFEB.
- Cloys, K. P. *A Neural Network Solution to Predicting Wind Speed at Cape Canaveral's Atlas Launch Pad.* AFIT/GM/EMP/00M-03. Faculty Advisor: Dr. Michael Walters, DSN: 785-3636, ext 4681. Sponsor: 45 WS/SYR.
- Coleman, L. K. *Use of Climatology to Predict Maximum Wind Speeds at the Kennedy Space Center and Cape Canaveral Air Station.* AFIT/GM/ENP/00M-04. Faculty Advisor: Lt Col Michael Walters, DSN: 785-3636, ext 4681. Sponsor: AFTAC.

Darwin, M. W. *A 3D Display System for Lightning Detection and Ranging (LDAR) Data*. AFIT/GM/ENP/00M-05. Faculty Advisor: Lt Col Cecilia Miner. Sponsor: PAFB/45 WS/SYR.

Dickerson, S. N. *An Evaluation of Microburst Prediction Indices for the Kennedy Space Center and Cape Canaveral Air Station (KSC/CCAS)*. AFIT/GM/ENP/00M-06. Faculty Advisor: Lt Col Cecilia Miner. Sponsor: 45th Weather Sqd.

Goetz, E.C. *Descriptive and Conditional Climatology for Specific Launch Commit Criteria for Cape Canaveral, Florida*. AFIT/GM/ENP/00M-07. Faculty Advisor: Maj Gary Huffines, DSN: 785-3636, ext 4511. Sponsor: 45th WS.

Holmes, M. W. *Techniques for Forecasting the Cessation of Lightning at Cape Canaveral Air Station and the Kennedy Space Center*. AFIT/GM/ENP/00M-08. Faculty Advisor: Maj Gary Huffines, DSN: 785-3636, ext 4511. Sponsor: 45 Weather Squadron.

Parsons, T. L. *Determining the Horizontal Distance Distribution of Cloud-to-Ground Lightning*. AFIT/GM/ENP/00M-09. Faculty Advisor: Maj Gary Huffines, DSN: 785-3636, ext 4511. Sponsor: AFRL/XP.

Renwick, T. G. *Timing of Thunderstorm Occurrence for Cape Canaveral, Florida*. AFIT/GM/ENP/00M-10. Faculty Advisor: Lt Col Cecilia Miner. Sponsor: 45th WS.

Saul, Jon M. *Atmospheric Temperature Profiles By Ground-Based Infrared Spectrometer Measurements*. AFIT/GM/ENP/00M-11. Faculty Advisor: Lt Col Glen Perram, DSN: 785-3636, ext 4504. Sponsor: AFRL/VSBM.

Shoemaker, L. C. *Mixed Layer Height Estimates – A Statistical Analysis of Algorithm Performance*. AFIT/GM/ENP/00M-12. Faculty Advisor: Lt Col Michael Walters, DSN: 785-3636, ext 4681. Sponsor: AFTAC.

Stenger, R. A. *Sensitivity Studies on a Limited Area Mesoscale Model: An Examination of Lateral Boundary Placement, Grid Resolution and Nesting Type*. AFIT/GM/ENP/00M-13. Faculty Advisor: Lt Col Michael Walters, DSN: 785-3636, ext 4681. Sponsor: HQ AFWA.

Trigg, Jr. Jimmie L. *A Study of Morning Radiation Fog Formation*. AFIT/GM/ENP/00M-14. Faculty Advisor: Maj Gary Huffines, DSN: 785-3636, ext 4511. Sponsor: 88th Weather Squadron.

3.2.15 NUCLEAR ENGINEERING

Frederick, Jr. Timothy A. *Performance Evaluation of the Nuclear Facility (NFAC) Source Model for the Hazard Prediction and Assessment Capability (HPAC) Code*. AFIT/GNE/ENP/00M-01. Faculty Advisor: Maj Vincent Jodoin, DSN: 785-3636, ext 4506. Sponsor: DTRA/CP.

Kucko, Jay F. *Estimating Isotopic Composition of Unconventional Reactor Spent Fuel*. AFIT/GNE/ENP/00M-02. Faculty Advisor: Maj Vincent Jodoin, DSN: 785-3636, ext 4506. Sponsor: AFIT.

Wozniak, Jon A. *Potential Fallout Effects from START Level Arsenals*. AFIT/GNE/ENP/00M-03. Faculty Advisor: Maj Vincent Jodoin, DSN: 785-3636, ext 4506. Sponsor: USSTRATCOM.

3.2.16 OPERATIONAL ANALYSIS

Browne, Kenneth S. *Using RSM, DOE, and Linear Regression to Develop a Metamodel to Predict Cargo Delivery of a Time Phase Force Deployment Document*. AFIT/GOA/ENS/00M-01. Faculty Advisor: Maj Paul Murdock. Sponsor: HQ AMC/XPY.

Delvecchio, Jeffrey R. *An Incentive Model for International Telecommunications*. AFIT/GOA/ENS/00M-02. Faculty Advisor: Dr. Yupo Chan. Sponsor: National Security Agency.

Gallan, Roger D. *Analysis of UH-60 Blackhawk Safety Controls Using Value Focused Thinking and Monte Carlo Simulation*. AFIT/GOA/ENS/00M-3. Faculty Advisor: LTC Jack M. Kloeber, Jr. Sponsor: US Army Safety Center.

Jenkins, Bruce C. *An Object-Oriented Approach to the Modeling and Visualization of Breast Cancer Tumors*. AFIT/GOA/ENS/00M-04. Faculty Advisor: Dr. Kenneth W. Bauer, Jr., DSN: 785-6565, ext 4328. Sponsor: AFRL/HEPA.

Kinney, Gary W. *A Hybrid Jump Search And Tabu Search Metaheuristic For The Unmanned Aerial Vehicle (UAV) Routing Problem*. AFIT/GOA/ENS/00M-5. Faculty Advisor: Lt Col Raymond R. Hill, DSN: 785-6565, ext 4327. Sponsor: UAV Battlelab.

Pugh, David M. *A Validation Assessment of the STORM Air-to-Air Prototype Algorithm*. AFIT/GOA/ENS/00M-06. Faculty Advisor: Lt Col Gregory A. McIntyre. Sponsor: Air Force Studies & Analyses Agency.

Varner, Michael W. *Simulation Evaluation of the Combat Value of a Standoff Precision Airdrop Capability*. AFIT/GOA/ENS/00M-7. Faculty Advisor: Lt Col Gregory A. McIntyre. Sponsor: AMWC/WCBC.

3.2.17 OPERATIONS RESEARCH

Ari, Mehmet M. *Determining The Aircraft Requirement For Turkish Air Mobility System*. AFIT/GOR/ENS/00M-01. Faculty Advisor: Dr. James T. Moore, DSN: 785-6565, ext 4337. Sponsor: Egitim Daire Baskanligi.

Ballew, Brian P. *The Distributor's Three-Dimensional Pallet-Packing Problem: A Mathematical Formulation and Heuristic Solution Approach*. AFIT/GOR/ENS/00M-02. Faculty Advisor: Dr. James T. Moore, DSN: 785-6565, ext 4337. Sponsor: DAGSI.

Basdemir, Melih M. *Locating Search and Rescue Stations in the Aegean and Western Mediterranean Regions of Turkey*. AFIT/GOR/ENS/00M-03. Faculty Advisor: Dr. James T. Moore, DSN: 785-6565, ext 4337. Sponsor: Hrk. Bsk.ligi.Arama Kurtarma Sube Mudurlugu.

Bennett, Barry D. *Robust Multi-Scenario Optimization of an Air Expeditionary Force Force Structure Applying Genetic Algorithms to the Combat Forces Assessment Model*. AFIT/GOR/ENS/00M-04. Faculty Advisor: Lt Col Raymond R. Hill, DSN: 785-6565, ext 4327. Sponsor: DAGSI.

Bullock, Richard K. *Hierarchical Interactive Theater Model (HITM): An Investigation Into The Relationship Between Strategic Effects And OODA Loops*. AFIT/GOR/ENS/00M-05. Faculty Advisor: Lt Col Greg McIntyre and Lt Col Raymond R. Hill, DSN: 785-6565, ext 4327. Sponsor: HQ USAF/XOC.

Calhoun, Kevin M. *A Tabu Search for Scheduling and Re-scheduling Combat Aircraft*. AFIT/ENS/GOR/00M-06. Faculty Advisor: Dr. Richard F. Deckro, DSN: 785-6565 EXT 4325. Sponsor: AFRL/AFOSR/NI.

Capehart, Shay R. *A Tabu Search Metaheuristic for the Air Refueling Tanker Assignment Problem*. AFIT/GOR/ENS/00M-07. Faculty Advisor: Dr. James T. Moore, DSN: 785-6565 EXT 4337. Sponsor: HQ AMC/XPY.

Cullenbine, Christopher A. *A Tabu Search Approach to the Weapons Assignment Model*. AFIT-GOR-ENS-00M-08. Faculty Advisor: Lt. Col Mark A. Gallagher, DSN: 785-6565, ext 4335. Sponsor: AFRL/AFOSR/NM and USSTRATCOM/J532.

East, Julia A. *Feature Selection for Predicting Pilot Mental Workload*. AFIT/GOR/ENS/00M-09. Faculty Advisor: Dr. Kenneth W. Bauer, Jr., DSN: 785-6565, ext 4328. Sponsor: AFRL/HECP.

Emslie, Paul D. *Multi-Objective Evaluation Of Target Sets In A Logistics Network*. AFIT/GOR/ENS/00M-10. Faculty Advisor: LTC Jack M. Kloeber, Jr., DSN: 785-6565, ext 4336. Sponsor: AFIT.

Eren, Bahtiyar *A Combined Inventory and Delivery Model for Repairable Items*. AFIT/GOR/ENS/00M-11. Faculty Advisor: Dr. Yupo Chan. Sponsor: AFMC SAO/XPS.

Ferguson, Marcus G. *Global Positioning System (GPS) Error Source Prediction*. AFIT/GOR/ENS/00M-12. Faculty Advisor: Maj Jeffrey W. Lanning, DSN: 785-3636, ext 4324. Sponsor: HQ SWC/AE.

Festejo, Reginald P. *An Analytical Comparison of the Reduced Footprint of the Modular Aircraft Support System (MASS) vs. Current Aerospace Ground Equipment (AGE)*. AFIT/GOR/ENS/00M-13. Faculty Advisor: Lt Col Raymond R. Hill, DSN: 785-6565, ext 4327. Sponsor: DAGSI.

Hall, Shane N. *A Group Theoretic Tabu Search Approach to the Traveling Salesman Problem*. AFIT/GOR/ENS/00M-14. Faculty Advisor: Dr. James T. Moore, DSN: 785-6565, ext 4337. Sponsor: HQ AMC/XPY.

Hamill, Jonathan T. *Modelling Information Assurance: A Value Focused Thinking Approach*. AFIT/GOR/ENS/00M-15. Faculty Advisor: Dr. Richard F. Deckro, DSN: 785-6565, ext 4325. Sponsor: DARPA/ISO/IASET and OSD/OT&E.

Harder, Robert W. *Multi-Objective Evaluation Of Target Sets In A Logistics Network*. AFIT/GOR/ENS/00M-16. Faculty Advisor: Lt Col Raymond R. Hill, DSN: 785-6565, ext 4327. Sponsor: UAV Battlelab.

Johnson, George W. *Toward Validating Vertical Aggregation In Object Oriented Simulation*. AFIT/GOR/ENS/00M-17. Faculty Advisor: Maj Paul Murdock. Sponsor: HQ USAF/XOC.

Longhorn, David C. *Using Simulation To Model An Army Recruiting Station With Seasonality Effects*. AFIT/GOR/ENS/00M-18. Faculty Advisor: Lt Col J. O. Miller, DSN: 785-255-6565, ext 4326. Sponsor: HQ USAREC.

Rebulanan, Rene C. *Simulation of the Joint Strike Fighter's (JSF) Autonomic Logistics System (ALS) Using Java Programming Language*. AFIT/GOR/ENS/00M-19. Faculty Advisor: Lt Col J. O. Miller, DSN: 785-255-6565, ext 4326. Sponsor: DAGSI.

Snodgrass, Anthony W. *Leontief Metamodeling For Military Strategic Effects*. AFIT/GOR/ENS/00M-20. Faculty Advisor: Lt Col Mark Gallagher, DSN: 785-6565, ext 4335. Sponsor: USAF/XOCA.

Zeisler, Nicholas J. *A Greedy Multiple-Knapsack Heuristic for Solving Air Mobility Command's Intratheater Airlift Problem*. AFIT/GOR/ENS/00M-21. Faculty Advisor: Dr. James T. Moore, DSN: 785-6565, ext 4337. Sponsor: HQ AMC/XPY.

3.2.18 SPACE OPERATIONS

Davis, Jeffrey S. *Navigation of Satellite Clusters*. AFIT/GSO/ENY/00M-01. Faculty Advisor: Dr. William Wiesel, DSN: 785-3636, ext 4312. Sponsor: AFRL/VAAD.

Holz, David A. *Constellation Design of Spaced Based-Bistatic Synthetic Aperture Radars*. AFIT/GSO/ENY/00M-03. Faculty Advisor: Prof. W. E. Wiesel, DSN: 785-3636, ext 4312. Sponsor: AFIT.

Matuszak, Alan M. *Space Range Scheduling and the Lean Aerospace Initiative (LAI)*. AFIT/GSO/ENY/00M-02. Faculty Advisor: Dr. Milton E. Franke, DSN: 785-3636, ext 4720. Sponsor: AFRL/MLMA.

Orson, J. A. *Collection of Detonation Signatures and Characterization of Spectral Features*. AFIT/GSO/ENP/00M-01. Faculty Advisor: Dr. Glen Perram, DSN: 785-3636, ext 4504. Sponsor: NAIC/DXDI.

3.2.19 SYSTEMS ENGINEERING

Fidanci, Mehmet, Jeffrey R. Miller, and Douglas J. Strauss, *Integrating Automated Multi-disciplinary Optimization in Preliminary Design of Non-Traditional Aircraft*. AFIT/GSE/ENY/00M-01. Faculty Advisor: Lt. Col Ernest P. Smith, DSN: 785-6565, ext 4318. Sponsor: AFRL/VASD.

Wollam, Jon D. *Reverse Engineering of Foreign Missiles via Genetic Algorithm*. AFIT/GSE/ENY/99D-01. Faculty Advisor: Lt Col Stuart C. Kramer, DSN: 785-3636, ext 4318. Sponsor: NAIC/TANW.

3.3 SPONSORS OF MASTERS THESES

NOTE: () indicates page number

* Multiple Sponsors

3.3.1 AIR FORCE (26)

3.3.2 AIR COMBAT COMMAND (26)

AIR FORCE INFORMATION WARFARE CENTER
COMMAND AND CONTROL BATTLELAB
UAV BATTLELAB

3.3.3 AIR EDUCATION AND TRAINING COMMAND (26)

AIR FORCE INSTITUTE OF TECHNOLOGY

3.3.4 AIR FORCE MATERIEL COMMAND (27)

AERONAUTICAL SYSTEMS CENTER
AIR FORCE RESEARCH LABORATORY
SPACE & MISSILE SYSTEMS CENTER
AIR FORCE FLIGHT TEST CENTER
75th OPERATIONS SUPPORT SQUADRON
746th TEST SQUADRON

3.3.5 AIR FORCE SPACE COMMAND (33)

SPACE WARFARE CENTER

3.3.6 AIR MOBILITY COMMAND (33)

AIR MOBILITY WARFARE CENTER

3.3.7 AIR NATIONAL GUARD (34)

3.3.8 USAF FIELD OPERATING AGENCIES (34)

AIR FORCE CIVIL ENGINEER SUPPORT AGENCY
AIR FORCE STUDIES ANALYSES AGENCY
AIR FORCE TECHNICAL APPLICATIONS CENTER
AIR FORCE WEATHER AGENCY
45TH WEATHER SQUADRON

3.3.9 USAF DIRECT REPORTING UNITS (35)

AIR FORCE COMMUNICATION AGENCY

3.3.10 ARMY (36)

US ARMY RECRUITING COMMAND
US ARMY SAFETY CENTER

3.3.11 DEPARTMENT OF DEFENSE (36)

DEFENSE ADVANCED RESEARCH PROJECTS AGENCY
DEFENSE INTELLIGENCE AGENCY
DEFENSE THREAT REDUCTION AGENCY
OFFICE OF SECRETARY OF DEFENSE
USSTRATCOM

3.3.12 NATIONAL SECURITY AGENCY (37)

3.3.13 DAYTON AREA GRADUATE STUDIES INSTITUTE (37)

3.3.14 EGYPTIAN AIR FORCE (38)

3.3.1 AIR FORCE

Bullock, Richard K. *Hierarchical Interactive Theater Model (HITM): An Investigation Into The Relationship Between Strategic Effects And OODA Loops*. AFIT/GOR/ENS/00M-05. Faculty Advisor: Lt Col Greg McIntyre and Lt Col Raymond R. Hill, DSN: 785-6565, ext 4327. Sponsor: HQ USAF/XOC.

Johnson, George W. *Toward Validating Vertical Aggregation In Object Oriented Simulation*. AFIT/GOR/ENS/00M-17. Faculty Advisor: Maj Paul Murdock. Sponsor: HQ USAF/XOC.

Kennedy, James F. *The Influence of Outsourcing on Job Satisfaction and Turnover Intentions of Air Force Civil Engineer Company Grade Officers*. AFIT/GEE/ENV/00m-10. Faculty Advisor: Maj Mark A. Ward, DSN: 785-3636, ext 4742. Sponsor: HQ USAF/ILEI.

Little, Rex W. *An Analysis of Training Adequacy and Additional Training Requirements as Perceived by Communications and Information Officers*. AFIT/GIR/LAS/99D-7. Faculty Advisor: Maj David P. Biros, DSN: 785-3636, ext 4826. Sponsor: HQ AF/SCXP.

Snodgrass, Anthony W. *Leontief Metamodeling For Military Strategic Effects*. AFIT/GOR/ENS/00M-20. Faculty Advisor: Lt Col Mark Gallagher, DSN: 785-6565, ext 4335. Sponsor: USAF/XOCA.

3.3.2 AIR COMBAT COMMAND

AIR FORCE INFORMATION WARFARE CENTER

Burke, David A. *Towards a Game Theory Model of Information Warfare*. AFIT/GSS/LAL/99D-1. Faculty Advisor: Maj David P. Biros, DSN: 785-3636, ext 4826. Sponsor: HQ AFIWC/EA.

Thorley, Eric J. *A Successful Information Warfare Defense for an Air Force Major Command*. AFIT/GIS/LAL/99D-1. Faculty Advisor: Maj David P. Biros, DSN: 785-3636, ext 4826. Sponsor: HQ AFIWC/EA.

COMMAND AND CONTROL BATTLELAB

Berridge, Walter T. *Extracting Mission Semantics from Unmanned Aerial Vehicle Telemetry and Flight Plans*. AFIT/GCS/ENG/00M-01. Faculty Advisor: Maj Michael Talbert, DSN: 785-6565, ext 4280. Sponsor: Command and Control Battlelab.

UAV BATTLELAB

Harder, Robert W. *Multi-Objective Evaluation Of Target Sets In A Logistics Network*. AFIT/GOR/ENS/00M-16. Faculty Advisor: Lt Col Raymond R. Hill, DSN: 785-6565, ext 4327. Sponsor: UAV Battlelab.

Kinney, Gary W. *A Hybrid Jump Search And Tabu Search Metaheuristic For The Unmanned Aerial Vehicle (UAV) Routing Problem*. AFIT/GOA/ENS/00M-5. Faculty Advisor: Lt Col Raymond R. Hill, DSN: 785-6565, ext 4327. Sponsor: UAV Battlelab.

3.3.3 AIR EDUCATION AND TRAINING COMMAND

Harris, Rodney C. *Analysis of the Air Force ISO 14001 Pilot Study Conducted by DoD*. AFIT/GEE/ENV/00M-07. Faculty Advisor: Maj Michael T. Reh, DSN: 785-3636, ext 4711. Sponsor: HQ AETC.

AIR FORCE INSTITUTE OF TECHNOLOGY

Arslan, Musa Serdar *A Methodology for Integrating Tools in a Web-Based Environment*. AFIT/GCE/ENG/00J-01. Faculty Advisor: Professor Thomas C. Hartrum, DSN: 785-3636, ext 4581. Sponsor: AFIT/RRD.

- Cseke, Peter. *Modeling Piezoceramic Twist Actuation in Single-Cell Anisotropic Torque Box of Low-Observable UAV Wing*. AFIT/ENY/GAE/00M-4. Faculty Advisor: Maj Gregory S. Agnes, DSN: 785-6565, ext 4317. Sponsor: AFIT
- Duffield, Colin J. *An Experimental Investigation on Periodic Forced Vibrations of a Bladed Disk*. AFIT/GAE/ENY/00M-5. Faculty Advisor: Maj Gregory S. Agnes, DSN: 785-6565, ext 4317. Sponsor: AFIT.
- Eck, Craig P. *Effects of Moisture Content in Solid Waste Landfills*. AFIT/GEE/ENV/00M-03. Faculty Advisor: Dr. M. L. Shelly, DSN: 785-2998. Sponsor: AFIT.
- Emslie, Paul D. *Multi-Objective Evaluation Of Target Sets In A Logistics Network*. AFIT/GOR/ENS/00M-10. Faculty Advisor: LTC Jack M. Kloeber, Jr., DSN: 785-6565, ext 4336. Sponsor: AFIT.
- Fulton, Joseph M. *Attitude Control and Multimedia Representation of Air Force Institute of Technology's (AFIT'S) Simulation Satellite (SIMSAT)*. AFIT/GA/ENY/00M-01. Faculty Advisor: Maj Gregory S. Agnes, DSN: 785-6565, ext 4317. Sponsor: AFIT/ENY.
- Gaeta, Douglas E. *Damage Identification in a Real Structure Using Resonant and Anti-Resonant Frequencies*. AFIT/GA/ENY/00M-02. Faculty Advisor: Lt. Col Jeffrey Turcotte, DSN: 785: 3636, ext 4597. Sponsor: AFIT/ENY.
- Henry, Elwood. *Cost Analysis Between SABER and Design Bid Build Construction*. AFIT/GEE/ENV/00M-08. Faculty Advisor: Maj Heidi S. Brothers, DSN: 785-3636 , ext 4800. Sponsor: AFIT/CESS.
- Holz, David A. *Constellation Design of Spaced Based-Bistatic Synthetic Aperture Radars*. AFIT/GSO/ENY/00M-03. Faculty Advisor: Prof. W. E. Wiesel, DSN: 785-3636, ext 4312. Sponsor: AFIT.
- Kitchen, Robert C. *Why Didn't You Tell Me?: Toward Building a Model of Why Information is not Shared Well in Organizations*. AFIT/GIR/LAS/99D-6. Faculty Advisor: Dr Alan R. Heminger, DSN: 785-3636, ext 4797. Sponsor: AFIT.
- Kucko, Jay F. *Estimating Isotopic Composition of Unconventional Reactor Spent Fuel*. AFIT/GNE/ENP/00M-02. Faculty Advisor: Maj Vincent Jodoin, DSN: 785-3636, ext 4506. Sponsor: AFIT.
- *Leighton, Travis K. *Empirical Evaluation of the Civil Engineer Career Pyramid and Career Guidance*. AFIT/GEE/ENV/00M-11. Faculty Advisor: Maj Heidi Brothers, DSN: 785-3636, ext 4800 and Maj Mark Ward, DSN: 785-3636, ext 4742. Sponsor: AFMC/CE, AFMC/XP and AFIT/CE.
- McFarland, Charles B. *Investigation Into The Adaptation Of A Steam Injector For Use On A Liquid Rocket Engine*. AFIT/GA/ENY/00M-04. Faculty Advisor: J. K. Little, DSN: 785-3069. Sponsor: AFIT/ENY.
- Singer, Kristopher A. *An Assessment of Mentoring Functions and Barriers to Mentoring*. AFIT/GIR/LAS/99D-9. Faculty Advisor: Maj Paul W. Thurston, DSN: 785-6565, ext 4315. Sponsor: AFIT.
- Stumpe, Brian M. *Organizational and Individual Effects on the Reporting of Wrongdoing in the Workplace*. AFIT/GEE/ENV/00M-15. Faculty Advisor: Maj Mark A. Ward, DSN: 785-2998. Sponsor: AFIT.

3.3.4 AIR FORCE MATERIEL COMMAND

- Eren, Bahtiyar *A Combined Inventory and Delivery Model for Repairable Items*. AFIT/GOR/ENS/00M-11. Faculty Advisor: Dr. Yupo Chan. Sponsor: AFMC SAO/XPS.
- *Leighton, Travis K. *Empirical Evaluation of the Civil Engineer Career Pyramid and Career Guidance*. AFIT/GEE/ENV/00M-11. Faculty Advisor: Maj Heidi Brothers, DSN: 785-3636, ext 4800 and Maj Mark Ward, DSN: 785-3636, ext 4742. Sponsor: AFMC/CE, AFMC/XP and AFIT/CE.

AERONAUTICAL SYSTEMS CENTER

Albritton, Patrick M. *Methodology for Evaluating the Impact of Aircraft Shelter Systems on Aircraft Operations at Forward Operating Locations*. AFIT/GEE/ENS/00M-01. Faculty Advisor: Maj W. Paul Murdock. Sponsor: ASC/YS.

Carlson, David W. *Factors Affecting Perceptions of Ethics within Organizations: A Case Study of Organizations within Aeronautical Systems Center (ASC)*. AFIT/GEE/ENV/00M-01. Faculty Advisor: Maj Michael T. Rehg, DSN:785-3636, ext 4711. Sponsor: ASC/HRMB.

Leonard, Christopher J. *Toxicity of Tolyltriazole to Bacillus Microorganisms*. AFIT/GEE/ENV/00M/12. Faculty Advisor: Prof Charles A. Bleckmann, DSN: 785-3636 Ext 4721. Sponsor: ASC/EME.

Mitchell, Heather L. *Toxicity Of Tolyltriazole To Gram-Positive Coccus Microorganisms*. AFIT/GEE/ENV/00M-13. Faculty Advisor: Prof Charles A. Bleckmann, DSN: 785-3636, ext 4721. Sponsor: ASC/EME.

*Pendleton, Ryan R. *Use of Unusual Aircraft Orientations to Generate Low Observable Routes*. AFIT/GAE/ENY/00M-09. Faculty Advisor: Dr. C.H. Spenny, DSN: 785-6565, ext 4320. Sponsors: ASC/RAV and AFRL/MNGN.

Pritchard, David E. *Dynamic Route Replanning and Retasking of Unmanned Aerial Reconnaissance Vehicles*. AFIT/GAE/ENY/00M-10. Faculty Advisor: Dr. C.H. Spenny, DSN: 785-6565, ext 4320. Sponsor: ASC/RAV.

Trigg, Jr. Jimmie L. *A Study of Morning Radiation Fog Formation*. AFIT/GM/ENP/00M-14. Faculty Advisor: Maj Gary Huffines, DSN: 785-3636, ext 4511. Sponsor: 88th Weather Squadron.

AIR FORCE RESEARCH LABORATORY/AIR FORCE OFFICE OF SCIENTIFIC RESEARCH

Boatwright, Joshua T. *Finite Element Analysis of a Composite Cylindrical Shell with a Cutout Under a Fatigue Load*. AFIT/GAE/ENY/00M-03. Faculty Advisor: Dr. Anthony N. Palazotto, DSN: 785-3636, ext 4599. Sponsor: AFRL/AFOSR/NA.

Calhoun, Kevin M. *A Tabu Search for Scheduling and Re-scheduling Combat Aircraft*. AFIT/ENS/GOR/00M-06. Faculty Advisor: Dr. Richard F. Deckro, DSN: 785-6565, ext 4325. Sponsor: AFRL/AFOSR/NL.

Choi, B.J. *Investigation of Laser Beam Combining and Cleanup via Seeded Stimulated Brillouin Scattering in Multimode Optical Fibers*. AFIT/GEO/ENP/00M-01. Faculty Advisor: Dr. Won Roh, DSN: 785-3636, ext 4509. Sponsor: AFRL/AFOSR.

*Cullenbine, Christopher A. *A Tabu Search Approach to the Weapons Assignment Model*. AFIT-GOR-ENS-00M-08. Faculty Advisor: Lt. Col Mark A. Gallagher, DSN: 785-6565, ext 4335. Sponsor: AFRL/AFOSR/NM and USSTRATCOM/J532.

Damp, Kevin T. *An Analysis of the Effectiveness of a Constructive Induction-Based Virus Detection Prototype*. AFIT/GCS/ENG/00J-01. Faculty Advisor: Dr. Gregg H. Gunsch, DSN: 785-6565, ext 4281. Sponsor: AFRL/AFOSR/NM.

Hack, Charles Eric, *Evaporation of Jet Fuels*. AFIT/GES/ENC/99D-01. Faculty Advisor: Prof Dennis W. Quinn, DSN: 785-3636, ext 4522. Sponsor: AFRL/AFOSR/NL

Harmer, Paul K. *A Distributed Agent Architecture for a Computer Virus Immune System*. AFIT/GCE/ENG/00M-02. Faculty Advisor: Dr. Gary B. Lamont, DSN: 785-3636, ext 4718. Sponsor: AFRL/AFOSR/NM.

Hopper, David R. *Measurements of the Effects of Tunnel Wall Proximity on the Velocity Field Upstream of a Rod With Vortex Shedding in Low-Speed Flow*. AFIT/GAE/ENY/00M-07. Faculty Advisor: Dr. Paul I. King, DSN: 785-3636, ext 4628. Sponsor: AFRL/AFOSR/NA.

Lacey, Timothy H. *A Formal Methodology and Technique for Verifying Communication Protocols in a Multi-Agent Environment*. AFIT/GCS/ENG/00M-12. Faculty Advisor: Maj Scott A. DeLoach, DSN: 785-3636, ext 4622. Sponsor: AFRL/AFOSR/NM.

Marsh, David W. *Formal Object State Model Transformations for Automated Agent System Synthesis*. AFIT/GCE/ENG/00M-03. Faculty Advisor: Dr. Thomas C. Hartrum, DSN: 785-3636, ext 4581. Sponsor: AFRL/AFOSR/NM.

Miller, Gerald B. *Mechanics of a Functionally-Graded Titanium Matrix Composite*. AFIT/GMS/ENY/00M-01. Faculty Advisor: Dr. Shanker Mall, DSN: 785-3636, ext 4587. Sponsor: AFRL/AFOSR/NA.

Raphael, Marc J. *Active Multispectral Bidirectional Reflectance Distribution Function Measurement System*. AFIT/GCS/ENG/00M-21. Faculty Advisor: Major Scott A. DeLoach, DSN: 785-3636, ext 4622. Sponsor: AFRL/AFOSR/NM.

Robinson, David J. *A Component Based Approach to Agent Specification*. AFIT/GCS/ENG/00M-22. Faculty Advisor: Major Scott A. DeLoach, DSN: 785-3636, ext 4622. Sponsor: AFRL/AFOSR/NM.

Wagner, John W. *Optical Metrology of Adaptive Membrane Mirrors*. AFIT/GA/ENY/00M-05. Faculty Advisor: Maj Gregory S. Agnes, DSN: 785-6565, ext 4317. Sponsor: AFRL/AFOSR.

Wood, Mark F. *Multiagent Systems Engineering: A Methodology for Analysis and Design of Multiagent Systems*. AFIT/GCS/ENG/00M-26. Faculty Advisor: Major Scott A. DeLoach, DSN: 785-3636, ext 4622. Sponsor: AFRL/AFOSR/NM.

AIR FORCE RESEARCH LABORATORY

Abell, Sean P. *Implementation of Speech Recognition Software for Text Processing: An Exploratory Analysis*. AFIT/GIR/LAS/99D-1. Faculty Advisor: Maj Michael G. Morris, DSN: 785-3636, ext 4578. Sponsor: AFRL.

Akers, Geoffrey A. *Low Band Direction Finding Using an Ensemble of Structurally Integrated Antennas*. AFIT/GE/ENG/00M-01. Faculty Advisor: Dr. Andrew J. Terzuoli, Jr., DSN: 785-3636, ext 4717. Sponsor: AFRL/SNRP.

Anderson, Gregg T., *A Numerical Simulation of a Carbon Black Suspension Cell via a Time-Reversed, Double Layer Compute Algorithm*. AFIT/GAM/ENC/99D-01. Faculty Advisor: Prof William P. Baker, DSN: 785-3636, ext 4517. Sponsor: AFRL/MLPJ.

Ashby, Michael R. *Tool-Based Integration and Code Generation of Object Models*. AFIT/GE/ENG/00M-02. Faculty Advisor: Dr. T. C. Hartrum, DSN: 785-3636, ext 4581. Sponsor: AFRL/SNZW.

Blake, Travis F. *Investigation Of Ge₂Te₂Sb₅ Chalcogenide Thin Film For Use As An Analog Memory*. AFIT/GE/ENG/00M-04. Faculty Advisor: Maj Charles P. Brothers, Jr., DSN: 785-3636, ext 4618. Sponsor: AFRL/VSSE.

Broadbuss, James T. *Stochastic Modeling-Based DGPS Estimation Algorithm*. AFIT/GE/ENG/00M-06. Faculty Advisor: Dr. Meir Pachter, DSN: 785-3636, ext 4593. Sponsor: AFRL/SNAR.

Buckwalter, Steven R. *Generating Executable Persistent Data/Retrieval Code from Object-Oriented Specifications*. AFIT/GCS/ENG/00M-02. Faculty Advisor: Maj Robert Graham, DSN: 785-3636, ext 4595. Sponsor: AFRL/IFTD.

Calidonna, M.J. *Extensible Markup Language as a Weather Tool.* AFIT/GM/ENP/00M-02. Faculty Advisor: Lt Col Cecilia Miner. Sponsor: AFRL/IFEB.

Cekic, Orhan *Development of a Real Time Guidance System for a Kinematic Test Vehicle.* AFIT/GE/ENG/00M-21. Faculty Advisor: Maj John Raquet, DSN: 785-3636, ext 4580. Sponsor: AFRL/SNAR.

Corbell, Phillip M. *Design and Validation of an Accurate GPS Signal and Receiver Truth Model for Comparing Advanced Receiver Processing Techniques.* AFIT/GE/ENG/00M-07. Faculty Advisor: Lt Col Mikel Miller, DSN: 785-6565, ext 4278. Sponsor: AFRL/SNAR.

Cornn, Gary L., Jr. *An Object-Oriented Repository-Based Software Synthesis System.* AFIT/GCS/ENG/00M-05. Faculty Advisor: Maj Robert Graham, DSN: 785-3636, ext 4595. Sponsor: AFRL/IFTD.

Crabtree, Peter N. *Multi-Conjugate Adaptive Optics for the Compensation of Amplitude and Phase Distortions.* AFIT/GEO/ENG/00M-01. Faculty Advisor: Dr. Steven C. Gustafson, DSN: 785-3636, ext 4598. Sponsor: AFRL/DES.

Daetz, Daniel D. *Development of a Biodynamic Interference Suppression Algorithm for a Helmet-Mounted Display Tracking Task in the Presence of Aircraft Buffet.* AFIT/GAE/ENY/00M-02. Faculty Advisor: Dr. Bradley S. Liebst, DSN: 785-3636, ext 4636. Sponsor: AFRL/HECV.

Davis, Jeffrey S. *Navigation of Satellite Clusters.* AFIT/GSO/ENY/00M-01. Faculty Advisor: Dr. William Wiesel, DSN: 785-3636, ext 4312. Sponsor: AFRL/VAAD.

Doser, Kelly B. *Quantifying the Protonospheric Effect on PRISM.* AFIT/GAP/ENP/00M-02. Faculty Advisor: Dr. William Bailey, DSN: 785-3636, ext 4501. Sponsor: AFRL/VSBP.

East, Julia A. *Feature Selection for Predicting Pilot Mental Workload.* AFIT/GOR/ENS/00M-09. Faculty Advisor: Dr. Kenneth W. Bauer, Jr., DSN: 785-6565, ext 4328. Sponsor: AFRL/HECP.

Feng, Peter P. *Modeling the Effect of Nonlinear and Rate-limited Sorption on the Natural Attenuation of Chlorinated Ethenes.* AFIT/GEE/ENV/00M-04. Faculty Advisor: Dr. Mark N. Goltz, DSN: 785-255-3636, ext 4638. Sponsor: AFRL/MLQ.

Ferland, Derek R. *In Situ Treatment of Chlorinated Ethene-Contaminated Groundwater Using Horizontal Flow Treatment Wells.* AFIT/GEE/ENV/00M-05. Faculty Advisor: Dr. Mark N. Goltz, DSN: 785-255-3636, ext 4638. Sponsor: AFRL/MLQ.

Fidanci, Mehmet, Miller, Jeffrey, and Strauss, Douglas *Integrating Automated Multi-disciplinary Optimization in Preliminary Design of Non-Traditional Aircraft.* AFIT/GSE/ENY/00M-01. Faculty Advisor: Lt. Col Ernest P. Smith, DSN: 785-6565, ext 4318. Sponsor: AFRL/VASD.

Fiorello, Alan P. *Power, Performance, and Perception (P^3): Integrating Usability Metrics and Technology Acceptance Determinants to Validate a New Model for Predicting System Usage.* AFIT/GIR/LAS/99D-3. Faculty Advisor: Maj Michael G. Morris, DSN: 785-3636, ext 4578. Sponsor: AFRL/HECA.

Formwalt, Byron P. *Realtime Color Stereovision Processing.* AFIT/GE/ENG/00M-08. Faculty Advisor: Lt Col Mikel Miller, DSN: 785-6565, ext 4278. Sponsor: AFRL/SNAT.

Fox, Joseph M. *Chromium Concentration Bias In The Particle Size Distribution Of Primer Overspray.* AFIT/GEE/ENV/00M-06. Faculty Advisor: Maj Peter T. LaPuma, DSN: 785-6565, ext 4319. Sponsor: AL/MLQ.

Gebhardt, Matthew J. *A Comparative Analysis of Cockpit Display Development Tools.* AFIT/GE/ENG/00M-10. Faculty Advisor: Lt Col Timothy Jacobs, DSN: 785-6565, ext 4279. Sponsor: AFRL/IFSC.

Glavic, F. J. *Tunable Mid-IR Optical Parametric Oscillator Using Periodically Poled Rubidium Titanyl Arsenate*. AFIT/GEO/ENP/00M-2. Faculty Advisor: Dr. Won Roh, DSN: 785-3636, ext 4509. Sponsor: AFRL/SNJT.

Goeringer, Michael L. *Three-Dimensional Data Visualization of Electronic Military Intelligence Using the Project Broadsword System*. AFIT/GCS-ENG-00M-08. Faculty Advisor: Lt Col Timothy Jacobs, DSN: 785-3636, ext 4279. Sponsor: AFRL/RRS IFED.

Hall, James K. *Three Dimensional Formation Flight Control*. AFIT/GAE/ENY/00M-06. Faculty Advisor: Dr. Meir Pachter, DSN: 785-3636, ext 4593. Sponsor: AFRL/VACA

Heberlie, Brian J., and Mary O. Tolbert *Impact of Actual Facilitator Alignment, Co-Location, and Video Intervention on the Efficacy of Distributed Group Support Systems*. AFIT/GIR/LAS/99D-4. Faculty Advisor: Maj Paul W. Thurston, DSN: 785-6565, ext 4315. Sponsor: AFRL/HESS.

*Hoefar, Colby D. *Modeling Chlorinated Ethene Removal in Constructed Wetlands: A System Dynamics Approach*. AFIT/GEE/ENV/00M-09. Faculty Advisor: Dr. Michael L. Shelley, DSN: 785-2998. Sponsor: AFRL/MLQ and DAGSI.

Jarosh, Julian R. *Active and Adaptive Control for Payload Launch Vibration Isolation*. AFIT/GA/ENY/00M-03. Faculty Advisor: Maj Gregory S. Agnes, DSN: 785-656, ext 4317. Sponsor: AFRL/VSDV.

Jenkins, Bruce C. *An Object-Oriented Approach to the Modeling and Visualization of Breast Cancer Tumors*. AFIT/GOA/ENS/00M-04. Faculty Advisor: Dr. Kenneth W. Bauer, Jr., DSN: 785-6565, ext 4328. Sponsor: AFRL/HEPA.

Jones, Keith W. *Finite Element Model Updating Using Antiresonant Frequencies*. AFIT/GAE/ENY/00M-08. Faculty Advisor: Lt Col Jeffrey Turcotte, DSN: 785-3636, ext 4597. Sponsor: AFRL/VSDV.

Matuszak, Alan M. *Space Range Scheduling and the Lean Aerospace Initiative (LAI)*. AFIT/GSO/ENY/00M-02. Faculty Advisor: Dr. Milton E. Franke, DSN: 785-3636, ext 4720. Sponsor: AFRL/MLMA.

McDonald, Jeffrey T. *Agent Based Framework for Collaborative Engineering Model Development*. AFIT/GCS/ENG/00M-16. Faculty Advisor: Major Michael L. Talbert, DSN: 785-6565, ext 4280. Sponsor: AFRL/SNZW.

McFall, 1Lt J. L. *Optical Investigation of Molecular Beam Epitaxy $Al_xGa_{1-x}N$ to Determine Material Quality*. AFIT/GMS/ENP/00M-01. Faculty Advisor: Dr. Robert Hengehold, DSN: 785-3636, ext 4502. Sponsor: AFRL/MLPA.

Morgan, Tiffany J. *Chromate Dissociation from Primer Paint in Simulated Lung Fluid*. AFIT/GEE/ENV/00M-14. Faculty Advisor: Maj Peter T. LaPuma, DSN: 785-6565, ext 4319. Sponsor: AL/MLQ.

Myers Jr., James W. *Spatially Resolved Temperature Determination in I_2 Gas Using Doppler-Limited Saturation Spectroscopy*. AFIT/GAP/ENP/00M-03. Faculty Advisor: Lt Col Glen Perram, DSN: 785-3636, ext 4504. Sponsor: AFRL/DEC.

Neslen, C. L. *Chemical Mechanical Polishing Optimization for 4H-SiC*. AFIT/GMS/ENP/00M-02. Faculty Advisor: Dr. Robert Hengehold, DSN: 785-3636, ext 4502. Sponsor: AFRL.

Okuyucu, Ahmet *Effects of Jamming on Radars*. AFIT/GE/ENG/00M-22. Faculty Advisor: Dr. Vittal Pyati, DSN: 785-3636, ext 4620. Sponsor: AFRL/SNZW.

Parsons, T. L. *Determining the Horizontal Distance Distribution of Cloud-to-Ground Lightning*. AFIT/GM/ENP/00M-09. Faculty Advisor: Maj Gary Huffines, DSN: 785-3636, ext 4511. Sponsor: AFRL/XP.

- *Pendleton, Ryan R. *Use of Unusual Aircraft Orientations to Generate Low Observable Routes*. AFIT/GAE/ENY/00M-09. Faculty Advisor: Dr. C.H. Spenny, DSN: 785-6565, ext 4320. Sponsors: ASC/RAV and AFRL/MNGN.
- Proctor, Mark J. *Active Multispectral Bidirectional Reflectance Distribution Function Measurement System*. AFIT/GEO/ENG/00M-02. Faculty Advisor: Major Eric P. Magee, DSN: 785-4604, ext 4023. Sponsor: AFRL/SNJ.
- Richards, Daniel R., Jr. *Non-Uniformly Spaced Array Elements*. AFIT/GE/ENG/00M-14. Faculty Advisor: Maj Peter Collins, DSN: 785-6565, ext 4304. Sponsor: AFRL/SNRP.
- Roberts, Marcus L. *Synchronization of a Transform Domain Communication System*. AFIT/GE/ENG/00M-15. Faculty Advisor: Dr. Michael A. Temple, DSN: 785-3636, ext 4703. Sponsor: AFRL/SNRW.
- Saul, Jon M. *Atmospheric Temperature Profiles By Ground-Based Infrared Spectrometer Measurements*. AFIT/GM/ENP/00M-11. Faculty Advisor: Lt Col Glen Perram, DSN: 785-3636, ext 4504. Sponsor: AFRL/VSBM.
- Saville, Michael A. *Investigation of Conformal High-Impedance Ground Planes*. AFIT/GE/ENG/00M-17. Faculty Advisor: Maj Peter Collins, DSN: 785-6565, ext 4304. Sponsor: AFRL/SNRP.
- Schwabacher, Gregory J. *Computational Fluid Dynamics Testing For Drag Reduction Of An Aircraft Laser Turret*. AFIT/GAE/ENY/00M-11. Faculty Advisor: Maj Jeffrey Bons, DSN: 785-255-3636, ext 4643. Sponsor: AFRL/SN.
- Sezer, Ergin *Mission Route Planning with Multiple Aircraft & Targets Using Parallel A* Algorithm*. AFIT/GCE/ENG/00M-04. Faculty Advisor: Prof Gary B. Lamont, DSN: 785-3450, ext 4718. Sponsor: AFRL/SNAT.
- Steel, Steven G. *Monotonic and Fatigue Loading of an Oxide/Oxide Ceramic Matrix Composite*. AFIT/GMS/ENY/00M-02. Faculty Advisor: Dr. Shanker Mall, DSN: 785-3636, ext 4587. Sponsor: AFRL/MLLN.
- Stringer, Jeremy P. *The Air Force Institute of Technology (AFIT) Micro Electro-Mechanical Systems (MEMS) Interferometric Gyroscope (MiG)*. AFIT/GE/ENG/00M-18. Faculty Advisor: Lt Col Mikel Miller, DSN: 785-6565, ext 4278. Sponsor: AFRL/SN.
- Suhajda, Sierra H. *A Pharmacokinetic Study Of The Effects Of Stress On Chemical Exposure*. AFIT/GEE/ENV/00M-16. Faculty Advisor: Dr. Michael L. Shelley, DSN: 785-3636, ext 4594. Sponsor: AFRL/HEST.
- Thomson, Steven A. *Validation and Verification of Formal Specifications in Object-Oriented Software Engineering*. AFIT/GE/ENG/00S-01. Faculty Advisor: Maj Robert P. Graham, Jr., DSN: 785-3636, ext 4595. Sponsor: AFRL/IFTD.
- Thornburg, Jefery T. *Simulations of Flowing Supercritical n-Decane*. AFIT/GAE/ENY/00M-12. Faculty Advisor: Lt Col Jeffery K. Little, (334) 953-7848. Sponsor: AFRL/PRSF.
- Ward, Jason T. *Enhancing a Virtual Distributed Library User Interface Via Server-Side User Profile Caching*. AFIT/GCS/ENG/00M-23. Faculty Advisor: Major Michael L. Talbert, DSN: 785-6565, ext 4280. Sponsor: AFRL/SNAS.
- Williams, Darin L. *Explicitly Modeling Hierarchically Heterogeneous Software Architectures in an Object-Oriented Formal Transformation System*. AFIT/GCS/ENG/00M-25. Faculty Advisor: Major Robert P. Graham, DSN: 785-3636, ext 4595. Sponsor: AFRL/IFTD.

Williamson, Chaz M. *Use of Genetic Algorithms to Characterize Groundwater Contamination Source Areas*. AFIT/GEE/ENV/00M-17. Faculty Advisor: Dr. Mark N. Goltz, DSN: 785-3636, ext 4638. Sponsor: AFRL/MLQ.

Zumwalt, Michel P. *Robust High Range Resolution Radar for Target Classification*. AFIT/GE/ENG/00M-19. Faculty Advisor: Dr. Steven C. Gustafson, DSN: 785-3636, ext 4598. Sponsor: AFRL/SN.

SPACE AND MISSILE SYSTEMS CENTER

Scott, M. D. *Validation of the Ionospheric Forecast Model (IFM) Version 3*. AFIT/GAP/ENP/00M-04. Faculty Advisor: Dr. David Weeks, DSN: 785-3636, ext 4561. Sponsor: SMC Det 11.

AIR FORCE FLIGHT TEST CENTER

Thurling, Andrew J. *Improving UAV Handling Qualities Using Time Delay Compensation*. AFIT/GAE/ENY/00M-01. Faculty Advisor: Prof Bradley Liebster, DSN: 785-3069. Sponsor: USAF Test Pilot School.

75TH OPERATIONS SUPPORT SQUADRON

Boll, Elizabeth A. *An Analysis in Cloud-To-Ground Lightning Over Land Versus Water*. AFIT/GM/ENP/00M-01. Faculty Advisor: Maj Gary Huffines, DSN: 785-3636, ext 4511. Sponsor: 75th OSS/OSW.

746TH TEST SQUADRON

Bracy, Brian L. *Evaluation of a Method for Kinematic GPS Carrier-Phase Ambiguity Resolution Using a Network of Reference Receivers*. AFIT/GE/ENG/00M-5. Faculty Advisor: Maj John F. Raquet, DSN: 785-3636, ext 4580. Sponsor: 746th Test Squadron.

Mellon, George T., II. *Simulation and Analysis of a Time Difference of Arrival GPS Jammer Location System*. AFIT/GE/ENG/00M-11. Faculty Advisor: Maj John Raquet, DSN: 785-3636, ext 4580. Sponsor: 746th Test Squadron.

2.3.5 AIR FORCE SPACE COMMAND

SPACE WARFARE CENTER

Ferguson, Marcus G. *Global Positioning System (GPS) Error Source Prediction*. AFIT/GOR/ENS/00M-12. Faculty Advisor: Maj Jeffrey W. Lanning, DSN: 785-3636, ext 4324. Sponsor: HQ SWC/AE.

3.3.6 AIR MOBILITY COMMAND

Browne, Kenneth S. *Using RSM, DOE, and Linear Regression to Develop a Metamodel to Predict Cargo Delivery of a Time Phase Force Deployment Document*. AFIT/GOA/ENS/00M-01. Faculty Advisor: Maj Paul Murdock. Sponsor: HQ AMC/XPY.

Capehart, Shay R. *A Tabu Search Metaheuristic for the Air Refueling Tanker Assignment Problem*. AFIT/GOR/ENS/00M-07. Faculty Advisor: Dr. James T. Moore, DSN: 785-6565, ext 4337. Sponsor: HQ AMC/XPY.

Hall, Shane N. *A Group Theoretic Tabu Search Approach to the Traveling Salesman Problem*. AFIT/GOR/ENS/00M-14. Faculty Advisor: Dr. James T. Moore, DSN: 785-6565, ext 4337. Sponsor: HQ AMC/XPY.

Kurkowski, Stuart H. *An Information Visualization Solution for the Analysis of the AFM Simulation Output Data*. AFIT/GCS/ENG/00M-11. Faculty Advisor: Lt. Col Timothy Jacobs, DSN: 785-3636, ext 4279. Sponsor: HQ AMC/XPY.

Zeisler, Nicholas J. *A Greedy Multiple-Knapsack Heuristic for Solving Air Mobility Command's Intratheater Airlift Problem*. AFIT/GOR/ENS/00M-21. Faculty Advisor: Dr. James T. Moore, DSN: 785-6565, ext 4337. Sponsor: HQ AMC/XPY.

AIR MOBILITY WARFARE CENTER

Varner, Michael W. *Simulation Evaluation of the Combat Value of a Standoff Precision Airdrop Capability*. AFIT/GOA/ENS/00M-7. Faculty Advisor: Lt Col Gregory A. McIntyre. Sponsor: AMWC/WCBC.

3.3.7 AIR NATIONAL GUARD

Kern, Sean G. *A Human-Centered Approach for Designing Decision Support Systems*. AFIT/GCS/ENG/00M-10. Faculty Advisor: Dr. Henry B. Potoczny, DSN: 785-6565, ext 4282. Sponsor: 2SWS/DOUE.

3.3.8 USAF FIELD OPERATING AGENCIES

AIR FORCE CIVIL ENGINEER SUPPORT AGENCY

Davis, Cynthia M. *Linking Engineer Career Orientation and Human Resource Management Practices: Does Fit Affect Retention?*. AFIT/GEE/ENV/00M-02. Faculty Advisor: Maj Michael T. Rehg, DSN: 785-3636, ext 4711. Sponsor: HQ AFCEA/CEO.

AIR FORCE STUDIES & ANALYSES AGENCY

Pugh, David M. *A Validation Assessment of the STORM Air-to-Air Prototype Algorithm*. AFIT/GOA/ENS/00M-06. Faculty Advisor: Lt Col Gregory A. McIntyre. Sponsor: Air Force Studies & Analyses Agency.

AIR FORCE TECHNICAL APPLICATIONS CENTER

Coleman, L. K. *Use of Climatology to Predict Maximum Wind Speeds at the Kennedy Space Center and Cape Canaveral Air Station*. AFIT/GM/ENP/00M-04. Faculty Advisor: Lt Col Michael Walters, DSN: 785-3636, ext 4681. Sponsor: AFTAC.

Shoemaker, L. C. *Mixed Layer Height Estimates – A Statistical Analysis of Algorithm Performance*. AFIT/GM/ENP/00M-12. Faculty Advisor: Lt Col Michael Walters, DSN: 785-3636, ext 4681. Sponsor: AFTAC.

AIR FORCE WEATHER AGENCY

Acebal, Ariel O. *Testing of the New USGS K Index Algorithm at Bear Lake Observatory*. AFIT/GAP/ENP/00M-01. Faculty Advisor: Maj Devin Della-Rose, DSN: 785-3636, ext 4514. Sponsor: AFWA.

Douglas, James S. *Distributed Object System Engineering for Terminal Aerodrome Forecast Validation and Metrics Processing*. AFIT/GCS/ENG/00M-007. Faculty Advisor: Dr. Gary B. Lamont, DSN: 785-3636, ext 4718. Sponsor: HQ AFWA/XP.

Joga, Meriellen C. *Data Warehouse Techniques to Support Global On-Demand Weather Forecast Metrics*. AFIT/GCS/ENG/00M-09. Faculty Advisor: Dr. Henry B. Potoczny, DSN: 785-6565, ext 4282. Sponsor: HQ AFWA/XP.

Leon, Darryl N. *An Intelligent User Interface to Support Air Force Weather Product Generation and Automated Metrics*. AFIT/GCS/ENG/00M-15. Faculty Advisor: Major Michael L. Talbert, DSN: 785-3636, ext 4280. Sponsor: HQ AFWA/XP.

Stenger, R. A. *Sensitivity Studies on a Limited Area Mesoscale Model: An Examination of Lateral Boundary Placement, Grid Resolution and Nesting Type*. AFIT/GM/ENP/00M-13. Faculty Advisor: Lt Col Michael Walters, DSN: 785-3636, ext 4681. Sponsor: HQ AFWA.

45TH WEATHER SQUADRON

Cloys, K. P. *A Neural Network Solution to Predicting Wind Speed at Cape Canaveral's Atlas Launch Pad*. AFIT/GM/EMP/00M-03. Faculty Advisor: Lt Col Michael Walters, DSN: 785-3636, ext 4681. Sponsor: 45 WS/SYR.

Darwin, M. W. *A 3D Display System for Lightning Detection and Ranging (LDAR) Data*. AFIT/GM/ENP/00M-05. Faculty Advisor: Lt Col Cecilia Miner. Sponsor: PAFB/45 WS/SYR.

Dickerson, S. N. *An Evaluation of Microburst Prediction Indices for the Kennedy Space Center and Cape Canaveral Air Station (KSC/CCAS)*. AFIT/GM/ENP/00M-06. Faculty Advisor: Lt Col Cecilia Miner. Sponsor: 45th Weather Sqd.

Goetz, E.C. *Descriptive and Conditional Climatology for Specific Launch Commit Criteria for Cape Canaveral, Florida*. AFIT/GM/ENP/00M-07. Faculty Advisor: Maj Gary Huffines, DSN: 785-3636, ext 4511. Sponsor: 45th WS.

Holmes, M. W. *Techniques for Forecasting the Cessation of Lightning at Cape Canaveral Air Station and the Kennedy Space Center*. AFIT/GM/ENP/00M-08. Faculty Advisor: Maj Gary Huffines, DSN: 785-3636, ext 4511. Sponsor: 45 Weather Squadron.

Renwick, T. G. *Timing of Thunderstorm Occurrence for Cape Canaveral, Florida*. AFIT/GM/ENP/00M-10. Faculty Advisor: Lt Col Cecilia Miner. Sponsor: 45th WS.

3.3.9 USAF DIRECT REPORTING UNITS

AIR FORCE COMMUNICATION AGENCY

Banker, David M. *Modeling and Simulation of Communication Systems in OPNET*. AFIT/GE/ENG/00M-03. Faculty Advisor: Dr. Michael Temple, DSN: 785-3636, ext 4703. Sponsor: HQ AFCA/ITAT.

Conkling, Stephen R. *A Comparative Analysis of Mobility Management Schemes in a Low Earth Orbit Satellite Network*. AFIT/GCS/ENG/00M-04. Faculty Advisor: Maj Richard Raines, DSN: 785-3636, ext 4715. Sponsor: AFCA/ITAI.

Cunningham, Franklin E., Jr. *Network Security versus Network Connectivity: A Framework for Addressing the Issues Facing the Air Force Medical Community*. AFIT/GIR/LAS/99D-2. Faculty Advisor: Maj David P. Biros, DSN: 785-3636, ext 4826. Sponsor: HQ AFCA/GCI.

Muller, Alexander, Jr. *A Comparative Analysis of Proposed Mobility Support Schemes for IP Multicasting*. AFIT/GCS/ENG/00J-02. Faculty Advisor: Maj Richard A. Raines, DSN: 785-3636, ext 4715. Sponsor: AFCA/ITAI.

Neville, Brett D. *A Study of The Simple Network Management Protocol For PVC Configuration in ATM Networks*. AFIT/GCS/ENG/00J-03. Faculty Advisor: Major Richard A. Raines, DSN: 785-3636, ext 4715. Sponsor: AFCA/ITAI.

Zwickel, Ronald J. *A Performance Analysis of a Joint LMDS/Satellite Communication Network*. AFIT/GE/ENG/00M-20. Faculty Advisor: Maj Richard A. Raines, DSN: 785-3636, ext 4715. Sponsor: AFCA/ITAI.

3.3.10 ARMY

US ARMY RECRUITING COMMAND

Longhorn, David C. *Using Simulation To Model An Army Recruiting Station With Seasonality Effects.*
AFIT/GOR/ENS/00M-18. Faculty Advisor: Lt Col J. O. Miller, DSN: 785-255-6565, ext 4326. Sponsor: HQ USAREC.

US ARMY SAFETY CENTER

Gallan, Roger D. *Analysis of UH-60 Blackhawk Safety Controls Using Value Focused Thinking and Monte Carlo Simulation.* AFIT/GOA/ENS/OOM-3. Faculty Advisor: LTC Jack M. Kloeber, Jr. Sponsor: US Army Safety Center.

3.3.11 DEPARTMENT OF DEFENSE

DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

Buzo, Christopher D. *A Decision Support Tool to Aid Campaign Planners in Selecting Combat Aircraft for Theater Crisis.* AFIT/GEE/ENS/00M-02. Faculty Advisor: Lt Col Alan Johnson, DSN: 785-6565, ext 4284. Sponsor: DARPA/ISO.

*Hamill, Jonathan T. *Modelling Information Assurance: A Value Focused Thinking Approach.*
AFIT/GOR/ENS/00M-15. Faculty Advisor: Dr. Richard F. Deckro, DSN: 785-6565, ext 4325. Sponsor: DARPA/ISO/IASET and OSD/OT&E.

Pearson, Joseph C. *An Improved Algorithm for Translating Relational Schemas into an Object Model.*
AFIT/GCS/ENG/00J-04. Faculty Advisor: Dr. Thomas C. Hartrum, DSN: 785-3636, ext 4581. Sponsor: DARPA/ISO.

DEFENSE INTELLIGENCE AGENCY

Oxborrow, Glade G. *Defining Virtual Interactions: A Taxonomy for Researchers and Practitioners.*
AFIT/GIR/LAS/99D-8. Faculty Advisor: Maj Michael G. Morris, DSN: 785-3636 EXT 4578. Sponsor: HQ DIA.

DEFENSE THREAT REDUCTION AGENCY

Frederick Jr. Timothy A. *Performance Evaluation of the Nuclear Facility (NFAC) Source Model for the Hazard Prediction and Assessment Capability (HPAC) Code.* AFIT/GNE/ENP/00M-01. Faculty Advisor: Maj Vincent Jodoin, DSN: 785-3636, ext 4506. Sponsor: DTRA/CP.

OFFICE OF SECRETARY OF DEFENSE

*Hamill, Jonathan T. *Modelling Information Assurance: A Value Focused Thinking Approach.*
AFIT/GOR/ENS/00M-15. Faculty Advisor: Dr. Richard F. Deckro, DSN: 785-6565, ext 4325. Sponsor: DARPA/ISO/IASET and OSD/OT&E.

Horony, Mark D. *Information Systems Incidents: The Development of a Damage Assessment Model.*
AFIT/GSS/LAL/99D-5. Faculty Advisor: Maj David P. Biros, DSN: 785-3636 EXT 4826. Sponsor: OASD/C3I.

USSTRATCOM

*Cullenbine, Christopher A. *A Tabu Search Approach to the Weapons Assignment Model*. AFIT/GOR/ENS/00M-08. Faculty Advisor: Lt. Col Mark A. Gallagher, DSN: 785-6565, ext 4335. Sponsor: AFRL/AFOSR/NM and USSTRATCOM/J532.

Wozniak, Jon A. *Potential Fallout Effects from START Level Arsenals*. AFIT/GNE/ENP/00M-03. Faculty Advisor: Maj Vincent Jodoin, DSN: 785-3636, ext 4506. Sponsor: USSTRATCOM.

3.3.12 NATIONAL SECURITY AGENCY

Cochran, Jordon T. *Steganographic Computer Warfare*. AFIT/GCS/ENG/00M-03. Faculty Advisor: Dr. Henry B. Potoczny, DSN: 785-6565, ext 4282. Sponsor: NAIC/TAIF.

Delvecchio, Jeffrey R. *An Incentive Model for International Telecommunications*. AFIT/GOA/ENS/00M-02. Faculty Advisor: Dr. Yupo Chan. Sponsor: National Security Agency.

Lathrop, Dale A. *Viral Computer Warfare Via Activation Engine Employing Steganography*. AFIT/GCS/ENG/00M-14. Faculty Advisor: Dr. Henry B. Potoczny, DSN: 785-6565, ext 4282. Sponsor: NAIC/TAIF.

Moesner, John F. *A Method of Focusing the Attention of the Decision-Maker on Uncertain Information*. AFIT/GCS/ENG/00M-17. Faculty Advisor: Dr. Gregg Gunsch, DSN: 785-6565, ext 4182. Sponsor: NAIC/TAIT.

Orson, J. A. *Collection of Detonation Signatures and Characterization of Spectral Features*. AFIT/GSO/ENP/00M-01. Faculty Advisor: Lt Col Glen Perram, DSN: 785-3636, ext 4504. Sponsor: NAIC/DXDI.

Sperl, Daniel E. *Post-Processing Resolution Enhancement of Open Skies Photographic Imagery*. AFIT/GEO/ENG/00M-03. Faculty Advisor: Dr. Steven C. Gustafson, DSN: 785-3636, ext 4598. Sponsor: NAIC/GTN.

Watkins, Evan T. *Improving the Analyst and Decision-Maker's Perspective Through Uncertainty Visualization*. AFIT/GCS/ENG/00M-24. Faculty Advisor: Dr. Gregg Gunsch, DSN: 785-6565, ext 4182. Sponsor: NAIC/TAIT.

Wollam, Jon D. *Reverse Engineering of Foreign Missiles via Genetic Algorithm*. AFIT/GSE/ENY/99D-01. Faculty Advisor: Lt Col Stuart C. Kramer, DSN: 785-3636, ext 4318. Sponsor: NAIC/TANW.

3.3.13 DAYTON AREA GRADUATE STUDIES INSTITUTE

Ballew, Brian P. *The Distributor's Three-Dimensional Pallet-Packing Problem: A Mathematical Formulation and Heuristic Solution Approach*. AFIT/GOR/ENS/00M-02. Faculty Advisor: Dr. James T. Moore, DSN: 785-6565, ext 4337. Sponsor: DAGSI.

Bennett, Barry D. *Robust Multi-Scenario Optimization of an Air Expeditionary Force Force Structure Applying Genetic Algorithms to the Combat Forces Assessment Model*. AFIT/GOR/ENS/00M-04. Faculty Advisor: Lt Col Raymond R. Hill, DSN: 785-6565, ext 4327. Sponsor: DAGSI.

Festejo, Reginald P. *An Analytical Comparison of the Reduced Footprint of the Modular Aircraft Support System (MASS) vs. Current Aerospace Ground Equipment (AGE)*. AFIT/GOR/ENS/00M-13. Faculty Advisor: Lt Col Raymond R. Hill, DSN: 785-6565, ext 4327. Sponsor: DAGSI.

*Hoefar, Colby D. *Modeling Chlorinated Ethene Removal in Constructed Wetlands: A System Dynamics Approach*. AFIT/GEE/ENV/00M-09. Faculty Advisor: Dr. Michael L. Shelley, DSN: 785-2998. Sponsor: AFRL/MLQ and DAGSI.

Rebulanan, Rene C. *Simulation of the Joint Strike Fighter's (JSF) Autonomic Logistics System (ALS) Using Java Programming Language*. AFIT/GOR/ENS/00M-19. Faculty Advisor: Lt Col J. O. Miller, DSN: 785-255-6565, ext 4326. Sponsor: DAGSI.

3.3.14 EGYPTIAN AIR FORCE

Ari, Mehmet M. *Determining The Aircraft Requirement For Turkish Air Mobility System*. AFIT/GOR/ENS/00M-01. Faculty Advisor: Dr. James T. Moore, DSN: 785-6565, ext 4337. Sponsor: Egitim Daire Baskanligi.

Basdemir, Melih M. *Locating Search and Rescue Stations in the Aegean and Western Mediterranean Regions of Turkey*. AFIT/GOR/ENS/00M-03. Faculty Advisor: Dr. James T. Moore, DSN: 785-6565, ext 4337. Sponsor: Hrk. Bsk.ligi.Arama Kurtarma Sube Mudurlugu.

3.4 FUNDED RESEARCH PROJECTS

(*Multiple faculty participated on this project)

AGNES, MAJ GREGORY S., (ENY)

*“Electromagnetic Scattering Comparisons of Traditional and Adaptive Unmanned Aerial Vehicle Wings,”
Sponsor: DARPA, Funding: \$2,000

“Experimental Investigation of Active Inflatable Struts,” Sponsor: SAF/FMBMB-AFOY, Funding: \$12,500

“Smart Structures for Vibration Suppression of Optical Surfaces,” Sponsor: AFRL/AFOSR/NA, Funding: \$23,270.

ANDREW, COL JOHN M., (ENS)

*“Air Force Suite of Models (AFSOM) Support,” Sponsor: AF/XOCP, Funding: \$25,000.

BAKER, WILLIAM P., (ENC)

*“Photothermal Sensor for Multispectral IR Detection,” Sponsor: SAF/FMBMB-AFOY, Funding: \$50,000.

BAUER, KENNETH W., (ENS)

“The Mathematical Modeling of Mental Workload Using Artificial Neural Networks,” Sponsor: AFRL/AFOSR/NI, Funding: \$23,599.

*“Memorandum of Agreement Between The Director of Program Analysis and Evaluation for Headquarters, United States Army Recruiting Command and Department of Operational Sciences, Air Force Institute of Technology (AFIT) Enhanced Recruiters Workflow Study,” Sponsor: US ARMY, Funding: \$30,000.

BIROS, MAJ DAVID P., (ENV)

*“Synthesizing Trust Assessments of Artifact and Human Perceptions of Strategically Manipulated Information,”
Sponsor: AFRL/AFOSR/PIF, Funding: \$70,132.

BLECKMAN, CHARLES A., (ENV)

“Environmental Impacts of Aircraft Deicing Fluids,” Sponsor: ASC/ENVV, Funding: \$8,000.

BONS, MAJ JEFFREY P., (ENY)

“Investigation of Turbine Rotor Internal Cooling and Turbine Stator External Aerodynamics,” Sponsor: AFRL/AFOSR/NA, Funding: \$1,552.

“Low Pressure Turbine Separation Control Using Vortex Gen Jets,” Sponsor: AFRL/AFOSR/NI, Funding: \$14,525.

“Real Surface Effects on Turbine Heat Transfer and Aerodynamic Performance,” Sponsor: Mississippi State University, Funding: \$48,222.

“Wind Tunnel Testing,” Sponsor: AFRL, Funding: \$5,000.

BROTHERS, MAJ CHARLES P., (ENG)

“Advanced Microelectronics Design and Fabrication,” Sponsor: AFRL, Funding: \$20,000.

*“Global Information Compression Methodology & Implementation for Enhanced C4ISR System Integration,” Sponsor: DAGSI, Funding: \$40,886.

“VLSI Realization of an Optimized Auditory Model,” Sponsor: AFRL/HECA, Funding: \$10,000.

BURGGRAF, LARRY W., (ENP)

*“Multiplexed Compton Scatter Tomography for Non-Destructive Evaluation of Corrosion in Aging Aircraft,” Sponsor: AFRL/AFOSR/NA, Funding: \$23,399.

“Photothermal Interferometer Sensor For Trace Chemical Detection In Water And Air,” Sponsor: AFRL/HEST, Funding: \$100,000.

*“Photothermal Sensor for Multispectral IR Detection,” Sponsor: SAF/FMBMB-AFOY, Funding: \$50,000.

“Spectroscopic Investigation of the Oxidation and the Hydrolysis of Uranium Dioxide Particles and Uranium Particles,” Sponsor: AFTAC/TMNE, Funding: \$50,000.

*“Theoretical Calculations of Chemistry and Photoluminescence Spectroscopy for Adsorbates on SiC Clusters and Surfaces,” Sponsor: AFRL/AFOSR/NL, Funding: \$125,449.

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: ASC/YC (AV/FS), Funding: \$15,000.

CHILTON, LT COL LAWRENCE K., (ENC)

“Finite Element Methods for Finite Elasticity and Elasto-Plasticity,” Sponsor: AFRL/AFOSR/PIF, Funding: \$8,134.

CHRISSIS, JAMES W., (ENS)

*“Air Force Suite of Models (AFSOM) Support,” Sponsor: AF/XOCP, Funding: \$25,000.

COLLINS, MAJ PETER J., (ENG)

*“Electromagnetic Scattering Comparisons of Traditional and Adaptive Unmanned Aerial Vehicle Wings,” Sponsor: DARPA, Funding: \$2,000.

DECKRO, RICHARD F., (ENS)

“Information Assurance Modeling,” Sponsor: DARPA, Funding: \$100,000.

*“Joint Warfare Analysis Center Partnership,” Sponsor: JWAC, Funding: \$15,000.

“Memorandum of Agreement - Center for Operations Research in National Security Agency,” Sponsor: NSA, Funding: \$20,000.

“Modeling Surveillance,” Sponsor: SAF/FMBMB-AFOY, Funding: \$50,000.

“Rapid Approaches to Joint Campaign Planning,” Sponsor: AFRL/AFOSR/NL, Funding: \$24,776.

DELOACH, MAJ SCOTT A., (ENG)

“Agent Development Environments for Large-Scale, Multi-Agent, Distributed Mission Planning and Execution in Complex Dynamic Environment,” Sponsor: AFRL/AFOSR/NM, Funding: \$27,496.

*“Collaborative Information Systems and Adaptive Work Processes,” Sponsor: DAGSI, Funding: \$41,687.

*“Formal Specification and Design of Secure Agents,” Sponsor: AFRL/AFOSR/NI, Funding: \$12,930.

FRANKE, MILTON E., (ENY)

*“Application of a Triggered Isomer Heat Exchanger for Turbojet Engines,” Sponsor: AFRL/AFOSR/NE, Funding: \$11,600.

GALLAGHER, LT COL MARK A., (ENS)

*“Air Force Suite of Models (AFSOM) Support,” Sponsor: AF/XOCP, Funding: \$25,000.

*“Combinatory Optimization for Strategic Nuclear War Planning,” Sponsor: AFRL/AFOSR/NM, Funding: \$5,723.

“Cost Analysis Research for the Office of the Secretary of Defense, Program Analysis & Evaluation,” Sponsor: DoD Wash Hdq, Funding: \$20,000.

“Tabu Search for the Weapon Assignment Model,” Sponsor: USSTRATCOM, Funding: \$3,000.

GOLTZ, MARK N., (ENV)

*“Abiotic and Biochemical Contaminant Fate and Transport,” Sponsor: DAGSI, Funding: \$30,365.

“Bioenhanced In-Well Vapor Stripping To Treat Trichloroethylene (TCE),” Sponsor: AFRL/MLQP, Funding: \$22,528.

“In-Situ Catalytic Groundwater Treatment Using Pd-Catalysts and Horizontal Treatment Wells,” Sponsor: AFRL/MLQ, Funding: \$55,000.

GUNSCH, GREGG H., (ENG)

“Computer Network Attacks: Evidence Retention and Selective Forgetting,” Sponsor: AFRL/IFGB, Funding: \$25,000.

*“Synthesizing Trust Assessments of Artifact and Human Perceptions of Strategically Manipulated Information,” Sponsor: AFRL/AFOSR/PIF, Funding: \$70,132.

GUSTAFSON, STEVEN C., (ENG)

“Novelty Recognition in Material Damage Images,” Sponsor: AFRL/AFOSR/NI, Funding: \$19,754.

“Optical Characterization of Material Surface Damage,” Sponsor: AFRL/AFOSR/NI, Funding: \$188.

HARITOS, COL GEORGE K., (ENY)

“Matrix-Enabled Damage Tolerance in Oxide CFCCs,” Sponsor: AFRL/AFOSR/NA, Funding: \$83,184.

HARTRUM, THOMAS C., (ENG)

*“Collaborative Information Systems and Adaptive Work Processes,” Sponsor: DAGSI, Funding: \$41,687.

*“Formal Specification and Design of Secure Agents,” Sponsor: AFRL/AFOSR/NI, Funding: \$12,930.

HILL, LT COL RAYMOND R., (ENS)

*“Air Force Suite of Models (AFSOM) Support,” Sponsor: AF/XOCP, Funding: \$60,000.

*“Air Force Unmanned Aerial Vehicle Battlelab Support,” Sponsor: 53WG/VAVBL, Funding: \$15,000.

*“Models, Web-Based Simulations and Integrated Analysis for Improved Logistical Performance,” Sponsor: DAGSI, Funding: \$65,072.

JACOBS, LT COL TIMOTHY M., (ENG)

*“Development Support of Integrated Parallel Java Planning Environment for Chemical Plume Analysis and Disposition,” Sponsor: AFRL/IFFDC, Funding: \$13,000.

JACQUES, LT COL DAVID R., (ENY)

*“Control for Uninhabited Combat Air Vehicles,” Sponsor: AFRL/AFOSR/NM, Funding: \$6,042.

*“Cooperative Behavior and Control for Autonomous Munitions,” Sponsor: AFRL/MNGN, Funding: \$20,000.

*“Satellite Formation Flight Control,” Sponsor: AFRL/AFOSR/NM, Funding: \$28,607.

*“Unmanned Aerospace Vehicles,” Sponsor: AFRL/VACA, Funding: \$30,000.

JODOIN, MAJ VINCENT J., (ENP)

“Improvement of the Nuclear Weapon Source Model,” Sponsor: AFRL/AFOSR/NI, Funding: \$8,810.

JOHNSON, LT COL ALAN W., (ENS)

*“Advanced Logistics Project,” Sponsor: DARPA, Funding: \$20,000.

KING, PAUL I., (ENY)

*“Application of a Triggered Isomer Heat Exchanger for Turbojet Engines,” Sponsor: AFRL/AFOSR/NE, Funding: \$25,455.

“Computational Nonlinear Aeroelasticity for Multidisciplinary Analysis and Design,” Sponsor: DAGSI, Funding: \$20,754.

“High Cycle Fatigue Unsteady Aerodynamic Analysis Improvements and Flow Physics,” Sponsor: DAGSI, Funding: \$26,750.

“Micromachined Opto-Mechanical Pressure Sensor Arrays for Gas Turbine Engine Characterization,” Sponsor: DAGSI, Funding: \$16,708.

“Propagating Potential Disturbances in Turbomachinery,” Sponsor: AFRL/AFOSR/NA, Funding: \$56,234.

KLOEBER, LTC JACK M., (ENS)

*“Joint Warfare Analysis Center Partnership,” Sponsor: JWAC, Funding: \$15,000.

*“Memorandum of Agreement Between The Director of Program Analysis and Evaluation for Headquarters, United States Army Recruiting Command and Department of Operational Sciences, Air Force Institute of Technology (AFIT) Enhanced Recruiters Workflow Study,” Sponsor: US ARMY, Funding: \$30,000.

LAIR, ALAN V., (ENC)

*“Scattering & Propagation of Electromagnetic Waves,” Sponsor: AFRL/AFOSR/NM, Funding: \$96,156.

LAMONT, GARY B., (ENG)

*“Development Support of Integrated Parallel Java Planning Environment for Chemical Plume Analysis and Disposition,” Sponsor: AFRL/IFFDC, Funding: \$13,000.

*“Global Information Compression Methodology & Implementation for Enhanced C4ISR System Integration,” Sponsor: DAGSI, Funding: \$40,886.

“Radar Signal Processing Within The Signal/Image Processing (SIP) Computational Technology Area Under The High Performance Computing Modernization Office (HPCMO) CHSSI Program,” Sponsor: AFRL/IFTC, Funding: \$45,000.

LANNING, MAJ JEFFREY W., (ENS)

*“Air Force Suite of Models (AFSOM) Support,” Sponsor: AF/XOCP, Funding: \$25,000.

*“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: ASC/YC (AV/FS), Funding: \$15,000.

LAPUMA, MAJ PETER T., (ENV)

“Bioavailability of Chromate Containing Primers Paints,” Sponsor: AFRL/AFOSR/NI, Funding: \$26,960.

“Studies on Bioavailability of Chromate Containing Primer Paints,” Sponsor: AFRL/MLQP, Funding: \$13,662.

LARGENT, MAJ CRAIG C., (ENP)

“Cavity Ring-Down Spectroscopy,” Sponsor: AFRL/AFOSR/NE, Funding: \$12,203.

LITTLE, LT COL JEFFREY K., (ENY)

“Experimental Investigation of High-Speed Boundary Layers with Wall Roughness,” Sponsor: AFRL/AFOSR/NA, Funding: \$1,953.

LOTT, LT COL JAMES A., (ENG)

*“Optical Phased Array Technology Development in Support of Active/Passive Optical Sensor Research,” Sponsor: DAGSI, Funding: \$39,614.

“Vertical Microcavity Lasers,” Sponsor: AFRL/AFOSR/NI, Funding: \$19,745.

MAGEE, MAJ ERIC P., (ENG)

“Adaptive Optics in Strong Turbulence and Airborne Laser Advanced Concept Studies,” Sponsor: AFRL/DEBA, Funding: \$10,000.

“Bi-Directional Reflectance Measurements of Satellite Materials for Space Object Identification,” Sponsor: AFRL/DEOF, Funding: \$15,000.

*“Optical Phased Array Technology Development in Support of Active/Passive Optical Sensor Research,” Sponsor: DAGSI, Funding: \$39,614.

MALL, SHANKAR, (ENY)

“Cooperative Research Project on Fretting Fatigue,” Sponsor: AFRL/MLF, Funding: \$207,988.

“Effects of Moisture on the Mechanical Behavior of Fabric-Reinforced Ceramic Matrix Composites,” Sponsor: AFRL/PRTC, Funding: \$30,000.

“Interfacial Fracture Mechanisms in Bimaterial Systems at Elevated Temperatures using Experimental and Computational Methods,” Sponsor: AFRL/AFOSR/NA, Funding: \$116,625.

“Life Prediction Modeling of Fabric-Reinforced Ceramic Matrix Composite,” Sponsor: AFOSR/NL, Funding: \$29,050.

MARCINIAK, LT COL MICHAEL A., (ENP)

“Radiative Recombination Dynamics in InAsSb Quantum well Lasers,” Sponsor: AFRL/DEOF, Funding: \$25,000.

MATHIAS, MAJ KARL S., (ENG)

*“Object-Based Extensible Data Model for Next Generation electronic Warfare Integrated Reprogrammable DB (NGE),” Sponsor: NAIC/TAX, Funding: \$5,000.

MCINTYRE, LT COL GREGORY A., (ENS)

*“Air Force Suite of Models (AFSOM) Support,” Sponsor: AF/XOCP, Funding: \$25,000.

Using Goal Lattices for Sensor Management,” Sponsor: AFRL/AFSOP/NM, Funding: \$15,436.

MILLER, LT COL MIKEL M., (ENG)

“GNC Laboratory Upgrades to Enhance GPS/INS Jamming Capabilities,” Sponsor: 746th TEST SQD, Funding: \$15,000.

*“Field Test of Low-Power Global Positioning System Jammer Location System,” Sponsor: AFRL/AFOSR/NL, Funding: \$15,701.

“MEMS Gyro and Direct Correlator Output Processing GPS Receiver,” Sponsor: AFRL/SNAR, Funding: \$12,000.

MILLER, LT COL JOHN O., (ENS)

*“Air Force Suite of Models (AFSOM) Support,” Sponsor: AF/XOCP, Funding: \$25,000.

*“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: ASC/YC (AV/FS), Funding: \$15,000.

*“Memorandum of Agreement Between The Director of Program Analysis and Evaluation for Headquarters, United States Army Recruiting Command and Department of Operational Sciences, Air Force Institute of Technology (AFIT) Enhanced Recruiters Workflow Study,” Sponsor: US ARMY, Funding: \$30,000.

MOORE, JAMES T., (ENS)

*“Combinatory Optimization for Strategic Nuclear War Planning,” Sponsor: AFRL/AFOSR/NM, Funding: \$5,723.

*“Models, Web-Based Simulations and Integrated Analysis for Improved Logistical Performance,” Sponsor: DAGSI, Funding: \$65,072.

MURDOCK, MAJ PAUL W., (ENS)

*“Air Force Suite of Models (AFSOM) Support,” Sponsor: AF/XOCP, Funding: \$25,000.

OXLEY, MARK E., (ENC)

“A Reductionist Approach to Process Discovery,” Sponsor: AFRL/AFOSR/NM, Funding: \$5,879.

*“Global Information Compression Methodology & Implementation for Enhanced C4ISR System Integration,” Sponsor: DAGSI, Funding: \$40,886.

PACHTER, MEIR N., (ENG)

“Algorithm Development for On-Line Control of the Airborne Laser (ABL),” Sponsor: AFRL/DEBA, Funding: \$18,000.

*“Control for Uninhabited Combat Air Vehicles,” Sponsor: AFRL/AFOSR/NM, Funding: \$6,042.

*“Cooperative Behavior and Control for Autonomous Munitions,” Sponsor: AFRL/MN, Funding: \$8,607.

*“Satellite Formation Flight Control,” Sponsor: AFRL/AFOSR/NM, Funding: \$23,629.

“System Identification, Adaptive and Nonlinear Control,” Sponsor: AFRL/AFOSR/NI, Funding: \$5,230.

*“Unmanned Aerospace Vehicles,” Sponsor: AFRL/VACA, Funding: \$15,000.

PALAZOTTO, ANTHONY M., (ENY)

“Investigation of Composite Sandwich Panels,” Sponsor: AFRL/AFOSR/NI, Funding: \$16,132.

“Modeling Inflatable Antenna Structures,” Sponsor: AFRL/VACS, Funding: \$5,342.

“Numerical Investigation of the Gouging Phenomenon Within a Hypersonic Rail-Sled Assembly,” Sponsor: AFRL/AFOSR/NM, Funding: \$100,000.

PERRAM, LT COL GLEN P., (ENP)

“Perturbations and Resonances in the Infrared Spectrum of Nitrosyl Bromide: Interactions between the (0,1,0) and (0,0,2), the (1,1,0) and (1,0,2), and the (2,1,0) and (2,0,2) Levels,” Sponsor: AFRL/AFOSR/NL, Funding: \$20,441.

“Rotational energy transfer in silane for SiN film deposition,” Sponsor: AFRL/AFOSR/NL, Funding: \$29,885.

“Spectral Signatures from Munitions,” Sponsor: SAF/FMBMB-AFOY, Funding: \$22,316.

QUINN, DENNIS W., (ENC)

“Physiological Pharmacokinetic Models of Dermal Absorption,” Sponsor: AFRL/AFOSR/NL, Funding: \$23,453.

RAINES, MAJ RICHARD A., (ENG)

*“Joint Warfare Analysis Center Partnership,” Sponsor: JWAC, Funding: \$15,000.

“PASS Resource Management Strategy,” Sponsor: US Pacific Com, Funding: \$26,000.

*“Technical Support, Air Force Communications Systems Modeling,” Sponsor: AFCA/ITAI, Funding: \$42,000.

RAQUET, MAJ JOHN F., (ENG)

“Determination of the Direction of Incoming Global Positioning System (GPS) Signals Using Multiple GPS Receivers,” Sponsor: AFRL/AFOSR/NM, Funding: \$15,540

“Error Analysis and Simulation for AMSTE Program,” Sponsor: AFRL/IFFDC, Funding: \$30,000.

*“Field Test of Low-Power Global Positioning System Jammer Location System,” Sponsor: AFRL/AFOSR/NL, Funding: \$27,701.

ROH, WON B., (ENP)

“High-Power Efficient, Diode-Pumped Fiber Lasers for Air Force Applications,” Sponsor: AFRL/AFOSR/NE, Funding: \$51,602.

“Nonlinear Optical Phenomena in Optical Fibers and Their Application to High-Power Fiber Lasers,” Sponsor: AFRL/DECO, Funding: \$20,000.

SHELLEY, MICHAEL L., (ENV)

*“Abiotic and Biochemical Contaminant Fate and Transport,” Sponsor: DAGSI, Funding: \$30,365.

SMITH, LT COL E. PRICE, (ENY)

“AFIT Systems Engineering Unmanned Aerial Vehicle,” Sponsor: AETC/ETTAP, Funding: \$12,000.

SPENNY, CURTIS H., (ENY)

“Sustained G Flight Simulator,” Sponsor: Environmental Tectonics Corporation, Funding: \$60,000.

SWARTZ, MAJ STEPHEN M., (ENS)

*“Advanced Logistics Project,” Sponsor: DARPA, Funding: \$35,000.

TALBERT, MAJ MICHAEL L., (ENG)

*“Object-Based Extensible Data Model for Next Generation electronic Warfare Integrated Reprogrammable DB (NGE),” Sponsor: NAIC/TAX, Funding: \$5,000.

TEMPLE, MICHAEL A., (ENG)

“Technical Support,” Sponsor: AFRL/SNR, Funding: \$19,994.

*“Technical Support, Air Force Communications Systems Modeling,” Sponsor: AFCA/ITAI, Funding: \$42,000.

TERZUOLI, ANDREW J., (ENG)

*“Electromagnetic Scattering Comparisons of Traditional and Adaptive Unmanned Aerial Vehicle Wings,” Sponsor: DARPA, Funding: \$2,000.

TRAGESSER, STEVEN G., (ENY)

“Formation Flying with Tethered Spacecraft,” Sponsor: SAF/FMBMB-AFOY, Funding: \$18,500.

WALTERS, LT COL MICHAEL K., (ENP)

*“Air Force Unmanned Aerial Vehicle Battlelab Support,” Sponsor: 53WG/VAVBL, Funding: \$15,000.

WEEKS, DAVID E., (ENP)

“The Development of Time Dependent Wave Packet Methods For Computing Reactive Scattering Matrix Elements,” Sponsor: AFRL/AFOSR/PIF, Funding: \$11,391.

“Nonadiabatic Molecular Reaction Dynamics of B + H₂,” Sponsor: AFRL/AFOSR/NL, Funding: \$63,910.

*“Theoretical Calculations of Chemistry and Photoluminescence Spectroscopy for Adsorbates on SiC Clusters and Surfaces,” Sponsor: AFRL/AFOSR/NL, Funding: \$58,527.

WIESEL, WILLIAM E., (ENY)

“Multivariate Control of Satellite Clusters,” Sponsor: DAGSI, Funding: \$6,078.

WOLF, PAUL J., (ENP)

“Electromagnetic Interference - High Power,” Sponsor: AFRL/DEH, Funding: \$10,000.

“Line Broadening Studies in Halogen Molecules,” Sponsor: AFRL/AFOSR/NI, Funding: \$11,328.

WOOD, AIHUA K., (ENC)

*“Scattering & Propagation of Electromagnetic Waves,” Sponsor: AFRL/AFOSR/NM, Funding: \$28,539.

“Time Domain Integral Equation Methods for Electromagnetic,” Sponsor: AFRL/AFOSR/NM, Funding: \$20,719.

YEO, YUNG KEE, (ENP)

“Defect Studies in Group III-Nitrides For Optoelectronic Device Perspectives,” Sponsor: AFRL/AFOSR/NE, Funding: \$24,617.

“Intrinsic and Extrinsic Energy Level Studies in GaN,” Sponsor: AFRL/AFOSR/NI, Funding: \$32,536.

“Ion Implantation And Metallic Contact Studies For Application To AlGaN Optoelectronic Devices,” Sponsor: AFRL/AFOSR/NE, Funding: \$80,000.

3.5 REFEREED JOURNAL PUBLICATIONS

[*Denotes duplicate entry, multiple faculty authors.]

AGNES, Maj GREGORY S., (ENY)

*Agnes, G. S. and S. Mall. "Structural Integrity Issues during Piezoelectric Vibration Suppression of Composite Structure," *Composites: Part B*, Vol. 30: 727-738 (1999).

BAILEY, Lt Col T. GLENN, (ENS)

Salah, Moataz, Richard A. Raines, Michael A. Temple and T. Glenn Bailey. "A Novel Approach for Deriving Bounds of Punctured Turbo Codes," *IEEE Electronic Letters*, Vol. 35, No. 25: 2191-2192 (9 December 1999).

*Salah, Moataz, Richard A. Raines, Michael A. Temple, and T. Glenn Bailey. "Unequal Error Protection Turbo Codes for Short Frames," *IEEE Communication Letters*: (October 1999).

BAKER, WILLIAM P., (ENC)

*Li, G., L. W. Burggraf, and W. P. Baker. "Photothermal Spectroscopy Using Multilayer Cantilever for Chemical Detection," *Applied Physics Letters*, 76: 1122-1124 (2000).

BALDWIN, Maj RUSTY O., (ENG)

Baldwin, Rusty O., Nathaniel J. Davis IV, John E. Kobza, and Scott F. Midkiff. "Real-Time Queueing Theory: A Tutorial Presentation with an Admission Control Application," *Queueing Systems*: Vol. 35: 1-21 (June 2000).

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

Bauer, K.W., S. G. Alsing and K.A. Greene. "Feature Screening using Signal to-Noise Ratios," *Neurocomputing*, Vol 31: 29-44 (Mar 2000).

Greene, K.A., K.W. Bauer, G.F. Wilson, C.A. Russell, S.K. Rogers, and M. Kabrisky "Selection of Psychophysiological Features for Classifying Air Traffic Controller Workload in Neural Networks," *Smart Engineering System Design*, 2000, Vol 2: 315-330 (2000).

BLECKMANN, CHARLES A., (ENV)

*Meshako, C. E., C. A. Bleckmann, and M. N. Goltz. "Biodegradability and Microbial Toxicity of Aircraft Fuel System Icing Inhibitors," *Environmental Toxicology*, 14: 383-390 (1999).

BURGGRAF, LARRY W., (ENP)

Shoemaker, J., L.W. Burggraf, and M.S. Gordon. "An *ab initio* cluster study of the structure of the Si(001) surface," *Journal of Chemical Physics*: 112, No. 6: 2994-3005 (2000).

*Li, G., L.W. Burggraf, and W. P. Baker. "Photothermal Spectroscopy using Multilayer Cantilever for Chemical Detection," *Applied Physics Letters* 76: 9, 1122 (2000).

*Li, G., L.W. Burggraf, J.R. Shoemaker, D. Eastwood, and A.E. Stiegman. "High-temperature photoluminescence in sol-gel silica containing SiC/C nanostructures," *Applied Physics Letters* 76: 23, 3373 (2000).

CHILTON, Lt Col LAWRENCE K., (ENC)

Chilton, L. K. and M. Suri. "On the Construction of Stable Curvilinear p Version Elements for Mixed Formulations of Elasticity," *Numerische Mathematik* 86: 29-48 (2000).

COLLINS, Maj PETER J., (ENG)

*Eigel, Robert L., Jr., Peter J. Collins, Andrew J. Terzuoli, Jr., Giuseppe Nesti, and Joaquim Fortuny. "Bistatic Scattering Characterization of Complex Objects," *IEEE Transactions on Geoscience & Remote Sensing*, Part I, Vol. 38, No. 5: pp. 2078-2092 (September 2000).

CROWN, Maj JOHN S., (ENC)

Crown, J. S. "Percentage Points for Directional Anderson-Darling Goodness-of-Fit Tests," *Communications in Statistics: Simulation and Computation*, 29: 523-532 (2000).

D'AZZO, JOHN J., (ENG)

*D'Azzo, John and Meir Pachter. "Stability Theory: Frequency and Time Domain Methods, Including Saturation Effects," *Encyclopedia of Electrical Engineering*, Wiley: (invited article) (1999).

DECKRO, RICHARD F., (ENS)

Davis, Christine C., Richard F. Deckro, and Jack A. Jackson. "A Value Focused Thinking Model for a C4 Network," *Journal of Multi-Criteria Decision Analysis*, Vol. 9: pp. 138 – 162 (July, 2000).

*Doyle, Michael P., Richard F. Deckro, Jack A. Jackson, and Jack M. Kloeber, Jr. "A Value-Based Approach to Offensive IO Measures of Merit," *Military Operations Research*, Vol. 5, No. 2: pp. 5 – 18 (2000).

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

Della-Rose, Devin J., Jan Sojka, Lie Zhu, Robert Schunk, Michael David. "Driving the High-Latitude Ionosphere with Variable Time Resolution "K-Like" Geomagnetic Indices," *Journal of Atmospheric and Solar-Terrestrial Physics*, 62: 773-786 (2000).

DELOACH, Maj SCOTT A., (ENG)

*DeLoach, Scott A. and Thomas C. Hartrum, "A Theory-Based Representation for Object-Oriented Domain Models," *IEEE Transactions on Software Engineering*, Vol. 26, No. 6: (June 2000).

FRANKE, MILTON E., (ENY)

Snyder, C. H., M. E. Franke, and M. L. Masquelier. "Wind-Tunnel Tests of an Aircraft Turret Model," *AIAA Journal of Aircraft*, 37: 368-376 (May-June 2000).

GOLTZ, MARK N., (ENV)

*Meshako, C. E., C. A. Bleckmann, and M. N. Goltz. "Biodegradability and Microbial Toxicity of Aircraft Fuel System Icing Inhibitors," *Environmental Toxicology*, 14: 383-390 (1999).

HARTRUM, THOMAS C., (ENG)

*DeLoach, Scott A. and Thomas C. Hartrum. "A Theory-Based Representation for Object-Oriented Domain Models," *IEEE Transactions on Software Engineering*, Vol. 26, No. 6: (June 2000).

HENGEGHOLD, ROBERT L., (ENP)

- *Johnstone, D. K., Y. K. Yeo, R. L. Hengehold, and G. W. Turner. "Control of Surface States in $\text{GaSb}/\text{Al}_x\text{Ga}_{1-x}\text{As}_y\text{Sb}_{1-y}/\text{Ga}_x\text{In}_{1-x}\text{Sb}/\text{Al}_x\text{Ga}_{1-x}\text{As}_y\text{Sb}_{1-y}$ Quantum Well Structures," *Appl. Phys. Lett.* 75: 779-2781 (1999).
- *Ahoujja, M., Y.K. Yeo, M.R.Smith, R.L. Hengehold, G.S. Pomrenke, and Jim Huffman, "Hall coefficient singularity observed from p-SiGeC grown on n⁻-Si substrate," *Compound Semiconductors 1999*, Berlin, Germany, 1999; Inst. Phys. Conf. Ser No. 166, (Institute of Physics, Bristol and Philadelphia, 2000): 161-164 (2000).
- *Ahoujja, M., Y. K. Yeo, R. L. Hengehold, G. S. Pomrenke, D. C. Look, and Jim Huffman. "Electrical properties of boron doped p-SiGeC grown on n⁻-Si substrate," *Appl. Phys. Lett.* 77: 1327-1329 (2000).

HILL, Lt Col RAYMOND R., (ENS)

- Hill, R. R. and C. H. Reilly. "The Effects of Coefficient Correlation Structure in Two-Dimensional Knapsack Problems on Solution Procedure Performance," *Management Science*, Vol 46, No. 2: pp. 302-317 (2000).
- Hill, R. R. and C. H. Reilly. "Multivariate Composite Distributions for Coefficients in Synthetic Optimization Problems," *European Journal of Operational Research*. Vol 121: pp. 64-77 (2000).

HOUPIS, CONSTANTINE H., (ENG)

- *Pachter, Meir and Constantine H. Houpis. "Modeling of Electro-Hydraulic and Electro-Hydrostatic Actuators," *CRC Measurement, Instrumentation and Sensors Handbook*, CRC Press and IEEE Press, 99: 1-99 (11-1999).

JACQUES, Lt Col DAVID R., (ENY)

- Sznaier, M., J. Cloutier, R. Hull, D. Jacques, and C. Mracek. "Receding Horizon Control Lyapunov Function Approach to Suboptimal Regulation of Nonlinear States," *AIAA Journal of Guidance, Control and Dynamics*, 23: 399-405 (May-June 2000).

KLOEBER, LTC JACK M., (ENS)

- *Doyle, Michael P., Richard F. Deckro, Jack A. Jackson, and Jack M. Kloeber, Jr. "A Value-Based Approach to Offensive IO Measures of Merit," *Military Operations Research*, Vol. 5, No. 2: pp. 5 – 18 (2000).

LAIR, ALAN V., (ENC)

- Lair, A. V. "A Necessary and Sufficient Condition for Existence of Large Solutions to Semilinear Elliptic Equations," *Journal of Mathematical Analysis and Applications*, 240: 205-218 (December 1999).
- *Lair, A. V. and A. W. Wood. "Large Solutions of Semilinear Elliptic Equations with Nonlinear Gradient Terms," *International Journal of Mathematics and Mathematical Sciences*, 22: 869-883 (December 1999).
- *Lair, A. V. and A. W. Wood. "Large Solutions of Sublinear Elliptic Equations," *Nonlinear Analysis*, 39: 745-753 (Spring 2000).
- *Lair, A. V. and A. W. Wood. "Existence of Entire Large Positive Solutions of Semilinear Elliptic Systems," *Journal of Differential Equations*, 164: 380-394 (July 2000).

LAMONT, GARY B., (ENG)

Lamont, Gary B. and David Van Veldhuizen. "Multiobjective Evolutionary Algorithms: Analyzing the State-of-the-Art," *Journal of Evolutionary Computation*, Vol. 8, No. 2 MIT Press: 125-148 (Summer 2000).

LAPUMA, PETER T., (ENV)

LaPuma, P. T., and W. E. Bolch. "The Impact of Recirculating Industrial Air on Aircraft Painting Operations," *Applied Occupational and Environmental Hygiene*, 14:1-9 (October 1999).

LARGENT, Maj CRAIG C., (ENP)

Maosheng Zhao, Edward H. Wahl, Thomas G. Owano, Craig C. Largent, Richard N. Zare, Charles H. Kruger. "Near-Surface Reduction of Cavity Ring-Down Spectroscopy Detection Sensitivity." *Chemical Physics Letters*, 318: 555-560 (2000).

LOTT, Lt Col JAMES A., (ENG)

Lott, James A., Nicholai N. Ledentsov, Viktor M. Ustinov, Nicholai A. Maleev, Alexey E. Zhukov, Alexey R. Kovsh, Mikhail V. Maximov, Boris V. Volovik, Zhores I. Alferov, and Dieter Bimberg. "InAS Quantum Dot VCSELs on GaAs Substrates Emitting at 1.3 μm ," *Electronics Letters*, Vol. 36, No. 13: 1384-1385 (3 Aug 00).

Ledentsov, Nicholai N., Marius Grundmann, Frank Heinrichsdorff, Dieter Bimberg, Viktor M. Ustinov, Alexey E. Zhukov, Mikhail V. Maximov, Zhores. I. Alferov, and James A. Lott. "Quantum Dot Heterostructure Lasers," *IEEE Journal of Selected Topics in Quantum Electronics*, Vol. 6, No. 3: 439-451 (May/June 2000).

MALL, SHANKAR, (ENY)

*Agnes, G. S. and S. Mall. "Structural Integrity Issues during Piezoelectric Vibration Suppression of Composite Structure," *Composites: Part B*, Vol. 30: 727-738 (1999).

Cortez, R., S. Mall and J. R., Calcaterra. "Interaction of High-Cycle and Low-Cycle Fatigue on Fretting Fatigue Behavior of Ti-6AL-4V," *Fretting Fatigue: Current Technology and Practices*, ASTM STP 1367: 183-198 (2000).

Naboulsi, S. and S. Mall. "Methodology to Analyze Aerospace Structures Repaired with a Bonded Composite Patch," *Journal of Strain Analysis*, Vol. 34, No. 6: 395-412 (1999).

Calcaterra, J. R., and S. Mall. "Residual Strength Degradation of a Titanium Matrix Composite Subjected to Elevated Temperature Fatigue," *Journal of Science and Engineering of Composite Materials*, Vol. 8, No. 5: 229-241 (1999).

Mall, S. and T. L. Hsu. "Electromechanical Fatigue Behavior of Graphite/Epoxy Laminate Embedded with Piezoelectric Actuator," *Smart Materials and Structures*, Vol. 9: 78-84 (2000).

Gao, X.-L. and S. Mall. "A Two-Dimensional Rule-of -Mixtures Micromechanics Model for Woven Fabric Composites," *Journal of Composites Technology and Research*, Vol. 22, No.2: pp 60-70 (April 2000).

Iyer, K. and S. Mall. "Effects of Cycling Frequency and Contact Pressure on Fretting Fatigue under Variable Amplitude Loading," *Fatigue and Fracture of Engineering Materials and Structures*, Vol. 23: 335-346 (2000).

Tsai, C. T. and S. Mall. "Elasto-Plastic Finite Element Analysis of Fretting Stresses in Pre-Stressed Strip in Contact with Cylindrical Pad," *Finite Elements in Analysis and Design*, Vol. 36: 171-187 (2000).

MAYBECK, PETER S., (ENG)

Maybeck, Peter S. "Multiple Model Adaptive Algorithms for Detecting and Compensating Sensor/Actuator Failures in Aircraft Flight Control Systems," *International Journal of Robust and Nonlinear Control*, Special Issue on "Reconfigurable Flight Control," Vol. 9: pp. 1051-1070 (December 1999).

Hanlon, Peter D. and Peter S. Maybeck. "Multiple-Model Adaptive Estimation Using Residual Correlation Kalman Filter Bank," *IEEE Transactions on Aerospace and Electronic Systems*, Vol. 36 No. 2: 393-406 (April 2000).

Hanlon, Peter D. and Peter S. Maybeck. "Characterization of Kalman Filter Residuals in the Presence of Mismatching," *IEEE Transactions on Aerospace and Electronic Systems*, Vol. 36, No. 1: pp. 114-131 (January 2000).

MORRIS, Maj MICHAEL G., (ENV)

Morris, M., and V. Venkatesh. "Age Differences in Technology Adoption Decisions: Implications for a Changing Workforce," *Personnel Psychology* (2000).

Venkatesh, V., M. Morris, and P. Ackerman. "A Longitudinal Field Investigation of Gender Differences in Individual Adoption and Usage of Technology," *Organizational Behavior and Human Decision Processes*: (2000).

Venkatesh, V., and M. Morris. "Why Men Don't Ever Stop to Ask for Directions?: Gender, Social Influence, and Their Role in Technology Acceptance and Usage Behavior," *MIS Quarterly*, 24:1: 115-139 (2000).

Morris, M., C. Speier, and J. Hoffer. "An Examination of Procedural and Object-Oriented Analysis Methods: Does Prior Experience Help or Hinder Performance?" *Decision Sciences*, 30:1: 107-136 (2000).

MURDOCK, Maj W. PAUL (ENS)

Cassady, C. Richard, W. Paul Murdock, and Edward A. Pohl. "Selective Maintenance for Support Equipment Involving Multiple Maintenance Actions," *European Journal of Operational Research*, Vol. 129: pp. 252-258.

OXLEY, MARK E., (ENC)

*Quinn, D. W., M. E. Oxley, and D. C. Vosika. "The Boundary Element Method Applied to a Moving Free Boundary Problem," *International Journal for Numerical Methods in Engineering*, 46: 1335-1346 (1999).

Kropias-Hughes, C. V., S. K. Rogers, M. E. Oxley and M. Krabrisky. "Backpropagation of an Image Similarity Metric for Autoassociative Neural Networks," *Journal of Pattern Analysis & Applications*, 3: 31-38 (2000).

Kropas-Hughes, C. V., M. E. Oxley, S. K. Rogers, and M. Kabrisky. "Autoassociative-Heteroassociative Neural Networks," *Engineering Applications of Artificial Intelligence*, 13: 603-609 (2000).

Villars, P., K. Brandenburg, M. Berndt, S. LeClair, A. Jackson, Y.-H. Pao, B. Igelnik, M. Oxley, B. Bakshi, P. Chen, S. Iwata. "Interplay of large materials databases, semi-empirical methods, neuro-computing and first principle calculations for ternary compound former/nonformer prediction," *Engineering Applications of Artificial Intelligence*, 13: 497-505 (2000).

PACHTER, MEIR N., (ENG)

*Pachter, Meir and Constantine H. Houppis. "Modeling of Electro-Hydraulic and Electro-Hydrostatic Actuators," *CRC Measurement, Instrumentation and Sensors Handbook*, CRC Press and IEEE Press, pp.99.1-99 (11-1999).

Pachter, Meir and O'Dell Reynolds. "Phasor Approach to Continuous-Time System Identification," *IEEE Transactions on Aerospace and Electronic Systems*, Vol. 35, No. 2: pp. 683-699 (1999).

Pachter, Meir and O'Dell Reynolds. "Identification of a Discrete-Time Dynamical System," *IEEE Transactions on Aerospace and Electronic Systems*, Vol. 36, No. 1: pp. 212-225 (2000).

*D'Azzo, John and Meir Pachter. "Stability Theory: Frequency and Time Domain Methods, Including Saturation Effects," *Encyclopedia of Electrical Engineering*, Wiley: (invited article) (1999).

Suter, Bruce and Meir Pachter, "Multidimensional Signal Processing," *Encyclopedia of Electrical Engineering*, Wiley: (invited paper) (1999).

Buffington, James, Phillip Chandler, and Meir Pachter. "On-Line System Identification for Aircraft with Distributed Control Effectors," *International Journal of Robust and Nonlinear Control*, Vol. 9, No. 14: pp. 1033-1049 (December 1999).

Sajendra N. Singh, Phillip Chandler, Corey Schumacher, Siva Banda, and Meir Pachter. "Nonlinear Adaptive Close Formation Control of Unmanned Aerial Vehicles," *Journal of Dynamics and Control*, Vol. 10: pp. 179-194 (2000).

PALAZOTTO, ANTHONY N., (ENY)

Palazotto, Anthony N., Eric Herup, and Nagish Gummadi. "Finite Element Analysis of Low Velocity Impact on Sandwich Plates," *Composite Structures*, 49: 209-227 (June 2000).

Palazotto, Anthony N., Samir Nablousi, and James Greer. "Static-Dynamic Analysis of Toroidal Shells," *ASCE, Journal of Aerospace Engineering*, 13: 110-121 (July 2000).

Palazotto, Anthony N. and Samir Nablousi. "Thermodynamic Damage Model for Composites Under Sever Loading," *ASCE, Journal of Engineering Mechanics*, 126: 1001-1011 (Oct.2000).

PERRAM, Lt Col GLEN P., (ENP)

*Pope, Robert S., Paul J. Wolf, and Glen P. Perram. "Collisional Broadening of Rotational Transitions in the O₂ A Band by Molecular Perturbers," *Journal of Quantitative Spectroscopy and Radiative Transfer*, 64: 363 (2000).

Franklin, Robert E. and Glen P. Perram. "Collisional Dynamics of Bi₂ A(0_u⁺). I. Quantum-Resolved Vibrational Energy Transfer for v'=0-4," *Journal of Chemical Physics*, 111: 5757-5763 (1999).

QUINN, DENNIS W., (ENC)

*Quinn, D. W., M. E. Oxley, and D. C. Vosika. "The Boundary Element Method Applied to a Moving Free Boundary Problem," *International Journal for Numerical Methods in Engineering*, 46: 1335-1346 (1999).

RAINES, Maj RICHARD A., (ENG)

*Salah, Moataz, Richard A. Raines, Michael A. Temple and T. Glenn Bailey. "A Novel Approach for Deriving Bounds of Punctured Turbo Codes," *IEEE Electronic Letters*, Vol. 35, No. 25: pp. 2191-2192 (9 Dec 99).

RAQUET, JOHN F., Maj, (ENG):

Raquet, John F. and Gerard Lachapelle. "Development and Testing of a Kinematic Carrier-Phase Ambiguity Resolution Method Using a Reference Receiver Network," *NAVIGATION: Journal of the Institute of Navigation*, 46: pp. 283-295 (Winter 1999-2000).

ROH, WON B., (ENP)

Turner, M. D., W. B. Roh, and K. L. Schepler. "Nonlinear Optical Properties of GaSb and GaInAsSb and their Application for Phase Conjugation in Degenerate Four-wave Mixing," *J. of Opt. Soc. Am. B* 17: 790-804 (2000)

SHELLEY, MICHAEL L. (ENV)

Shelley, Michael L., and Leslie A. Mudgett. "A Mechanistic Simulation Model of a Constructed Wetland Designed to Remove Organic Matter from Stormwater Runoff," *Journal of Environmental Systems*, 27: 33-54 (1999).

TEMPLE, MICHAEL A., (ENG)

*Salah, Moataz, Richard A. Raines, Michael A. Temple and T. Glenn Bailey. "A Novel Approach for Deriving Bounds of Punctured Turbo Codes," *IEEE Electronic Letters*, Vol. 35, No. 25: pp. 2191-2192 (9 Dec99).

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

*Eigel, Robert L., Jr., Peter J. Collins, Andrew J. Terzuoli, Jr., Giuseppe Nesti, and Joaquim Fortuny. "Bistatic Scattering characterization of Complex Objects," *IEEE Transactions on Geoscience & Remote Sensing, Part I*, Vol. 38, No. 5: pp. 2078-2092 (September 2000).

TRAGESSER, STEVEN G., (ENY)

Tragesser, Steven G. and James M. Longuski. "Modeling Issues Concerning Motion of the Saturnian Satellites," *Journal of the Astronautical Sciences*, 47: 275-294 (July-Dec. 1999).

WALTERS, Lt Col MICHAEL K., (ENP)

Walters, M. K., J.D. Shull, and R.P. Asbury III. "A comparison of exhaust condensation trail forecast algorithms at low relative humidity," *Journal of Applied Meteorology*, 39: 80-91 (2000).

WOLF, PAUL J., (ENP)

*Pope, R.S., P.J. Wolf, and G.P. Perram. "Collision broadening of rotational transitions in the O₂ A band by molecular perturbers," *J. Quant Spectroscopy and Radiative Transfer*, 64: 363-377 (2000).

WOOD, AIHUA W., (ENC)

*Lair, A. V. and A. W. Wood. "Large Solutions of Semilinear Elliptic Equations with Nonlinear Gradient Terms," *International Journal of Mathematics and Mathematical Sciences*, 22: 869-883 (December 1999).

*Lair, A. V. and A. W. Wood. "Large Solutions of Sublinear Elliptic Equations," *Nonlinear Analysis*, 39: 745-753 (Spring 2000).

*Lair, A. V. and A. W. Wood. "Existence of Entire Large Positive Solutions of Semilinear Elliptic Systems," *Journal of Differential Equations*, 164: 380-394 (Summer 2000).

Ammari, H., G. Bao, and A. Wood. "An integral equation method for the electromagnetic scattering from cavities," *Mathematical Methods in the Applied Sciences*, 23: 1057-1072 (2000).

YEO, YUNG KEE, (ENP)

*Johnstone, D. K., Y. K. Yeo, R. L. Hengehold, and G. W. Turner. "Control of Surface States in $\text{GaSb}/\text{Al}_x\text{Ga}_{1-x}\text{As}_y\text{Sb}_{1-y}/\text{Ga}_x\text{In}_{1-x}\text{Sb}/\text{Al}_x\text{Ga}_{1-x}\text{As}_y\text{Sb}_{1-y}$ Quantum Well Structures," *Appl. Phys. Lett.* 75: 779-2781 (1999).

*Ahoujja, M., Y.K. Yeo, M.R.Smith, R.L. Hengehold, G.S. Pomrenke, and Jim Huffman. "Hall coefficient singularity observed from p-SiGeC grown on n⁻-Si substrate," *Compound Semiconductors 1999*, Berlin, Germany, 1999; Inst. Phys. Conf. Ser No. 166, (Institute of Physics, Bristol and Philadelphia, 2000): pp. 161-164 (2000).

*Ahoujja, M., Y. K. Yeo, R. L. Hengehold, G. S. Pomrenke, D. C. Look, and Jim Huffman. "Electrical properties of boron doped p-SiGeC grown on n⁻-Si substrate," *Appl. Phys. Lett.* 77: 1327-1329 (2000).

3.6 OTHER PUBLICATIONS

[*Denotes duplicate entry, multiple faculty authors.]

ADVANCED STUDIES IN AIR MOBILITY

(NOTE: The Graduate Program in Mobility Management (GMO) is designed specifically for personnel of the Air Mobility Command, and students in the GMO program write graduate research papers supporting topics of interest to AMC. Their papers are not included in the research summaries presented in Sections 1.2 –1.4 of this report.)

Bauer, M. *Yokota C-130's Becoming Airland Only*. AFIT/GMO/ENS/00E-1. Faculty Advisor: Maj Stephen M. Swartz, DSN: 785-6565 EXT 4285.

Bush, T. *DIRMOBFOR and Humanitarian Relief Operations*. AFIT/GMO/ENS/00E-2. Faculty Advisor: Dr. William A. Cunningham, DSN: 785-6565 EXT 4283.

Danigole, M. *Implementing Electronic Data Interchange to Provide Increased In-Transit Visibility*. AFIT/GMO/ENA/00E-3. Faculty Advisor: Dr. D. Kirk Vaughan.

DeLapp, J. *The Use of Collaborative Planning Tools to Speed the Crisis Deployment Process*. AFIT/GMO/ENS/00E-4. Faculty Advisor: Lt Col Alan W. Johnson, DSN: 785-6565 EXT 4284.

Diaz, A. *Transporting Government Agencies on Department of Defense Aircraft*. AFIT/GMO/ENA/00E-5. Faculty Advisor: Dr. D. Kirk Vaughan, DSN: 785-4943 EXT 3312.

Johnson, T. *Strategic Airlift Hub-and-Spoke; an Interim Solution to C-5 Woes*. AFIT/GMO/ENS/00E-6. Faculty Advisor: Lt Col Raymond R. Hill, DSN: 785-6565 EXT 4327.

Nicholls, K. *Logistical Support of Air Reserve Component Mobility Rainbow Units*. AFIT/GMO/ENS/00E-7. Faculty Advisor: Lt Col Alan W. Johnson, DSN: 785-6565 EXT 4384.

Payne, J. *Comparative Study of KC-135 Operations in Vietnam, Desert Storm, Allied Force*. AFIT/GMO/ENS/00E-8. Faculty Advisor: Maj Marvin A. Arostegui, DSN: 785-6565 EXT 4333.

Pehrson, C. *Bare Beach Logistics-Over-the-Shore: An Outdated Concept?* AFIT/GMO/ENS/00E-9. Faculty Advisor: Maj Paul M. Thurston, DSN: 785-6565 EXT 4315.

Sheppard, J. *How to Organize the TACC Flight Dispatch Function under the M2K Initiative*. AFIT/GMO/ENS/00E-10. Faculty Advisor: Dr. William A. Cunningham, DSN: 785-6565 EXT 4283.

Sones, D. *CONUS Rail Capability in Support of Army Heavy Unit Moves from "Fort to Sea Ports of Embarkation"*. AFIT/GMO/ENS/00E-11. Faculty Advisor: Dr. William A. Cunningham, DSN: 785-6565 EXT 4283.

Watt, B. *ITV/AIT...Satellite Tracking of Assets/Personnel*. AFIT/GMO/ENS/00E-12. Faculty Advisor: Dr. William A. Cunningham, DSN: 785-6565 EXT 4283.

Williams, N. *Use of Trans-Atmospheric Travel to Enhance Global Mobility*. AFIT/GMO/ENS/00E-13. Faculty Advisor: Maj Stephen M. Swartz, DSN: 785-6565 EXT 4285.

BAILEY, Lt Col T. GLENN, (ENS)

*Salah, Moataz, Richard A. Raines, Michael A. Temple, and T. Glenn Bailey, "A General Interleaver for Equal and Unequal Error Protections for Turbo Codes with Short Frames," IEEE International Conference on Information Technology: Coding and Computing, pp. 408-411, Las Vegas NV, 27-29 March 2000.

*Salah, Moataz, Richard A. Raines, Michael A. Temple, and T. Glenn Bailey, "Energy Allocation Strategies for Turbo Codes with Short Frames," IEEE International Conference on Information Technology: Coding and Computing, pp. 412-415, Las Vegas NV, 27-29 March 2000.

BAILEY, WILLIAM F., (ENP)

Bailey, W. F., and Smithtro, C.G., "Solutions to the Spatially Inhomogeneous Boltzmann Equation in Rare Gases and Rare Gas – Molecular Gas Mixtures," Bulletin of the American Physical Society, Vol. 44, No. 4, Oct 1999.

BAKER, WILLIAM P., (ENC)

*Baker, W. P., G. Li, and L. W. Burggraf, "Photothermal Spectroscopy Based on a Multilayer Reed Probe for Chemical Detection," Proceedings of SPIE, 181-186. Orlando, FL: April 2000.

BAUER, KENNETH W., JR. (ENS)

*Laine, T.I., Bauer, K.W., and J.W. Lanning, "Multiple Crewmember Workload Classification using Neural Networks with Input Feature Selection," *Intelligent Engineering Systems through Artificial Neural Networks*, Proceedings of Artificial Neural Networks in Engineering (ANNIE) International Conference, St. Louis, MO, 7-10 Nov 1999.

*Alsing, S.G., Bauer, K.W., and Oxley, M.E. "Convergence of Receiver Operating Characteristic Curves and the Performance of Artificial Neural Networks," *Intelligent Engineering Systems through Artificial Neural Networks*, Proceedings of Artificial Neural Networks in Engineering (ANNIE) International Conference, St. Louis, MO, 7-10 Nov 1999.

*McLarney, Edward L., J.O. Miller, Kenneth Bauer, Jr., and Robert Fancher, "Modeling Leadership and Recruit Type in an Army Recruiting Station," Proceedings of the Winter Simulation Conference, Phoenix, AZ, 5-8 Dec 1999.

S.G. Alsing, K. W. Bauer, and E.P. Blasch, "Three-dimensional (3-D) Receiver Operating Characteristic (ROC) Concepts for the Evaluation of Target Recognition Algorithms Faced with the Unknown Target Detection Problem," *Automatic Target Recognition IX*, Orlando, FL, April 7-9, 1999.

E.P. Blasch, S.G. Alsing, and K.W. Bauer, "Comparison of Bootstrap and Prior-probability Synthetic Data Balancing Methods for SAR Target Recognition," *Algorithms for Synthetic Aperture Radar Imagery VI*, Orlando, FL, April 5-9, 1999

BLECKMANN, CHARLES A. (ENV)

*Burggraf, L.W., C.A. Bleckmann, D. Eastwood, G. Li and Wm. Baker; "Infrared detection of volatile compounds from microorganisms," Chemical and Biological Sensing, SPIE Aerosense, Orlando FL, 25 April 2000.

BROTHERS, Maj CHARLES P., (ENG)

Barnhart, David, Paul Duggan, Bruce Suter, Charles Brothers, and Kenneth Stevens, "Total Ionizing Dose Characterization of a Commercially Fabricated Asynchronous FFT for Space Applications," Proceedings of the Hardened Electronics and Radiation Technology Conference, Anaheim CA, 15 March 2000.

BURGGRAF, LARRY W., (ENP)

Mayfield, H.T., D. Eastwood, and L.W. Burggraf, "Classification of Infrared Spectra of Organophosphorus Compounds with Artificial Neural Networks," AFRL-ML-TY-TP-1999-4540 (AFRL Technical Report).

*Burggraf, L.W., C.A. Bleckmann, D. Eastwood, G. Li and Wm. Baker; "Infrared detection of volatile compounds from microorganisms," Chemical and Biological Sensing, SPIE Aerosense, Orlando FL, 25 April 2000.

*Li, G., L.W. Burggraf, Wm. Baker; "Photothermal spectroscopy based on multilayer reed probe," Chemical and Biological Sensing, SPIE Aerosense, Orlando FL, 25 April 2000.

CLAYPOOLE, Maj ROGER L., (ENG)

Claypoole, Roger, "Multiresolution Wedgelet Transforms for Image Processing," Proceedings of the SPIE 45th International Symposium on Optical Science and Technology, San Diego CA, August 2000.

COLLINS, Maj PETER J., (ENG):

Saville, Michael and Peter J. Collins, "High-Impedance Ground Planes: Measuring Surface Wave Suppression with Radar Cross-Section Imaging," Proceedings of the Progress in Electromagnetic Research Symposium (PIERS), p. 501, Cambridge MA, 5-14 July 2000.

*Craig, Matthew D., Peter J. Collins, and Andrew J. Terzuoli, Jr., "An Empirical Prediction Model of the Performance Impacts of Material Tolerances in Frequency Selective Surfaces Using the Monte Carlo Method," PIERS: Progress in Electromagnetics Research Symposium Proceedings, p. 578, Cambridge MA, 5-14 July 2000.

*Gabig, Sarah J., Peter J. Collins, Andrew J. Terzuoli, Jr., Giuseppe Nesti, and Joaquim Fortuny, "A Look at Monostatic to Bistatic Equivalence Theorem," PIERS: Progress in Electromagnetics Research Symposium Proceedings, Cambridge MA, 5-14 July 2000.

*Akers, Geoffrey A., Peter J. Collins, Andrew J. Terzuoli, Jr., Krisha Pasala, and Robert B. Penno, "Low-Band Direction Finding Using an Ensemble of Antennas," PIERS: Progress in Electromagnetics Research Symposium Proceedings, p. 574, Cambridge MA, 5-14 July 2000.

*Gabig, Sarah J., Kelce S. Wilson, Peter J. Collins, Andrew J. Terzuoli, Jr., Giuseppe Nesti, and Joaquim Fortuny, "Validation of Near-Field Monostatic to Bistatic Equivalence Theorem," Proceedings of the IEEE 2000 International Geoscience and Remote Sensing Symposium, Vol. III, pp. 1012-1014, Honolulu HI, 24-28 July 2000.

*Rupert, Scott P., Greg S. Agnes, Peter J. Collins, Andrew J. Terzuoli, Jr., and Kelce S. Wilson, "Comparisons of Control Surface Electromagnetic Scattering Mechanisms," Proceedings of the 46th Annual Tri-Service Radar Symposium, Air Force Academy, Colorado Springs CO, 27-29 June 2000.

CUNNINGHAM, WILLIAM A. (ENS)

W.A. Cunningham and Y. Chan, "An Econometric Study of Intrastate vs. Interstate Regulatory Reforms" Proceedings of the Annual Meeting of the Transportation Research Board, Winter 2000.

DECKRO, RICHARD F., (ENS)

*Deckro, Richard F., Jack M. Kloeber, Jr., Gregory S. Parnell, and Jack A. Jackson, "Cyber-Research Road Warriors: Rules of the Road", *The Proceedings of the Twenty-Ninth Annual Meeting of the Western Decision Science Institute*, (2000), pp. 610 - 614.

*Hamill, Capt J. Todd, Richard F. Deckro, LTC Jack M. Kloeber "A Strategy for Information Assurance", AFIT Technical Report CMSA/TR2000-03, September 2000.

*Emslie, 2Lt Paul D., LTC Jack M. Kloeber, Jr., Richard F. Deckro, "Multi-Objective Evaluation of Target Sets for Logistic Networks", AFIT Technical Report CMSA TR/00-01, May 2000.

DELOACH, Maj SCOTT A., (ENG)

DeLoach, Scott A., *Specifying Agent Behavior as Concurrent Tasks: Defining the Behavior of Social Agents*. Technical Report, Air Force Institute of Technology, AFIT/EN-TR-00-03, July 2000.

DeLoach, Scott A. and Mark Wood, *Multiagent Systems Engineering: the Analysis Phase*. Technical Report, Air Force Institute of Technology, AFIT/EN-TR-00-02, June 2000.

DeLoach, Scott A. and Mark Wood, "Developing Multiagent Systems with agentTool," Proceedings of the Seventh International Workshop on Agent Theories, Architectures, and Languages. (ATAL-2000), Boston MA, 7-9 July 2000.

Lacey, Timothy H. and Scott A. DeLoach, "Verification of Agent Behavioral Models," Proceedings of the 2000 International Conference on Artificial Intelligence (IC-AI'2000), pp. 557-564, CSREA Press, Las Vegas NV, 2000.

Wood, Mark and Scott A. DeLoach, "An Overview of the Multiagent Systems Engineering Methodology," Proceedings of the First International Workshop on Agent-Oriented Software Engineering (AOSE-2000), Limerick, Ireland, 10 June 2000.

Lacey, Timothy H. and Scott A. DeLoach, "Automatic Verification of Multiagent Conversations," Proceedings of the Eleventh Annual Midwest Artificial Intelligence and Cognitive Science Conference, pp. 93-100, AAAI Press, Fayetteville AK, 2000.

Smith, Jeffrey, Mieczyslaw Kokar, Kenneth Baclawski, and Scott A. DeLoach, "Category Theoretic Approaches of Representing Precise UML Semantics," Proceedings of the ECOOP'2000 Workshop on Defining Precise Semantics for UML, Sophia Antipolis, France, 13 June 2000.

*McDonald, J. Todd, Michael L. Talbert, and Scott A. DeLoach, "Heterogeneous Database Integration Using Agent Oriented Information Systems," Proceedings of the 2000 International Conference on Artificial Intelligence (IC-AI'2000), pp. 1359-1366, CSREA Press, Las Vegas NV, 2000.

FRANKE, MILTON E. (ENY)

Corneille, J. and Milton E. Franke, "Wind Tunnel Tests of a Joined-Wing Missile Model," Paper No. AIAA 2000-0938, AIAA 38th Aerospace Sciences Meeting and Exhibit, Reno, NV, 10-13 January 2000.

Matuszak, Alan M. and Milton E. Franke, "Lean Space Range Scheduling Operations," Paper No. AIAA 2000-5182, AIAA Space 2000 Conference & Exposition, Long Beach, CA, 19-21 September 2000.

GALLAGHER, Lt Col MARK A. (ENS)

- * Gallagher, Mark A. and James T. Moore, "Operations Research 101: Focus on the Decision," *Phalanx, The Bulletin of Operations Research*, Vol. 33. No. 1, Military Operations Research Society (MORS) and Military Application Society (MAS), March, 2000, pp. 14-15, 20.

GOLTZ, MARK N. (ENV)

Ferland, D.R., K.G. Boggs, S. Niekamp, J.A. Christ, A. Agrawal, and M.N. Goltz. "Chlorinated Hydrocarbon Treatment Using a Horizontal Flow Treatment Well System," *Physical and Thermal Technologies: Remediation of Chlorinated and Recalcitrant Compounds*, G.B. Wickramanayake and A.R. Gavaskar, Eds., pp. 253-260, Battelle Press, Columbus, OH, 2000.

S. Niekamp, K.G. Boggs, M.N. Goltz, A. Agrawal. "Bench-scale Investigation of Catalytic Dehalogenation of Chlorinated Ethenes with Palladium metal: Reaction By-Products," *Preprints of Extended Abstracts, 220th National Meeting of the American Chemical Society*, 40(2):59-62, Washington DC, 20-24 August 2000.

GUSTAFSON, STEVEN C., (ENG)

Gustafson, Steven C., Crabtree, Peter N., and Ryan Thomas, "Vision-Based Super-Resolution for Recognizing Small Targets," *Proceedings of the SPIE*, Vol. 4048, No. 69, Orlando FL, April 2000.

Magnus, Amy L. and Steven C. Gustafson, "Inquisitive Pattern Recognition," *Proceedings of the International Fusion Conference*, Paris, France, July 2000.

HENGHELD, ROBERT L., (ENP)

- *Weeks, D.E., S. Yang, R.L. Hengehold and M.A. Marciniak, "Mid-Infrared Quantum Well Research at AFIT," *Solid State and Diode Laser Technology Review Technical Digest*, Albuquerque NM, June 5-8, 2000.

HILL, Lt Col RAYMOND R., (ENS)

- *Hill, R. and G. McIntyre. 2000. *A Methodology for Robust, Multi-Scenario Optimization*. *Phalanx*, Vol 33, No. 3, September 2000.

- *Tighe, T., R. Hill, and G. McIntyre. *A Decision for Strategic Effects: A Conceptual Approach to Effects Based Targeting*. *Aerospace Power Chronicles*, <http://www.airpower.maxwell.af.edu/airchronicles/air-chronicles.html>, September 2000.

Gaupp, Martin P and Raymond R. Hill. Using Adaptive Agents in Java to Simulate U.S. Air Force Pilot Retention. *Proceedings of the 1999 Winter Simulation Conference*, eds. P.A. Farrington, H.H. Nembhard, D.T. Sturrock, and G.W. Evans. 1152-1159. Institute of Electrical and Electronics Engineers, Phoenix, AZ, 1999.

Hill, Raymond R. A Monte Carlo Study of Genetic Algorithm Initial Population Generation Methods. *Proceedings of the 1999 Winter Simulation Conference*, eds. P.A. Farrington, H.H. Nembhard, D.T. Sturrock, and G.W. Evans. 543-547. Institute of Electrical and Electronics Engineers, Phoenix, AZ, 1999.

HOLT, Capt DANIEL T., (ENV)

Holt, Daniel T. "The factors that influence an individual's readiness for change: An empirical examination," *Proceedings of the Annual Meeting of the Southern Management Association*. 104-107. Atlanta, GA: Omnipress, 1999.

Holt, Daniel T., and Mitchell Crocker. "Prior negative experiences: Their impact on computer training outcomes," *Proceedings of the Annual Meeting of the Southern Management Association*. Atlanta, GA: Omnipress, 1999.

KLOEBER, LTC JACK M., (ENS)

*Deckro, Richard F., Jack M. Kloeber, Jr., Gregory S. Parnell, and Jack A. Jackson, "Cyber-Research Road Warriors: Rules of the Road", *The Proceedings of the Twenty-Ninth Annual Meeting of the Western Decision Science Institute*, (2000), pp. 610 - 614.

*Hamill, Capt J. Todd, Richard F. Deckro, LTC Jack M. Kloeber "A Strategy for Information Assurance", AFIT Technical Report CMSA/TR2000-03, September 2000.

Klimack, LTC William and LTC Jack M. Kloeber Jr., "Decision Analysis for Ft. Jackson's Program of Instruction", Technical Report CMSA TR/00-02, July 2000.

*Emslie, 2Lt Paul D., LTC Jack M. Kloeber, Jr., Richard F. Deckro, "Multi-Objective Evaluation of Target Sets for Logistic Networks", AFIT Technical Report CMSA TR/00-01, May 2000.

LAMONT, GARY B., (ENG)

Lamont, Gary B., David VanVeldhuizen, and Robert Marmelstein, "A Distributed Architecture for a Self-Adaptive Computer Virus Immune System," *New Ideas in Optimization*, McGraw-Hill Ltd., pp. 167-184, 1999.

Lamont, Gary B. and David VanVeldhuizen, "Multiobjective Optimization with Messy Genetic Algorithms," *Proceedings of ACM Symposium on Applied Computing*, pp. 470-476, Lake Como, Italy, 19-21 March 2000.

Lamont, Gary B. and James Douglas, "Unifying Traditional Software Engineering Methods for Effective Distributed Object System Design," *Proceedings of the Parallel and Distributed Processing Techniques and Applications Conference (PDPTA2000)*, Las Vegas NV, 26-30 June 2000.

Lamont, Gary B. and Paul Harmer, "An Agent Based Architecture for a Computer Virus Immune System," *Proceedings of the 2000 Genetic and Evolutionary Computation Conference (GECCO2000)*, Las Vegas NV, 8-13 July 2000.

Lamont, Gary B. and David VanVeldhuizen, "Measuring Multiobjective Evolutionary Algorithm Performance," *Proceedings of the Congress on Evolutionary Computation (CEC2000)*, San Diego CA, 16-19 July 2000.

Lamont, Gary B. and Ergin Sezer, "Multicriteria Mission Route Planning with Multiple Aircraft & Targets Using Parallelized A* Search Algorithm," *15th International Conference on Multiple Criteria Decision Making*, Istanbul, Turkey, 10-14 July 2000.

Lamont, Gary B., Jesse Zydallis, and David Van Veldhuizen, "Messy GA Based Multi-Objective Optimization: A Comparative Statistical Analysis," *6th Parallel Programming Systems in Nature (PPSN) Conference Workshop*, Paris, France, 16-20 September 2000.

*Magee, Eric P., David Strong, and Gary B. Lamont, "Implementation and Test of Wave Optics Code Using Parallel FFT Algorithms," *2000 EOS/SPIE Symposium on Remote Sensing*, Barcelona, Spain, 25-29 September 2000.

LANNING, Maj JEFFREY W., (ENS)

*Laine, T.I., Bauer, K.W., and J.W. Lanning, "Multiple Crewmember Workload Classification using Neural Networks with Input Feature Selection," *Intelligent Engineering Systems through Artificial Neural Networks*, *Proceedings of Artificial Neural Networks in Engineering (ANNIE) International Conference*, St. Louis, MO, 7-10 Nov 1999.

LIEBST, BRADLEY S., (ENY)

Liebst, B. S., "Pilot-Induced Oscillations (PIO): Causes and Corrections", Proceedings of the Japan Society for Aeronautical and Space Sciences 13th International Session of the 37th Aircraft Symposium, Tokyo, Japan, 13-15 October 1999.

LOTT, Lt Col JAMES A., (ENG)

Lott, James A., "Quantum Dot Microlasers Emitting at 1.3 μm ," Proceedings, Center for Novel Optoelectronic Materials, Stanford University, Stanford CA, 27 Sep 00.

Lott, James A., Michael J. Noble, Edward M. Ochoa, and William D. Cowan, "Tunable Red Vertical Cavity Surface Emitting Lasers Using Flexible Micro-Electro-Mechanical Top Mirrors," Proceedings of the IEEE/LEOS Optical MEMS 2000, Koloa, Hawaii, 20-24 August 2000.

Lott, James A., Nikolai Ledentsov, Viktor M. Ustinov, and Dieter Bimberg, "Vertical Cavity Surface Emitting Lasers with InAs-InGaAs Quantum Dot Active Regions on GaAs Substrates Emitting at 1.3 μm ," Proceedings of the 17th IEEE International Semiconductor Laser Conference, Monterey CA, 25-29 September 2000.

Noble, Michael J., Paul Sotirelis, James A. Lott, and John P. Loehr, "Optical Physics of Thin, Thick, and Tapered Oxide VCSELs," SPIE 3944-27, Proceedings of Photonics West '00, San Jose CA, 22-28 January 2000.

Ledentsov, Nikolai, Dieter Bimberg, Viktor Ustinov, James A. Lott, and Zhores Alferov, "Quantum Dot Lasers: The Promises Come to Reality," Third SANKEN International Symposium (Advanced Nanoelectronics: Devices, Materials, and Computing), Paper S7-2, Osaka University, Osaka, Japan, 14-15 March 2000.

Ustinov, Viktor, Nikolai Ledentsov, Zhores Alferov, James A. Lott, and Dieter Bimberg, "Long Wavelength Quantum Dot Lasers on GaAs Substrates," Proceedings of the 8th International Symposium Nanostructures: Physics and Technology, St. Petersburg, Russian Federation, 19-23 June 2000.

Ustinov, Viktor M., Alexey E. Zhukov, Alexey R. Kovsh, Nikolai A. Maleev, Sergey S. Mikhlin, Boris V. Volovik, Yuri G. Musikhin, Yuri M. Shernyakov, Mikhail V. Maximov, Andrey F. Tsatsul'nikov, Nikolai N. Ledentsov, Zhores I. Alferov, James A. Lott, and Dieter Bimberg, "1.3 μm InAs/GaAs Quantum Dot Lasers and VCSELs Grown by Molecular Beam Epitaxy," Proceedings of the 11th International Conference on Molecular Beam Epitaxy, Beijing, China, 10-15 September 2000.

MAGEE, Maj ERIC P., (ENG)

*Magee, Eric P., David Strong, and Gary B. Lamont, "Implementation and Test of Wave Optics Code Using Parallel FFT Algorithms," 2000 EOS/SPIE Symposium on Remote Sensing 25-29 September 2000.

MALL, SHANKAR, (ENY)

Lykins, C. D., Mall, S. and Jain, V., "Effects of Contact Conditions on Fretting Fatigue Life," 1999 International Mechanical Engineering Congress & Exposition, 14-19 November 1999, Nashville, TN.

Iyer, K. and Mall, S., "Effects of Contact Parameters on Fretting Fatigue," 1999 International Mechanical Engineering Congress & Exposition, 14-19 November 1999, Nashville, TN.

Lykins, C. D., Mall, S. and Jain, V., "Prediction of Fretting Crack Initiation Based on the Plane of Maximum Shear Stress Amplitude," Proceeding of AIAA/ASME/ASCE/AHS/ASC, Structures, Structural Dynamics and Material Conference, 3-6 April 2000, Atlanta, GA.

Lykins, C. D., Mall, S. and Jain, V., "A Shear Based Criterion for Fretting Fatigue Crack Initiation," Proc. of 5th National Turbine Engine High Cycle Fatigue Conference, 7-9 March 2000, Phoenix, AZ.

Gao, X. L. and Mall, S., "Analytical Solution for a Cracked Mosaic Model of Woven Fabric Composites," Proceeding of AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Material Conference, 3-6 April 2000, Atlanta, GA.

Hamrick, J. L., Mall, S. and Nicholas, T., "The Effects of Foreign Object Damage from Small Hard Particles on the High Cycle Fatigue Life of Ti-6AL-4V," Proceeding of 5th National Turbine Engine High Cycle Fatigue Conference, 7-9 March 2000, Phoenix, AZ.

Yang, B. and Mall, S., "Modeling of Stress-Strain Hysteresis Behavior in Brittle Matrix Composites Under Cyclic Loading," Proceeding Of International Conference on Computing and Science 2000, University of California at Los Angeles, Los Angeles, CA, 21-25 August 2000.

Namjoshi, S. A. and Mall, S., "Fretting Behavior of Ti-6Al-4V under Combined High Cycle and Low Cycle Fatigue," International Conference On Fatigue Damage of Structural Materials III, at Hyannis, MA, 17-22 September 2000

MARCINIAK, Lt Col MICHAEL A., (ENP)

*Weeks, D.E., S. Yang, R.L. Hengehold and M.A. Marciniak, "Mid-Infrared Quantum Well Research at AFIT," Solid State and Diode Laser Technology Review Technical Digest, Albuquerque NM, June 5-8, 2000.

MATHEWS, KIRK A., (ENP)

Wittig, Mark P., Kirk A. Mathews, and Mark A. Suriano, "Fortran 95 / HPF Parallel Implementation of a Weighted-Average-Flux Blast Code with TVD Flux Limiters and Dimensional Splitting", Proceedings of the Sixteenth International Symposium on Military Aspects of Blast and Shock (MABS-16). 81-88. Ministry of Defense, Cranfield University, Royal Military College of Science, 2000.

MATHIAS, Maj KARL S., (ENG)

Hendrix, T. Dean, James H. Cross II, Karl S. Mathias, and Larry A. Barowski, "Software Visualization and Measurement in Software Engineering Education," Proceedings of Frontiers in Education 1999 (FIE'99) CD-ROM, San Juan, Puerto Rico, 10-13 November 1999.

MAYBECK, PETER S., (ENG)

Fisher, Kenneth A. and Peter S. Maybeck, "Multiple Model Adaptive Estimation with Filter Spawning," Proceedings of the 2000 American Control Conference, Chicago IL, June 2000.

Vasquez, Juan R. and Peter S. Maybeck, "Density Algorithm Based Moving-Bank MMAE," Proceedings of the 1999 Conference on Decision and Control, pp. 4117-4122, Phoenix AZ, December 1999.

*Vanek, Barry J., Peter S. Maybeck, and John F. Raquet, "GPS Signal Offset Detection and Noise Strength Estimation in a Parallel Kalman Filter Algorithm," Proceedings of the 1999 ION GPS-99 Conference, pp. 2243-2252, Nashville TN, December 1999.

McINTYRE, Lt Col GREGORY, (ENS)

*Hill, R. and G. McIntyre. 2000. *A Methodology for Robust, Multi-Scenario Optimization*. Phalanx, Vol 33, No. 3, September 2000.

*Tighe, T., R. Hill, and G. McIntyre. *A Decision for Strategic Effects: A Conceptual Approach to Effects Based Targeting*. Aerospace Power Chronicles, <http://www.airpower.maxwell.af.edu/airchronicles/air-chronicles.html>, September 2000.

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

*McLarney, Edward L., J.O. Miller, Kenneth Bauer, Jr., and Robert Fancher, "Modeling Leadership and Recruit Type in an Army Recruiting Station," Proceedings of the 1999 Winter Simulation Conference, Phoenix, AZ, 5-8 Dec 1999.

MILLER, Lt Col MIKEL M., (ENG)

Corbell, Phillip, and Mikel M. Miller, "Design and Analysis of a Matlab Based Digitized IF GPS Signal Simulator and a Simulink Based Configurable GPS Receiver," Proceedings of the ION GPS-2000 Conference, September 2000.

Miller, Casey C., Mikel M. Miller, and John Agnew, "A Novel GPS Based Training Device to Improve Track and Cross Country Training Effectiveness," Proceedings of ION GPS-2000, September 2000.

*Miller, Mikel M., Phillip Corbell, and John F. Raquet, "Design and Validation of Digitized Intermediate Frequency GPS Signal and Receiver Software Models for Developing and Comparing Advanced GPS Receiver Technologies," Proceedings of ION GPS-2000, September 2000.

MOORE, JAMES T., (ENS)

* Gallagher, Mark A. and James T. Moore, "Operations Research 101: Focus on the Decision," *Phalanx, The Bulletin of Operations Research*, Vol. 33. No. 1, Military Operations Research Society (MORS) and Military Application Society (MAS), March, 2000, pp. 14-15, 20.

MORRIS, Maj MICHAEL G., (ENV)

Morris, M., and S. Bartczak. "IT Skills in the Public Sector: Comparing the Views of Middle Managers and Their Supervisors," in *Proceedings of the AIS Americas Conference on Information Systems (AMCIS)*, Long Beach CA (August 2000).

Speier, C., and M. Morris. "Mitigating Information Overload: A Comparison of Perceptual and Textual Query Interfaces in a Decision Support Environment," in *Proceedings of the AIS Americas Conference on Information Systems (AMCIS)*, Long Beach CA (August 2000).

OXLEY, MARK E., (ENC)

Oxley, M. E. and M. A Carter, "Topological-based Capability Measures of Artificial Neural Network Architectures," Proceedings of SPIE, Applications and Science of Computational Intelligence III, 2-10. Orlando FL: April 2000.

*Oxley, M. E., T. F. Reid and B. W. Suter, "Locally Stationary Processes," Proceedings of the Tenth IEEE Workshop on Statistical Signal and Array Processing, 257-261. Pocono Manor, PA: August 2000.

*Alsing, S.G., Bauer, K.W., and Oxley, M.E. "Convergence of Receiver Operating Characteristic Curves and the Performance of Artificial Neural Networks," *Intelligent Engineering Systems through Artificial Neural Networks*, Proceedings of Artificial Neural Networks in Engineering (ANNIE) International Conference, St. Louis, MO, 7-10 Nov 1999.

PACHTER, MEIR, (ENG)

Pachter, Meir and Sal Nardi, "Stochastic Modeling in GPS Estimation Algorithms," *Advances in Intelligent Systems: Concepts Tools and Applications*, S. Tzafestas, Editor, Kluwer Academic, 1999.

Pachter, Meir and Michael Oppenheimer, "Algorithm Development for Real-Time Control of the AirBorne Laser," SPIE proceedings of the 2000 Aerosense Conference, Vol. 4043, Orlando FL, 24-28 April 2000.

Pachter, Meir and Jamey Sillence, "Loop Gain Identification for Adaptive and Reconfigurable Control," ROCOND2000 proceedings, Prague, Czech Republic, 21-23 June 2000.

Pachter, Meir and Jamey Sillence, "Loop Gain Estimation for Adaptive Control," Proceedings of the American Control Conference, Chicago IL, 28-30 June 2000.

Pachter, Meir and James Hall, "Formation Maneuvers in Three Dimensions," AIAA paper No. 2000-4372, Proceedings of the AIAA Guidance, Navigation and Control Conference, Denver CO, 9-11 August 2000.

Doman, Daniel and Meir Pachter, "Development of a Hybrid Direct-Indirect Adaptive Control System for the X-33", AIAA paper No. 2000-4156, Proceedings of the AIAA Guidance, Navigation and Control Conference, Denver CO, 9-11 August 2000.

Chandler, Phillip, Steve Rasmussen, and Meir Pachter, "UAV Cooperative Path Planning," AIAA paper No. 2000-4370, Proceedings of the AIAA Guidance, Navigation and Control Conference, Denver CO, 9-11 August 2000.

McLain, Thomas, Phillip Chandler, and Meir Pachter, "A Decomposition Strategy for Optimal Coordination of Uninhabited Air Vehicles," Proceedings of the American Control Conference, Chicago IL, 28-30 June 2000.

Singh, Sajendra, Phillip Chandler, Siva Banda, and Meir Pachter, "Adaptive Feedback Linearizing Nonlinear Close Formation Flight Control of UAVs," Proceedings of the American Control Conference, Chicago IL, 28-30 June 2000.

Singh, Sajendra, Phillip Chandler, Siva Banda, and Meir Pachter, "Input-Output Invertibility and Sliding Mode Control for Close Formation Flying," AIAA paper No. 2000-4374, Proceedings of the AIAA Guidance, Navigation and Control Conference, Denver CO, 9-11 August 2000.

PERRAM, Lt Col GLEN P., (ENP)

Orson, Jay O. and Glen P. Perram, "Collection of Infrared Detonation Signatures and Characterization of Spectral Features", Proceedings of the Workshop of Infrared Emission Measurements by FTIR, Quebec, Canada, Feb 2000.

PYATI, VITTAL, (ENG)

Pittman, Todd S., and Vittal P. Pyati, "A Climatology-Based Model for Long-Term Prediction of Radar-Beam Refraction," Proceedings of the IEEE 2000 International Radar Conference, pp. 359-364, May 2000, Alexandria, VA.

RAINES, Maj RICHARD A., (ENG)

*Swackhammer, Patrick J., Michael A. Temple, and Richard A. Raines, "Performance Simulation of a Transform Domain Communication System for Multiple Access Applications," 1999 IEEE Military Communications Conference, pp. 1-5, Atlantic City NJ, 31 October-3 November 1999.

*Salah, Moataz, Richard A. Raines, Michael A. Temple, and T. Glenn Bailey, "A General Interleaver for Equal and Unequal Error Protections for Turbo Codes with Short Frames," IEEE International Conference on Information Technology: Coding and Computing, pp. 408-411, Las Vegas NV, 27-29 March 2000.

*Salah, Moataz, Richard A. Raines, Michael A. Temple, and T. Glenn Bailey, "Energy Allocation Strategies for Turbo Codes with Short Frames," IEEE International Conference on Information Technology: Coding and Computing, pp. 412-415, Las Vegas NV, 27-29 March 2000.

RAQUET, Maj JOHN F., (ENG)

Henderson, Paul E. and John F. Raquet, "Development and Testing of a Multiple Filter Approach for Precise DGPS Positioning and Carrier-Phase Ambiguity Resolution," Proceedings of the National Technical Meeting of the Institute of Navigation, pp. 806-815, Anaheim CA, 26-28 January 2000.

*Miller, Mikel M., Phillip Corbell, and John F. Raquet, "Design and Validation of Digitized Intermediate Frequency GPS Signal and Receiver Software Models for Developing and Comparing Advanced GPS Receiver Technologies," Proceedings of ION GPS-2000, Salt Lake City UT, 20-23 September 2000.

*Vanek, Barry J., Peter S. Maybeck, and John F. Raquet, "GPS Signal Offset Detection and Noise Strength Estimation in a Parallel Kalman Filter Algorithm," Proceedings of the 1999 ION GPS-99 Conference, pp. 2243-2252, Nashville TN, December 1999.

REID, Maj THOMAS F., (ENC)

*Oxley, M. E., T. F. Reid and B. W. Suter, "Locally Stationary Processes," Proceedings of the Tenth IEEE Workshop on Statistical Signal and Array Processing, 257-261. Pocono Manor, PA: August 2000.

SPENNY, CURTIS H., (ENY)

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

Pendleton, R.R. and C.H. Spenny, "Using Unusual Vehicle Orientations to Plan Low Observable Flight Paths," Proceedings of the AIAA Missile Sciences Conference, Monterey, CA, November 2000.

TALBERT, Maj MICHAEL L., (ENG)

*McDonald, J. Todd, Michael L. Talbert, and Scott A. DeLoach, "Heterogeneous Database Integration Using Agent Oriented Information Systems," Proceedings of the 2000 International Conference on Artificial Intelligence (IC-AI'2000), pp. 1359-1366, CSREA Press, Las Vegas NV, 2000.

Kern, Sean C., M. T. Cox, and Michael L. Talbert, "A Problem Representation Approach for Decision Support Systems," Proceedings of the Midwest Artificial Intelligence and Cognitive Sciences Conference, Fayetteville AK, May 2000.

TEMPLE, Maj MICHAEL A., (ENG)

*Salah, Moataz, Richard A. Raines, Michael A. Temple, and T. Glenn Bailey, "A General Interleaver for Equal and Unequal Error Protections for Turbo Codes with Short Frames," IEEE International Conference on Information Technology: Coding and Computing, pp. 408-411, Las Vegas NV, 27-29 March 2000.

*Swackhammer, Patrick J., Michael A. Temple, and Richard A. Raines, "Performance Simulation of a Transform Domain Communication System for Multiple Access Applications," 1999 IEEE Military Communications Conference, pp. 1-5, Atlantic City NJ, 31 October-3 November 1999.

*Salah, Moataz, Richard A. Raines, Michael A. Temple, and T. Glenn Bailey, "Energy Allocation Strategies for Turbo Codes with Short Frames," IEEE International Conference on Information Technology: Coding and Computing, pp. 412-415, Las Vegas NV, 27-29 March 2000.

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

- *Craig, Matthew D., Peter J. Collins, and Andrew J. Terzuoli, Jr., "An Empirical Prediction Model of the Performance Impacts of Material Tolerances in Frequency Selective Surfaces Using the Monte Carlo Method," PIERS: Progress in Electromagnetics Research Symposium Proceedings, Cambridge MA, 5-14 July 2000.
- *Gabig, Sarah J., Peter J. Collins, Andrew J. Terzuoli, Jr., Giuseppe Nesti, and Joaquim Fortuny, "A Look at Monostatic to Bistatic Equivalence Theorem," PIERS: Progress in Electromagnetics Research Symposium Proceedings, Cambridge MA, 5-14 July 2000.
- *Akers, Geoffrey A., Peter J. Collins, Andrew J. Terzuoli, Jr., Krisha Pasala, and Robert B. Penno, "Low-Band Direction Finding Using an Ensemble of Antennas," PIERS: Progress in Electromagnetics Research Symposium Proceedings, Cambridge MA, 5-14 July 2000.
- *Gabig, Sarah J., Kelce S. Wilson, Peter J. Collins, Andrew J. Terzuoli, Jr., Giuseppe Nesti, and Joaquim Fortuny, "Validation of Near-Field Monostatic to Bistatic Equivalence Theorem," Proceedings of the IEEE 2000 International Geoscience and Remote Sensing Symposium, Vol. III, pp. 1012-1014, Honolulu HI, 24-28 July 2000.
- *Rupert, Scott P., Greg S. Agnes, Peter J. Collins, Andrew J. Terzuoli, Jr., and Kelce S. Wilson, "Comparisons of Control Surface Electromagnetic Scattering Mechanisms," Proceedings of the 46th Annual Tri-Service Radar Symposium, Air Force Academy, Colorado Springs CO, 27-29 June 2000.

TRAGESSER, STEVEN G., (ENY)

Tragesser, Steven G., "Formation Flying with Tethered Satellites," AAS/AIAA Astrodynamics Conference, August 2000.

WALTERS, MICHAEL K., (ENP)

Cloys, Kenneth P., M.K. Walters, L.K. Coleman, and W.P. Roeder, "On the use of neural networks and conditional climatology to predict peak wind speed at Cape Canaveral's Atlas launch pad. Preprints," Ninth Conference on Aviation, Range, and Aerospace Meteorology, Orland, FL, Amer. Meteor. Soc., 182-187, (2000).

WEEKS, DAVID E., (ENP)

Weeks, D.E., S. Yang, R.L. Hengehold and M.A. Marciniak, "Mid-Infrared Quantum Well Research at AFIT," Solid State and Diode Laser Technology Review Technical Digest, Albuquerque NM, June 5-8, 2000

WOOD, AIHUA W., (ENC)

Ammari, H., G. Bao, and A. Wood, "Electromagnetic Scattering from Cavities," Proceedings of Waves 2000, 211-215. Santiago de Compostela, Spain: July 2000.

Van, T. and A. Wood, "A Time-Domain Integral Equation Method for Wide-Band Scattering Problems," Proceedings of the 2000 IEEE AP-S, 175. Salt Lake City, UT: July 2000.

Wood, W. and A. Wood, "An Integral Equation Method for Electromagnetic Scattering from a Trough in a Ground Plane," Proceedings of the 2000 IEEE AP-S, 350. Salt Lake City, UT: July 2000.

3.7 SUBSTANTIAL CONSULTATIONS

[*Denotes duplicate entry, multiple faculty authors.]

AROSTEGUI, Maj MARVIN A., (ENS)

Enhancing TNMCM Forecasting for the Funding/Availability Multi-Method Allocator for Spares. Consultation for HQ USAF/ILSY.

BALDWIN, Maj RUSTY O., (ENG)

Baldwin, Rusty O., "OPNET Simulation Model of a TSC-94 Radio Terminal", Simulation Model, Air Force Communications Agency, AFCA/ITAI (Mr. Ronald Cummings), September 2000.

*Raines, Richard A. and Rusty O. Baldwin, "OPNET Modeling of Communication Devices for Incorporation into NETWARS Environment," Air Force Communications Agency, July 2000.

*Temple, Michael A., Richard A. Raines, and Rusty O. Baldwin, "Communications OPNET Modeling and Simulation Laboratory (COMSL) Development and Support," Information Technology Division, Air Force Communications Agency (AFCA/ITA), Scott AFB IL, March 2000.

CLAYPOOLE, Maj ROGER L., (ENG)

*Gustafson, Steven C., Roger L. Claypoole, and Eric P. Magee, "Novelty Recognition in Material Damage Images," unpublished report for Air Force Research Laboratory, Materials Directorate, September 2000.

*Gustafson, Steven C., Roger L. Claypoole, and Todd B. Hale, "A Competitively Evolved Probability Density for Signal Interpolation," unpublished report for Air Force Research Laboratory, Information Directorate, September 2000.

COLLINS, Maj PETER J., (ENG)

Collins, Peter J., "Wide-Band, High Impedance Ground-plane Investigation," AFRL/SNRP.

*Collins, Peter J. and Aihua Wood, "Hybrid Maxwell Solver for Wide-Band Radar Signature Prediction for LO Targets," AFRL/DAGSI.

*Terzuoli, Andrew J., Jr., Michael Temple, and Peter J. Collins, "Computer Model Simulation & Measurement Studies in Support of Bistatic RCS Characterization," AFRL/SN.

*Terzuoli, Andrew J., Jr., Greg Agnes, and Peter J. Collins, "RCS Comparison of Alternate Wing Control Surfaces," DARPA, ASC/EN, AFRL/SN, RATSCAT.

*Terzuoli, Andrew J., Jr., and Peter J. Collins, "Various Aspects of LO/CLO/CCLO," ASC/EN.

*Terzuoli, Andrew J., Jr., Michael Temple, and Peter J. Collins, "Investigation of Low-Band Direction Finding Using an Ensemble Integrated Antennas," AFRL/SN.

DECKRO, RICHARD F., (ENS)

*Met request to participate in an Information Assurance Workshop at Naval Security Agency organized by IDA to address issues of operational testing for IA for OSD. (TDY supported by JCCWC).

*Met request to participate in an Information Assurance Workshop at JITC organized by IDA to address issues of operational testing for IA for OSD. (TDY supported by OSD OT&E).

DELOACH, Maj Scott A., (ENG)

*Jacobs, Timothy M., Scott DeLoach, Thomas Hartrum, and Michael Cox, "Graphical Interface for Agent-Based Mixed-Initiative Collaboration," (DAGSI Funded). Sponsor: AFRL/HECA.

O'Malley, Scott, Clint Sparkman, Kevin Anchor, Athie Self, Barry Secrest, and Scott A. DeLoach did a Case Study: "Autonomous Unmanned Tactical Aircraft Development—A Multiagent System Approach," Report to AFRL/VACC, August 2000.

*Talbert, Michael L., Scott A. DeLoach, and Thomas C. Hartrum, "An Agent-Based Methodology for Integrating Heterogeneous Resources," AFRL/SNAS.

FRANKE, MILTON E., (ENY)

Franke, M. E., ASME International (Committee on Planning and Organization), 16-17 November 1999, 16-18 March 2000, 6-7 June 2000, 21-23 September 2000.

Franke, M. E., William Walter, HYBRICRAFT technology, 1 May 2000.

Franke, M. E., John Han, Aerodynamics of swept wings, 26 May 2000.

Franke, M. E., Thomas D. Radcliff, University of Akron and P. Ponnappan, AFRL, Cooling for high power electronics, 12 Oct 1999.

Franke, M. E., Roland J. Watts, AFRL/MLBC, Heat transfer, 12 April 2000.

Franke, M. E., Michael Dunn, Ohio State University, Turbojet engine health monitoring system, 10 December 1999.

Franke, M. E., Chris H. Snyder, AFRL/VAAA, Aerodynamic ground effects, 1 February 2000.

GUSTAFSON, STEVEN C., (ENG)

Gustafson, Steven C., "Probability Densities for Sequential Pattern Recognition," unpublished report for Air Force Research Laboratory, Information Directorate, August 2000.

*Gustafson, Steven C., Roger L. Claypoole, and Eric P. Magee, "Novelty Recognition in Material Damage Images," unpublished report for Air Force Research Laboratory, Materials Directorate, September 2000.

*Gustafson, Steven C., Roger L. Claypoole, and Todd B. Hale, "A Competitively Evolved Probability Density for Signal Interpolation," unpublished report for Air Force Research Laboratory, Information Directorate, Sep 00.

Learn, Andrew W. and Steven C. Gustafson, "SAR Target Pose Estimation Using Adaptive Networks," unpublished report for Air Force Research Laboratory, Sensors Directorate, May 2000.

Huether, Brian, Steven C. Gustafson, and Randy Broussard, "Wavelet Pre-Processing for High Range Resolution Radar Classification," unpublished report for Air Force Research Laboratory, Sensors Directorate, June 2000.

HARTRUM, THOMAS C., (ENG)

*Jacobs, Timothy M., Scott DeLoach, Thomas Hartrum, and Michael Cox, "Graphical Interface for Agent-Based Mixed-Initiative Collaboration," (DAGSI Funded). Sponsor: AFRL/HECA

*Talbert, Michael L., Scott A. DeLoach, and Thomas C. Hartrum, "An Agent-Based Methodology for Integrating Heterogeneous Resources," AFRL/SNAS.

HILL, Lt Col RAYMOND R., (ENS)

Provided statistical consultations to Kelley Logistics Support Systems, Fairborn Ohio-based company under contract with AFRL/HESS

Provided consultation support to AFRL/HESS in support of their Theater Distribution Management System initiative.

JACOBS, Lt Col TIMOTHY M., (ENG)

Jacobs, Timothy M., “Visual Tools for Accessing Intelligence Data in Project Broadsword,” Air Force Research Laboratory (AFRL/IFED).

Jacobs, Timothy M., “Airlift Flow Model Visualization,” Air Mobility Command (HQ AMC/XPY).

Jacobs, Timothy M., “Visual Integration of Planning Data and Chemical Plume Analysis,” Air Force Research Laboratory (AFRL/IFTC).

Jacobs, Timothy M., “Visual Collaborative Training,” \$10K funded through Education and Training Technology Applications Program (ETTAP). Sponsor: HQ AETC/XP.

*Jacobs, Timothy M., Scott DeLoach, Thomas Hartrum, and Michael Cox, “Graphical Interface for Agent-Based Mixed-Initiative Collaboration,” (DAGSI Funded). Sponsor: AFRL/HECA

JODOIN, Maj VINCENT J., (ENP)

Advised DTRA/CPWE on capabilities and possible improvements to current and future nuclear weapon fallout models.

KLOEBER, LTC JACK M., JR., (ENS)

Traveled to a DARPA special meeting on Information Assurance , Science and Engineering Tools, for 1 week in July 2000.

*Met request to participate in an Information Assurance Workshop at Naval Security Agency organized by IDA to address issues of operational testing for IA for OSD. (TDY supported by JCCWC)

*Met request to participate in an Information Assurance Workshop at JITC organized by IDA to address issues of operational testing for IA for OSD. (TDY supported by OSD OT&E)

Co-taught a 1 week short course to the Joint Warfare Analysis Center analysts on Multiple Objective Decision Analysis, June 4- June 9 2000.

Decision Analysis for Ft. Jackson’s Program of Instruction, AORS, October, 1999, LTC W. Klimack and LTC J. Kloeber.

LAMONT, GARY B., (ENG)

Lamont, Gary B. and Robert Linderman, “Parallel/Distributed Real-Time Digital Signal Processing.” Sponsor: AFRL/IF.

Lamont, Gary B. and Robert Ewing, “Methodology and Implementations for C4ISR Systems.” Sponsor: AFRL/SN.

Lamont, Gary B. and Ruth Pachter, “Material Structure Prediction Using Evolutionary Algorithms.” Sponsor: AFRL/ML.

LOTT, Lt Col JAMES A., (ENG)

Lott, James A., "Design, Growth, Fabrication, and Characterization of Microcavity Laser Diodes," AFRL/SND.

MAGEE, Maj ERIC P., (ENG)

*Gustafson, Steven C., Roger L. Claypoole, and Eric P. Magee, "Novelty Recognition in Material Damage Images," unpublished report for Air Force Research Laboratory, Materials Directorate, September 2000.

MATHIAS, Maj KARL S., (ENG)

*Talbert, Michael L. and Karl S. Mathias, "Object-Based Extensible Data Model for the Next Generation Electronic Warfare Integrated Reprogrammable DB (NGE)," NAIC/TAER.

MAYBECK, PETER S., (ENG)

Maybeck, Peter S., "Multiple Model Algorithms Applied to Sensor/Actuator Failure Detection and Controller Reconfiguration for Survivable Flight Controller Design," AFRL/VAC.

Maybeck, Peter S., "Detection/Compensation of Jamming/Spoofing of GPS-Aided Inertial Navigation Systems," AFRL/SNAR.

MORRIS, Maj MICHAEL G., (ENV)

Morris, M. Served as systems design consultant for human-computer interaction/usability issues for Project Majel, an artificial intelligence Y2K web-enabled search system, sponsor: Air Force Communications Agency (AFCA), Scott AFB IL (1999-2000).

Morris, M. Served as Air Force "subject matter expert" for the development of three information systems courses designed to support the Defense Leadership and Management Program (DLAMP) for senior DoD civilians, sponsor: DoD Civilian Personnel Management Service (Winter 2000).

PACHTER, MEIR, (ENG)

Consultant to AFRL/VACA and member of the AFRL/VACA AFOSR Star Team.

RAINES, Maj RICHARD A., (ENG)

*Raines, Richard A. and Rusty O. Baldwin, "OPNET Modeling of Communication Devices for Incorporation into NETWARS Environment," Air Force Communications Agency, July 2000.

*Temple, Michael and Richard A. Raines, "Communications OPNET Modeling and Simulation Laboratory (COMSL) Development and Support," Information Technology Division, Air Force Communications Agency (AFCA/ITA), October 1999.

*Temple, Michael A., Richard A. Raines, and Rusty O. Baldwin, "Communications OPNET Modeling and Simulation Laboratory (COMSL) Development and Support," Information Technology Division, Air Force Communications Agency (AFCA/ITA), Scott AFB IL, March 2000.

TALBERT, Maj MICHAEL L., (ENG)

Talbert, Michael L., consultant to the C2BL for data interoperability, transmission, and access issues. Support the \$700K acquisition efforts of the C2BL to obtain a proof of concept of a Joint Air Operations Center Information Visualization Environment (JIVE) toolset.

Talbert, Michael L., consultant to the DARPA sponsored Deployment Object Working Group (DOWG) which is to facilitate communication and information sharing among the projects and stakeholders concerned with the evolution of the legacies related to the Time Phased Force and Deployment Data.

Talbert, Michael L., "Database Interoperability Consulting for Joint Air Operations Center Information Viewing Environment (JIVE). Providing service to the visualization efforts for the Command and Control Battlelab's Intelligence-Surveillance, Reconnaissance Battle Management (ISRBM), Dynamic Replanning (DR), and Federated Assessment and Targeting Enhancements (FATE) initiatives.

*Talbert, Michael L. and Karl S. Mathias, "Object-Based Extensible Data Model for the Next Generation Electronic Warfare Integrated Reprogrammable DB (NGE)," NAIC/TAER.

*Talbert, Michael L., Scott A. DeLoach, and Thomas C. Hartrum, "An Agent-Based Methodology for Integrating Heterogeneous Resources," AFRL/SNAS.

TEMPLE, MICHAEL A., (ENG)

Temple, Michael A., Technical Support: "Transform Domain Communication System Development," Air Force Research laboratory (AFRL/SNRW), October 1999.

Temple, Michael A., Technical Support: "Electronic Warfare Advanced Technology Development," Sensor Applications and Demonstrations Division, Sensors Directorate, Air Force Research Laboratory (AFRL/SNZ), October 1999.

*Temple, Michael and Richard A. Raines, "Communications OPNET Modeling and Simulation Laboratory (COMSL) Development and Support," Information Technology Division, Air Force Communications Agency (AFCA/ITA), October 1999.

*Temple, Michael A., Richard A. Raines, and Rusty O. Baldwin, "Communications OPNET Modeling and Simulation Laboratory (COMSL) Development and Support," Information Technology Division, Air Force Communications Agency (AFCA/ITA), Scott AFB IL, March 2000.

*Terzuoli, Andrew J., Jr., Michael Temple, and Peter J. Collins, "Computer Model Simulation & Measurement Studies in Support of Bistatic RCS Characterization," AFRL/SN.

*Terzuoli, Andrew J., Jr., Michael Temple, and Peter J. Collins, "Investigation of Low-Band Direction Finding Using an Ensemble Integrated Antennas," AFRL/SN.

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

*Terzuoli, Andrew J., Jr., Michael Temple, and Peter J. Collins, "Computer Model Simulation & Measurement Studies in Support of Bistatic RCS Characterization," AFRL/SN.

*Terzuoli, Andrew J., Jr., Greg Agnes, and Peter J. Collins, "RCS Comparison of Alternate Wing Control Surfaces," DARPA, ASC/EN, AFRL/SN, RATSCAT.

*Terzuoli, Andrew J., Jr., and Peter J. Collins, "Various Aspects of LO/CLO/CCLO," ASC/EN.

*Terzuoli, Andrew J., Jr., Michael Temple, and Peter J. Collins, "Investigation of Low-Band Direction Finding Using an Ensemble Integrated Antennas," AFRL/SN.

TURCOTTE, JEFFREY S., (ENY)

Turcotte, Jeffrey S., Transient analysis of a solar thermal orbit transfer vehicle for reflector focus performance.

Sponsor: AFRL/PR (Edwards AFB). 1 October 1998 – Present.

WIESEL, WILLIAM E., (ENY)

Wiesel, William E., “Space Maneuver Vehicle Operations Planner,” software system for exploring Space Maneuver Vehicle Operational Concepts.

WOOD, AIHUA W., (ENC)

*Collins, Peter J. and Aihua Wood, “Hybrid Maxwell Solver for Wide-Band Radar Signature Prediction for LO Targets,” AFRL/DAGSI.

3.8 PRESENTATIONS

[*Denotes duplicate entry, multiple faculty authors.]

AROSTEGUI, Maj MARVIN A., (ENS)

Arostegui, Marvin A. "La Gerencia de la Logística," Talks given at The Center for Hemispheric Defense Studies Seminar, Washington DC, 1-2 Feb 00, 3-5 Apr 00, 19-20 Sep 00.

BAILEY, Lt Col T. GLENN, (ENS)

*O' Rourke, K. P., T. G. Bailey, R. Hill., and W. B. Carlton "Dynamic Routing of Unmanned Aerial Vehicles Using Reactive Tabu Search", 68th MORS Symposium, US Air Force Academy, June 2000.

*Salah, Moataz, Richard A. Raines, Michael A. Temple, and T. Glenn Bailey, "Energy Allocation Strategies for Turbo Codes with Short Frames," IEEE International Conference on Information Technology: Coding and Computing, Las Vegas NV, 27-29 March 2000.

*Salah, Moataz, Richard A. Raines, Michael A. Temple, and T. Glenn Bailey, "A General Interleaver for Equal and Unequal Error Protections for Turbo Codes with Short Frames," IEEE International Conference on Information Technology: Coding and Computing, Las Vegas NV, 27-29 March 2000.

BAILEY, WILLIAM F., (ENP)

Bailey, W. F., and Smithtro, C.G., "Solutions to the Spatially Inhomogeneous Boltzmann Equation in Rare Gases and Rare Gas – Molecular Gas Mixtures," 52nd Annual Gaseous Electronics Conference, Norfolk, VA, 5-8 Oct 1999.

BAKER, WILLIAM P., (ENC)

*Li, G., L. W. Burggraf, and W. P. Baker, "Photothermal Spectroscopy Based on a Multilayer Reed Probe for Chemical Detection," SPIE's Aerospace/Defense Sensing, Simulation, and Controls, (Poster Session). Orlando, FL. April 2000.

BLECKMANN, CHARLES A., (ENV)

*Burke, B.W., D.L. Kellner, C.A. Bleckmann, E.C. Heyse, and M.N. Goltz. "Aircraft deicing agent biodegradation in soils: Laboratory studies," Society for Environmental Toxicology and Chemistry 20th Annual Meeting, Philadelphia PA, 14 - 18 November 1999.

BRADY, Maj STEPHAN P., (ENS)

Brady, Stephan P. "Multi-Echelon Reordering With Competing Policies" Presented at the Multi-Echelon Inventory Conference, University of Michigan, Ann Arbor, 25 Jun 2000.

BROTHERS, Maj CHARLES P., (ENG)

Barnhart, David, Paul Duggan, Bruce Suter, Charles Brothers, and Kenneth Stevens, "Total Ionizing Dose Characterization of a Commercially Fabricated Asynchronous FFT for Space Applications," Hardened Electronics and Radiation Technology Conference, Anaheim CA, 15 March 2000.

BURGGRAF, LARRY W., (ENP)

*Li, G., L. W. Burgraf, and W. P. Baker, "Photothermal Spectroscopy Based on a Multilayer Reed Probe for Chemical Detection," SPIE's Aerospace/Defense Sensing, Simulation, and Controls, (Poster Session). Orlando, FL, April 2000.

CHAMBAL, Capt STEPHEN P., (ENS)

J. Bert Keats and Stephen Chambal. "TTF vs. TBF in Reliability Analysis; Removing Doubt and Confusion," Fall Technical Conference, Houston, Oct 99.

CHILTON, Lt Col LAWRENCE K., (ENC)

Chilton, L. K., "Spatial (Eulerian) Formulation for Nearly Incompressible Elasticity," AFRL/AFOSR Contractors and Grantees Meeting, Stanford University, June 2000.

CHRISSIS, JAMES W., (ENS)

*Calhoun, Kevin M., Richard F. Deckro, James T. Moore, James W. Chrissis, and John Van Hove, "Project Planning and Re-Planning", INFORMS Salt Lake City, May 2000.

CLAYPOOLE, Maj ROGER L., (ENG)

Claypoole, Roger, "Multiresolution Wedgelet Transforms for Image Processing," SPIE 45th International Symposium on Optical Science and Technology, San Diego CA, August 2000.

COLLINS, Maj PETER J., (ENG)

*Craig, Matthew D., Peter J. Collins, and Andrew J. Terzuoli, Jr., "An Empirical Prediction Model of the Performance Impacts of Material Tolerances in Frequency Selective Surfaces Using the Monte Carlo Method," PIERS: Progress in Electromagnetics Research Symposium, Cambridge MA, 5-14 July 2000.

*Gabig, Sarah J., Peter J. Collins, Andrew J. Terzuoli, Jr., Giuseppe Nesti, and Joaquim Fortuny, "A Lookat Monostatic to Bistatic Equivalence Theorem," PIERS: Progress in Electromagnetics Research Symposium, Cambridge MA, 5-14 July 2000.

*Akers, Geoffrey A., Peter J. Collins, Andrew J. Terzuoli, Jr., Krishna Pasala, and Robert B. Penno, "Low-Band Direction Finding Using an Ensemble of Antennas," PIERS: Progress in Electromagnetics Research Symposium, Cambridge MA, 5-14 July 2000.

*Gabig, Sarah J., Kelce S. Wilson, Peter J. Collins, Andrew J. Terzuoli, Jr., Giuseppe Nesti, and Joaquim Fortuny, "Validation of Near-Field Monostatic to Bistatic Equivalence Theorem," IEEE 2000 International Geoscience and Remote Sensing Symposium, Honolulu HI, 24-28 July 2000.

*Rupert, Scott P., Greg S. Agnes, Peter J. Collins, Andrew J. Terzuoli, Jr., and Kelce S. Wilson, "Comparisons of Control Surface Electromagnetic Scattering mechanisms," 46th Annual Tri-Service Radar Symposium, Air Force Academy, Colorado Springs CO, 27-29 June 2000.

DECKRO, RICHARD F., (ENS)

*Hamill, Capt J. Todd, Dr. Richard F. Deckro, LTC Jack M. Kloeber, Jr., and Col. T. S. Kelso, "The Value of Information in a Defense System", AFORS 2000, Air Force Operations Research Symposium, Colorado Springs, September 2000.

*Winthrop, Major Michael, LTC Jack M. Kloeber, Jr., and Richard F. Deckro, "VA/AFIT Technology Evaluation Study", AFORS 2000, Air Force Operations Research Symposium, Colorado Springs, September 2000.

Parnell, Gregory S., Richard F. Deckro, and Col Michael McGinnis, "Information Operations – Opportunities for Operations Research", 5th Canada/US Army Operational Research Symposium, Quebec City, Quebec, August 2000.

*Renfro, Robert, Richard F. Deckro, and Jack M. Kloeber, Jr., "Modeling Social Networks", 68th MORS Symposium, June 2000.

*Hamill, J. Todd, Richard F. Deckro, and Jack M. Kloeber, Jr., "IA Strategy Evaluation Using Value Focused Thinking", 68th MORS Symposium, June 2000.

*Gallan, Roger, Jack M. Kloeber, Jr. and Richard F. Deckro, "Building and Evaluating a Multiple Objective Portfolio A Case Study", 68th MORS Symposium, June 2000.

*Emslie, Paul, Jack M. Kloeber, Jr. and Richard F. Deckro, "Selecting the Best Target Set for LOC Network Attack", 68th MORS Symposium, June 2000.

*Calhoun, Kevin M., Richard F. Deckro, James T. Moore, James W. Chrissis, and John Van Hove, "Project Planning and Re-Planning", INFORMS Salt Lake City, May, 2000.

*Deckro, Richard F., and Jack M. Kloeber, Jr., and J. Todd Hamill, "IA Modeling", DARPA/IASET Kick-Off Meeting, April, 2000.

*Hamill, J. Todd, Richard F. Deckro, and Jack M. Kloeber, Jr., "Considerations in Modeling Information Assurance: Some Preliminary Results and Questions", INFORMS Philadelphia, November 1999.

DELOACH, Maj SCOTT A., (ENG)

DeLoach, Scott A. and Mark Wood, "Developing Multiagent Systems with agentTool," Seventh International Workshop on Agent Theories, Architectures, and Languages. (ATAL-2000), Boston MA, 7-9 July 2000.

Lacey, Timothy H. and Scott A. DeLoach, "Verification of Agent Behavioral Models," 2000 International Conference on Artificial Intelligence (IC-AI'2000), Las Vegas NV, 2000.

Wood, Mark and Scott A. DeLoach, "An Overview of the Multiagent Systems Engineering Methodology," First International Workshop on Agent-Oriented Software Engineering (AOSE-2000), Limerick, Ireland, 10 Jun 00.

Lacey, Timothy H. and Scott A. DeLoach, "Automatic Verification of Multiagent conversations," Proceedings of the Eleventh Annual Midwest Artificial Intelligence and Cognitive Science Conference, Fayetteville AK, 2000.

Smith, Jeffrey, Mieczyslaw Kokar, Kenneth Baclawski, and Scott A. DeLoach, "Category Theoretic Approaches of Representing Precise UML Semantics," ECOOP'2000 Workshop on Defining Precise Semantics for UML, Sophia Antipolis, France, 13 June 2000.

*McDonald, J. Todd, Michael L. Talbert, and Scott A. DeLoach, "Heterogeneous Database Integration Using Agent Oriented Information Systems," 2000 International Conference on Artificial Intelligence (IC-AI'2000), Las Vegas NV, 2000.

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," Air Force Operations Research Symposium (AFORS), United States Air Force Academy, Colorado, September 14-15, 2000.

*Cullenbine, Christopher A, Mark A. Gallagher, and James T. Moore, "A Tabu Search Approach to the Weapons Assignment Model," Military Operations Research Society (MORS) Symposium, United States Air Force Academy, Colorado, June 20-22, 2000.

*Anthony W. Snodgrass, Mark A. Gallagher, Gregory A. McIntyre, and Jack M. Kloeber "Leontief Modeling for Military Strategic Effects," Military Operations Research Society (MORS) Symposium, United States Air Force Academy, Colorado, June 20-22, 2000.

Charles S. Tapp and Mark A. Gallagher, "BRAC to the Future," Military Operations Research Society (MORS) Symposium, United States Air Force Academy, Colorado, June 20-22, 2000.

GOLTZ, MARK N., (ENV)

Niekamp, S.W., K.G. Boggs, M.N. Goltz, and A. Agrawal. "Bench-scale investigation of catalytic dehalogenation of chlorinated ethenes with palladium metal: Reaction by-products," 220th National Meeting of the American Chemical Society, Washington DC, 20-24 August 2000.

Goltz, M.N. and K.J. Williamson. "Transfer and commercialization of contaminated groundwater remediation technologies," Tech Transfer 2000 Seminar/Workshop, Waikoloa, HI, 16-17 August 2000.

Gandhi, R.K., M.N. Goltz, S.M. Gorelick, G.D. Hopkins, and P.L. McCarty. "Design of a field demonstration of bio-enhanced in-well vapor stripping to treat trichloroethylene contamination," Hazardous Substance Research Centers Research Symposium, Asilomar Conference Center, CA, 9-12 July 2000.

Ferland, D.R., K.G. Boggs, S. Niekamp, J.A. Christ, A. Agrawal, and M.N. Goltz. "Chlorinated hydrocarbon treatment using a horizontal flow treatment well system," The Second International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey CA, 22-25 May 2000.

Gandhi, R.K., M.N. Goltz, P.L. McCarty, and S.M. Gorelick. "Design of a field demonstration of bio-enhanced in-well vapor stripping to treat trichloroethylene contamination," Partners in Environmental Technology Technical Symposium and Workshop, Arlington VA, 30 November - 2 December 1999.

*Burke, B.W., D.L. Kellner, C.A. Bleckmann, E.C. Heyse, and M.N. Goltz. "Aircraft deicing agent biodegradation in soils: Laboratory studies," Society for Environmental Toxicology and Chemistry 20th Annual Meeting, Philadelphia PA, 14 - 18 November 1999.

GUSTAFSON, STEVEN C., (ENG)

Gustafson, Steven C., "Blameless Neural Networks," presented to the IEEE Computer Society, Dayton OH, August 2000.

HENGEGHOLD, ROBERT L., (ENP)

- *McFall, J.L., R. L. Hengehold, Y. K. Yeo, and J. E. Van Nostrand. "Optical Investigation of MBE Grown Si-Doped $\text{Al}_x\text{Ga}_{1-x}\text{N}$ as a Function of Nominal Al Mole Fraction up to 0.5%," presented at the 11th International Conference on Molecular Beam Epitaxy, held in Beijing, China on September 10-15, 2000.
- *Ahoujja, M., Y.K. Yeo, R.L. Hengehold, and G.S. Pomerence. "Electrical properties of boron doped p-SiGeC grown on n-Si substrate," presented at the Fall 1999 Meeting of the Ohio Section of the American Physical Society, held in Dayton, OH, 8-9 October 1999.
- *Guido, L.J., P. Mitev, M. Gherasimova, B. Gaffey, M. Ahoujja, and Y.K. Yeo, "Isoelectronic doping of GaN with arsenic," presented at the 6th Wide Bandgap and Nitride Workshop, held in Richmond, VA, 15-17 March 2000
- *Ahoujja, M., Y.K. Yeo, R.L. Hengehold, L. J. Guido, D. K. Johnstone, and Y.H. Kim. "Electrical properties of arsenic doped GaN films grown by MOCVD," presented at the March 2000 Meeting of the American Physical Society, held in Minneapolis, Minnesota, 20-24 March 2000.
- *Kim, Y.H., M. Ahoujja, Y.K. Yeo, R.L. Hengehold, L. J. Guido, and D. K. Johnstone. "Photocapacitance transient study of arsenic doped GaN," presented at the March 2000 Meeting of the American Physical Society, held in Minneapolis, Minnesota, 20-24 March 2000
- *Ahoujja, M., Y. K. Yeo, R. L. Hengehold, L. J. Guido, P. Mitev, D. K. Johnstone, and Y. H. Kim, "Influence of arsenic doping on the electrical properties of GaN epitaxial layers grown by MOCVD," presented at the 11th International Semiconducting and Insulating Materials Conference, held in Canberra, Australia on July 3-7, 2000.
- *Cooley, W.T., M.A. Marciniak, R.L. Hengehold, Y.K. Yeo and G.W. Turner, "Radiative Recombination Dynamics in InAsSb Quantum-Well Lasers." 1999 Fall Meeting, Ohio Section of the American Physical Society/Southern Ohio Section AAPT, Wright-State University, Dayton, OH, 9 October 1999.
- * Weeks, D.E., S. Yang, R.L. Hengehold and M.A. Marciniak, "Mid-Infrared Quantum Well Research at AFIT," ARFL SSDLTR, Albuquerque NM, June 5-8, 2000.
- * Yang, S., D.E. Weeks, R.L. Hengehold, and M.R. Gregg, "Inter-subband Absorption Coefficients of [001] and [110] Si/SiGe Quantum Wells," APS March meeting, Minneapolis MN, March 20-24, 2000.
- * Yang, S., D.E. Weeks, and R.L. Hengehold, "Dispersion Relations and Optical Properties of Quantum Well Heterostructures," Fall OSAPS meeting, Dayton OH, Oct 8-9, 1999.

HILL, Lt Col RAYMOND R., (ENS)

- Hill, Raymond. " Monte Carlo Study of Genetic Algorithm Initial Population Generation Methods" 1999 Winter Simulation Conference, Phoenix AZ, December 1999.
- Gaupp, Martin P. and Raymond Hill. "Using Adaptive Agents in Java to Simulate U.S. Air Force Pilot Retention", 1999 Winter Simulation Conference, Phoenix AZ, December 1999.
- *Hill, Raymond, Reginald Festejo, and J. O. Miller, "Modeling the Modular Aircraft Support System for Improved Air Force Logistics", Industrial Engineering Research Conference 2000, Cleveland OH, 23 May 2000.
 - *Hill, Raymond R., Greg McIntyre, Barry Bennett. "A Methodology and Experiment Using Robust, Multi-Scenario Optimization Techniques", 68th MORS Symposium, US Air Force Academy, June 2000.
 - *Bullock, Kelly, Greg McIntyre, and Raymond Hill "HITM: An Investigation into the Relationship Between Strategic Effects and OODA Loops", 68th MORS Symposium, US Air Force Academy, June 2000.

*O' Rourke, K. P., T. G. Bailey, R. Hill., and W. B. Carlton "Dynamic Routing of Unmanned Aerial Vehicles Using Reactive Tabu Search", 68th MORS Symposium, US Air Force Academy, June 2000.

*Capehart, Shay, James Moore, and Raymond Hill, "Quick Look Too for Tanker Mission Planning", Military Operations Research Society Symposium, United States Air Force Academy, CO, 20-22 Jun 00.

*Hall, Shane, James Moore, and Raymond Hill, "A Group Theoretic Tabu Search Approach to the Air Mobility Command Routing Problem", Military Operations Research Society Symposium, United States Air Force Academy, CO, 20-22 Jun 00.

*Harder, Robert, Gary Kinney, Raymond Hill, and James Moore, "A Quick-Running Routing Algorithm for UAV Reconnaissance Operations", Military Operations Research Society Symposium, United States Air Force Academy, CO, 20-22 Jun 00.

*Rebulanan, Rene, J.O. Miller, and Raymond Hill, "Modeling the Joint Strike Fighter's Autonomic Logistics System," IERC, Cleveland, Ohio, 23 May 2000.

HOLT, Capt DANIEL T., (ENV)

Holt, Daniel T. "The measurement of readiness for change: A review of instruments and suggestions for future research." Paper presented at the Annual meeting of the Academy of Management, Toronto, Canada. 9 August 2000.

JACOBS, Lt Col TIMOTHY M., (ENG)

Jacobs, Timothy M., "Airborne Without Leaving the Ground: Airdrop Visualizatin in a Virtual Environment," invited presentation at Dayton Chapter meeting of SAFE Association, March 2000.

JODOIN, Maj VINCENT J., (ENP)

Jodoin, V.J. "Improvement of the Nuclear Weapon Source Model for the Hazard Prediction and Assessment Capability Code," Invited, AFRL/AFOSR Contractors/Grantees Meeting, Computational and Applied Mathematics, Stanford University, Stanford, CA, 28-30 Jun 2000.

JOHNSON, Lt Col ALAN W., (ENS)

*Guarnieri, Gorge, Stephen M. Swartz, and Alan W. Johnson, "Maintenance Resources Evaluation Technique," Presentation at the 68th MORS Symposium, United States Air Force Academy, 21 June 2000.

*Johnson, Alan W. and Stephen M. Swartz, "Mission Resources Value Assessment Technique," Presentation at the 68th MORS Symposium, United States Air Force Academy, 21 June 2000.

KELSO, Col T.S. (ENS)

*Hamill, Capt J. Todd, Dr. Richard F. Deckro, LTC Jack M. Kloeber, Jr., and Col. T. S. Kelso, "The Value of Information in a Defense System", AFORS 2000, Air Force Operations Research Symposium, Colorado Springs, September 2000.

KLOEBER, LTC JACK M., JR., (ENS)

*Hamill, Capt J. Todd, Dr. Richard F. Deckro, LTC Jack M. Kloeber, Jr., and Col. T. S. Kelso, "The Value of Information in a Defense System", AFORS 2000, Air Force Operations Research Symposium, Colorado Springs, September 2000.

- *Winthrop, Major Michael, LTC Jack M. Kloeber, Jr., and Richard F. Deckro, "VA/AFIT Technology Evaluation Study", AFORS 2000, Air Force Operations Research Symposium, Colorado Springs, September 2000.
- *Snodgrass, Anthony W., Mark A. Gallagher, Gregory A. McIntyre, and Jack M. Kloeber "Leontief Modeling for Military Strategic Effects," Military Operations Research Society (MORS) Symposium, United States Air Force Academy, Colorado, June 20-22, 2000.
- *Renfro, Robert, Richard F. Deckro, and Jack M. Kloeber, Jr., "Modeling Social Networks", 68th MORS Symposium, June 2000.
- *Hamill, J. Todd, Richard F. Deckro, and Jack M. Kloeber, Jr., "IA Strategy Evaluation Using Value Focused Thinking", 68th MORS Symposium, June 2000.
- *Gallan, Roger, Jack M. Kloeber, Jr. and Richard F. Deckro, "Building and Evaluating a Multiple Objective Portfolio A Case Study", 68th MORS Symposium, June 2000.
- *Emslie, Paul, Jack M. Kloeber, Jr. and Richard F. Deckro, "Selecting the Best Target Set for LOC Network Attack", 68th MORS Symposium, June 2000.
- Kloeber, Jack M. Jr., "The Military OR Curriculum Review", 2nd day of MORS Educational Symposium, 3 hour discussion and presentation, MITRE, Washington DC, April 2000.
- *Deckro, Richard F., and Jack M. Kloeber, Jr., and J. Todd Hamill, "IA Modeling", DARPA/IASET Kick-Off Meeting, April, 2000.
- *Hamill, J. Todd, Richard F. Deckro, and Jack M. Kloeber, Jr., "Considerations in Modeling Information Assurance: Some Preliminary Results and Questions", INFORMS Philadelphia, November 1999.

LAMONT, GARY B., (ENG)

- *Magee, Eric P., David Strong, and Gary B. Lamont, "Implementation and Test of Wave Optics Code Using Parallel FFT Algorithms," 2000 EOS/SPIE Symposium on Remote Sensing 25-29 September 2000.
- Lamont, Gary B. and David VanVeldhuizen, "Multiobjective Optimization with Messy Genetic Algorithms," ACM Symposium on Applied Computing, Lake Como, Italy, 19-21 March 2000.
- Lamont, Gary B. and James Douglas, "Unifying Traditional Software Engineering Methods for Effective Distributed Object System Design," Parallel and Distributed Processing Techniques and Applications Conference (PDPTA2000), Las Vegas NV, 26-30 June 2000.
- Lamont, Gary B. and Paul Harmer, "An Agent Based Architecture for a Computer Virus Immune System," of the 2000 Genetic and Evolutionary Computation Conference (GECCO2000), Las Vegas NV, 8-13 July 2000.
- Lamont, Gary B. and David VanVeldhuizen, "Measuring Multiobjective Evolutionary Algorithm Performance," Congress on Evolutionary Computation (CEC2000), San Diego CA, 16-19 July 2000.
- Lamont, Gary B. and Ergin Sezer, "Multicriteria Mission Route Planning with Multiple Aircraft & Targets Using Parallelized A* Search Algorithm," 15th International Conference on Multiple Criteria Decision Making, Istanbul, Turkey, 10-14 July 2000.
- Lamont, Gary B., Jesse Zydallis, and David Van Veldhuizen, "Messy GA Based Multi-Objective Optimization: A Comparative Statistical Analysis," 6th Parallel Programming Systems in Nature (PPSN) Conference Workshop, Paris, France, 16-20 September 2000

LIEBST, BRADLEY S., (ENY)

Liebst, B. S., "Pilot-Induced Oscillations (PIO): Causes and Corrections", Japan Society for Aeronautical and Space Sciences 13th International Session of the 37th Aircraft Symposium, Tokyo, Japan, (Invited Lecture), 13-15 October 1999.

Liebst, B. S., Saad A., Gordnier, R., Visbal, M., Beran, P., and Baker, W., "Simulation of Wing Rock Oscillations in Two DoF in Roll and Sideslip", 2000 AIAA Cincinnati-Dayton Aerospace Symposium, Dayton, Oh, 30 Mar 00.

LOTT, Lt Col JAMES A., (ENG)

Lott, James A., "Tunable Vertical Cavity Surface Emitting Lasers," Bandwidth9, Inc., 46410 Fremont Blvd, Fremont CA 94538, 27 September 2000.

Lott, James A., "Quantum Dot Microlasers Emitting at 1.3 μm ," Center for Novel Optoelectronic Materials, Stanford University, Stanford CA, 27 Sep 00.

Lott, James A., Michael J. Noble, Edward M. Ochoa, and William D. Cowan, "Tunable Red Vertical Cavity Surface Emitting Lasers Using Flexible Micro-Electro-Mechanical Top Mirrors," IEEE/LEOS Optical MEMS 2000, Koloa, Hawaii, 20-24 August 2000.

Lott, James A., Nikolai Ledentsov, Viktor M. Ustinov, and Dieter Bimberg, "Vertical Cavity Surface Emitting Lasers with InAs-InGaAs Quantum Dot Active Regions on GaAs Substrates Emitting at 1.3 μm ," 17th IEEE International Semiconductor Laser Conference, Monterey CA, 25-29 September 2000.

Noble, Michael J., Paul Sotirelis, James A. Lott, and John P. Loehr, "Optical Physics of Thin, Thick, and Tapered Oxide VCSELs," SPIE 3944-27, Photonics West '00, San Jose CA, 22-28 January 2000.

Ledentsov, Nikolai, Dieter Bimberg, Viktor Ustinov, James A. Lott, and Zhores Alferov, "Quantum Dot Lasers: The Promises Come to Reality," Third SANKEN International Symposium (Advanced Nanoelectronics: Devices, Materials, and Computing), Osaka University, Osaka, Japan, 14-15 March 2000.

Ustinov, Viktor, Nikolai Ledentsov, Zhores Alferov, James A. Lott, and Dieter Bimberg, "Long Wavelength Quantum Dot Lasers on GaAs Substrates," 8th International Symposium Nanostructures: Physics and Technology, St. Petersburg, Russian Federation, 19-23 June 2000.

Ustinov, Viktor M., Alexey E. Zhukov, Alexey R. Kovsh, Nikolai A. Maleev, Sergey S. Mikhlin, Boris V. Volovik, Yuri G. Musikhin, Yuri M. Shernyakov, Mikhail V. Maximov, Andrey F. Tsatsul'nikov, Nikolai N. Ledentsov, Zhores I. Alferov, James A. Lott, and Dieter Bimberg, "1.3 μm InAs/GaAs Quantum Dot Lasers and VCSELs Grown by Molecular Beam Epitaxy," 11th International Conference on Molecular Beam Epitaxy, Beijing, China, 10-15 September 2000.

MAGEE, Maj ERIC P., (ENG)

*Magee, Eric P., David Strong, and Gary B. Lamont, "Implementation and Test of Wave Optics Code Using Parallel FFT Algorithms," 2000 EOS/SPIE Symposium on Remote Sensing 25-29 September 2000.

MARCINIAK, MICHAEL A. (ENP)

*Cooley, W.T., M.A. Marciniak, R.L. Hengehold, Y.K. Yeo and G.W. Turner, "Radiative Recombination Dynamics in InAsSb Quantum-Well Lasers." 1999 Fall Meeting, Ohio Section of the American Physical Society/Southern Ohio Section AAPT, Wright-State University, Dayton, OH, 9 October 1999.

MATHIAS, Maj KARL S., (ENG)

Mathias, Karl S., "AFIT Research Into SUPPRESSOR Scenario Interoperability." Presented at the SUPPRESSOR User's Group Meeting, Niagra Falls NY, 13 September 2000.

Hendrix, T. Dean, James H. Cross II, Karl S. Mathias, and Larry A. Barowski, "Software Visualization and Measurement in Software Engineering Education," Frontiers in Education 1999 (FIE'99), San Juan, Puerto Rico, 10-13 November 1999.

MAYBECK, PETER S., (ENG)

Fisher, Kenneth A. and Peter S. Maybeck, "Multiple Model Adaptive Estimation with Filter Spawning," 2000 American Control Conference, Chicago IL, June 2000.

Vasquez, Juan R. and Peter S. Maybeck, "Density Algorithm Based Moving-Bank MMAE," 1999 Conference on Decision and Control, Phoenix AZ, December 1999.

*Vaneck, Barry J., Peter S. Maybeck, and John F. Raquet, "GPS Signal Offset Detection and Noise Strength Estimation in a Parallel Kalman Filter Algorithm," 1999 ION GPS-99 Conference, Nashville TN, Dec 99.

McINTYRE, Lt Col GREGORY A., (ENS)

*Bullock, Kelly, Greg McIntyre, and Raymond Hill "HITM: An Investigation into the Relationship Between Strategic Effects and OODA Loops", 68th MORS Symposium, US Air Force Academy, June 2000.

*Hill, Raymond R., Greg McIntyre, Barry Bennett. "A Methodology and Experiment Using Robust, Multi-Scenario Optimization Techniques", 68th MORS Symposium, US Air Force Academy, June 2000.

*Snodgrass, Anthony W., Mark A. Gallagher, Gregory A. McIntyre, and Jack M. Kloeber "Leontief Modeling for Military Strategic Effects," Military Operations Research Society (MORS) Symposium, United States Air Force Academy, Colorado, June 20-22, 2000.

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

*Hill, Raymond, Reginald Festejo, and J. O. Miller, "Modeling the Modular Aircraft Support System for Improved Air Force Logistics", Industrial Engineering Research Conference 2000, Cleveland OH, 23 May 2000.

*Rebulanan, Rene, J.O. Miller, and Raymond Hill, "Modeling the Joint Strike Fighter's Autonomic Logistics System," IERC, Cleveland, Ohio, 23 May 2000.

MILLER, Lt Col MIKEL M., (ENG)

Miller, Casey C., Mikel M. Miller, and John Agnew, "A Novel GPS Based Training Device to Improve Track and Cross Country Training Effectiveness," ION GPS-2000, Best Paper Presentation in the session, Sep 2000.

*Raquet, John F. and Mikel M. Miller, "GPS and GPS/INS Integration: A Tutorial," presented at the Joint Services Data Exchange for Guidance, Navigation, and Control, Norfolk VA, November 1999.

*Miller, Mikel M., Phillip Corbell, and John F. Raquet, "Design and Validation of Digitized Intermediate Frequency GPS Signal and Receiver Software Models for Developing and Comparing Advanced GPS Receiver Technologies," ION GPS-2000, Salt Lake City UT, 20-23 September 2000.

MOORE, JAMES T., (ENS)

- *Cullenbine, Christopher A, Mark A. Gallagher, and James T. Moore, “A Tabu Search Approach to the Weapons Assignment Model,” Air Force Operations Research Symposium (AFORS), United States Air Force Academy, Colorado, September 14-15, 2000.
- *Capehart, Shay, James Moore, and Raymond Hill, “Quick Look Too for Tanker Mission Planning”, Military Operations Research Society Symposium, United States Air Force Academy, CO, 20-22 Jun 00.
- *Hall, Shane, James Moore, and Raymond Hill, “A Group Theoretic Tabu Search Approach to the Air Mobility Command Routing Problem”, Military Operations Research Society Symposium, United States Air Force Academy, CO, 20-22 Jun 00.
- *Harder, Robert, Gary Kinney, Raymond Hill, and James Moore, “A Quick-Running Routing Algorithm for UAV Reconnaissance Operations”, Military Operations Research Society Symposium, United States Air Force Academy, CO, 20-22 Jun 00.
- *Cullenbine, Christopher, Mark Gallagher, and James Moore, “A Tabu Search Approach to the Weapon Assignment Model (WAM)”, Military Operations Research Society Symposium, United States Air Force Academy, CO, 20-22 Jun 00.
- *Calhoun, Kevin M., Richard F. Deckro, James T. Moore, James W. Chrissis, and John Van Hove, “Project Planning and Re-Planning”, INFORMS Salt Lake City, May, 2000.

MORRIS, Maj MICHAEL G., (ENV)

Morris, M. “Usability Evaluation in the Real World,” University of Dayton, Dayton OH, Fall 1999.

OXLEY, MARK E., (ENC)

- Oxley, M. E., “Abstract Finite Time Extinction Problems,” Southeastern Atlantic Regional Conference on Differential Equations, University of Richmond, Richmond, VA. October 1999; and at the AMS Annual meeting, Washington, D.C., January 2000.
- Oxley, M. E., “Hyperplane Arrangements (Cut the Cheese)”, Mathematics Colloquium, Sinclair Community College, Dayton, OH, February 2000.
- Oxley, M. E., “Mathematics and Air Force Problems”, D. Russell Lee Vocational School, Hamilton, OH, Apr 2000.
- Oxley, M. E., “Topological-based Capability Measures of Artificial Neural Network Architectures”, SPIE’s AeroSense, Applications and Science of Computational Intelligence, Orlando, FL, April 2000.
- Oxley, M. E., “Locally Stationary Processes,” Tenth Workshop on Statistical Signal Array Processing, (Poster session) Pocono Manor, PA, August 2000.

PACHTER, MEIR, (ENG)

- Pachter, Meir, "Stochastic Modeling – Based DGPS Position Estimation Algorithm for Satellite Clusters," California Institute of Technology, Pasadena CA, 18 May 2000.
- Pachter, Meir, "Cooperative Control of UCAVs," DAGSI Project Kickoff Meeting, AFRL/VACA, Wright-Patterson AFB OH, 28 March 2000.
- Pachter, Meir and Michael Oppenheimer, "Algorithm Development for Real-Time Control of the AirBorne Laser," 2000 Aerosense Conference, Orlando FL, 24-28 April 2000.
- Pachter, Meir and Jamey Sillence, "Loop Gain Identification for Adaptive and Reconfigurable Control," Prague, Czech Republic, 21-23 June 2000.
- Pachter, Meir and Jamey Sillence, "Loop Gain Estimation for Adaptive Control," American Control Conference, Chicago IL, 28-30 June 2000.
- Pachter, Meir and James Hall, "Formation Maneuvers in Three Dimensions," AIAA Guidance, Navigation and Control Conference, Denver CO, 9-11 August 2000.
- Doman, Daniel and Meir Pachter, "Development of a Hybrid Direct-Indirect Adaptive Control System for the X-33", AIAA Guidance, Navigation and Control Conference, Denver CO, 9-11 August 2000.
- Chandler, Phillip, Steve Rasmussen, and Meir Pachter, "UAV Cooperative Path Planning," AIAA Guidance, Navigation and Control Conference, Denver CO, 9-11 August 2000.
- McLain, Thomas, Phillip Chandler, and Meir Pachter, "A Decomposition Strategy for Optimal Coordination of Uninhabited Air Vehicles," American Control Conference, Chicago IL, 28-30 June 2000.
- Singh, Sajendra, Phillip Chandler, Siva Banda, and Meir Pachter, "Adaptive Feedback Linearizing Nonlinear Close Formation Flight Control of UAVs," American Control Conference, Chicago IL, 28-30 June 2000.
- Singh, Sajendra, Phillip Chandler, Siva Banda, and Meir Pachter, "Input-Output Invertibility and Sliding Mode Control for Close Formation Flying," AIAA Guidance, Navigation and Control Conference, Denver CO, 9-11 August 2000.

PALAZOTTO, ANTHONY N., (ENY)

- Palazotto, Anthony N. and Samir Nablousi, "Inflated Space Structural Analysis," 25th Annual Dayton-Cincinnati Aerospace Science Symposium, Dayton, OH, 30 March 2000.
- Palazotto, Anthony N. and Joshua Boatwright, "Progressive Failure of a Composite Cylindrical Shell with a Cutout Under Fatigue Loading," 25th Annual Dayton-Cincinnati Aerospace Science Symposium, Dayton, OH, 30 March 2000.
- Palazotto, Anthony N. and Frank Pai, "A Higher Order Sandwich Plate Theory Accounting for 3D Stresses," Paper #AIAA 2000-1475, 41st AIAA SDM Conference, Atlanta, GA, 3-6 April 2000.
- Palazotto, Anthony N., and Samir Nablousi, "An Investigation of Geometric Imperfections in a Parabolic Inflated Space Structure," Paper # AIAA 2000-1729, 41st AIAA SDM Conference, Atlanta, GA, 3-6 April 2000.
- Palazotto, Anthony N. and Joshua Boatwright, "Progressive Failure Analysis of a Composite Cylindrical Shell with Square Cutouts," ASCE Engineering Mechanics Conference, University of Texas, Austin, TX, 22-24 May 2000.

Palazotto, Anthony, N., and Samir Nablousi, "Damage Evolution Analysis of Composites," ASCE Engineering Mechanics Conference, University of Texas, Austin, TX, 22-24 May 2000.

Palazotto, Anthony N., and Udai Vaydia, "Processing and Characterization of Multi- Functional Distribution Space Core Sandwich Composites," International Conference of Computational Engineering and Science, Anaheim, CA, 21-25 August 2000.

PERRAM, Lt Col GLEN P., (ENP)

*Myers, J. W., G. P. Perram, and W. B. Roh, "Spatially-Resolved Temperature Diagnostic for the Chemical Oxygen-Iodine Laser", AIAA Dayton-Cincinnati Aerospace Science Symposium, Dayton, OH, 30 Mar 2000.

Orson, J. O. and G. P. Perram, "Collection of Infrared Detonation Signatures and Characterization of Spectral Features", Workshop of Infrared Emission Measurements by FTIR, Quebec, Canada, Feb 2000.

POTOCZNY, HENRY, (ENG)

Potoczny, Henry B., "The History and Practical Uses of Cryptography," Honor Seminars of Dayton, Wright-Patterson AFB OH, Spring 2000.

PYATI, VITTAL, (ENG)

Pittman, Todd S., and Vittal P. Pyati, "A Climatology-Based Model for Long-Term Prediction of Radar-Beam Refraction," IEEE 2000 International Radar Conference, Alexandria, VA, May 2000

RAINES, Maj RICHARD A., (ENG)

*Salah, Moataz, Richard A. Raines, Michael A. Temple, and T. Glenn Bailey, "Energy Allocation Strategies for Turbo Codes with Short Frames," IEEE International Conference on Information Technology: Coding and Computing, Las Vegas NV, 27-29 March 2000.

*Swackhammer, Patrick J., Michael A. Temple, and Richard A. Raines, "Performance Simulation of a Transform Domain Communication System for Multiple Access Applications," 1999 IEEE Military Communications Conference, Atlantic City NJ, 31 October-3 November 1999.

*Salah, Moataz, Richard A. Raines, Michael A. Temple, and T. Glenn Bailey, "A General Interleaver for Equal and Unequal Error Protections for Turbo Codes with Short Frames," IEEE International Conference on Information Technology: Coding and Computing, Las Vegas NV, 27-29 March 2000.

RAQUET, Maj JOHN F., (ENG)

*Raquet, John F. and Mikel M. Miller, "GPS and GPS/INS Integration: A Tutorial," presented at the Joint Services Data Exchange for Guidance, Navigation, and Control, Norfolk VA, November 1999.

Henderson, Paul E. and John F. Raquet, "Development and Testing of a Multiple Filter Approach for Precise DGPS Positioning and Carrier-Phase Ambiguity Resolution," National Technical Meeting of the Institute of Navigation, Anaheim CA, 26-28 January 2000.

*Miller, Mikel M., Phillip Corbell, and John F. Raquet, "Design and Validation of Digitized Intermediate Frequency GPS Signal and Receiver Software Models for Developing and Comparing Advanced GPS Receiver Technologies," ION GPS-2000, Salt Lake City UT, 20-23 September 2000.

Vanek, Barry J., Peter S. Maybeck, and John F. Raquet, "GPS Signal Offset Detection and Noise Strength Estimation in a Parallel Kalman Filter Algorithm," 1999 ION GPS-99 Conference, Nashville TN, December 1999.

REID, Maj THOMAS F., (ENC)

Reid, T. F. and V. G. Kulkarni, "Optimal Admission Control for Single-Buffer Markovian Systems," INFORMS Fall 1999 Meeting, Philadelphia, PA, November 1999.

ROH, W. B., (ENP)

Russell, T. H., W. B. Roh, and J. R. Marciante, "Incoherent Laser Beam Combining using Stimulated Brillouin Scattering in Multi-mode Fibers," Presented at the Solid-state and Diode Laser Technology Review (SSDLTR-2000) in Albuquerque, NM, 5-8 June 2000

* Myers, J. W., G. P. Perram and W. B. Roh, "Spatially-Resolved Temperature Diagnostic for the Chemical Oxygen-Iodine Laser," Presented at the AIAA March Symposium, Dayton, OH, 30 Mar 2000

SHELLEY, MICHAEL L., (ENV)

Shelley, Michael L. "Abiotic & Biochemical Fate & Transport of Contaminants," Joint AFRL/DAGSI Research Program Symposium 2000, Air Force Institute of Technology, Wright-Patterson AFB OH, 18 February 2000.

SWARTZ, Maj STEPHEN M., (ENS)

*Guarnieri, Gorge, Stephen M. Swartz, and Alan W. Johnson, "Maintenance Resources Evaluation Technique," Presentation at the 68th MORS Symposium, United States Air Force Academy, 21 June 2000.

*Johnson, Alan W. and Stephen M. Swartz, "Mission Resources Value Assessment Technique," Presentation at the 68th MORS Symposium, United States Air Force Academy, 21 June 2000.

TALBERT, Maj MICHAEL L., (ENG)

*McDonald, J. Todd, Michael L. Talbert, and Scott A. DeLoach, "Heterogeneous Database Integration Using Agent Oriented Information Systems," 2000 International Conference on Artificial Intelligence (IC-AI'2000), Las Vegas NV, 2000.

Kern, Sean C., Michael T. Cox, and Michael L. Talbert, "A Problem Representation Approach for Decision Support Systems," Midwest Artificial Intelligence and Cognitive Sciences Conference, Fayetteville AK, May 2000.

TEMPLE, MICHAEL A., (ENG)

*Salah, Moataz, Richard A. Raines, Michael A. Temple, and T. Glenn Bailey, "A General Interleaver for Equal and Unequal Error Protections for Turbo Codes with Short Frames," IEEE International Conference on Information Technology: Coding and Computing, Las Vegas NV, 27-29 March 2000.

*Swackhammer, Patrick J., Michael A. Temple, and Richard A. Raines, "Performance Simulation of a Transform Domain Communication System for Multiple Access Applications," 1999 IEEE Military Communications Conference, Atlantic City NJ, 31 October-3 November 1999.

*Salah, Moataz, Richard A. Raines, Michael A. Temple, and T. Glenn Bailey, "Energy Allocation Strategies for Turbo Codes with Short Frames," IEEE International Conference on Information Technology: Coding and Computing, Las Vegas NV, 27-29 March 2000.

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

- *Craig, Matthew D., Peter J. Collins, and Andrew J. Terzuoli, Jr., "An Empirical Prediction Model of the Performance Impacts of Material Tolerances in Frequency Selective Surfaces Using the Monte Carlo Method," PIERS: Progress in Electromagnetics Research Symposium, Cambridge MA, 5-14 July 2000.
- *Gabig, Sarah J., Peter J. Collins, Andrew J. Terzuoli, Jr., Giuseppe Nesti, and Joaquim Fortuny, "A Look at Monostatic to Bistatic Equivalence Theorem," PIERS: Progress in Electromagnetics Research Symposium, Cambridge MA, 5-14 July 2000.
- *Akers, Geoffrey A., Peter J. Collins, Andrew J. Terzuoli, Jr., Krisha Pasala, and Robert B. Penno, "Low-Band Direction Finding Using an Ensemble of Antennas," PIERS: Progress in Electromagnetics Research Symposium, Cambridge MA, 5-14 July 2000.
- *Gabig, Sarah J., Kelce S. Wilson, Peter J. Collins, Andrew J. Terzuoli, Jr., Giuseppe Nesti, and Joaquim Fortuny, "Validation of Near-Field Monostatic to Bistatic Equivalence Theorem," IEEE 2000 International Geoscience and Remote Sensing Symposium, Honolulu HI, 24-28 July 2000.
- *Rupert, Scott P., Greg S. Agnes, Peter J. Collins, Andrew J. Terzuoli, Jr., and Kelce S. Wilson, "Comparisons of Control Surface Electromagnetic Scattering mechanisms," 46th Annual Tri-Service Radar Symposium, Air Force Academy, Colorado Springs CO, 27-29 June 2000.

WEEKS, DAVID E., (ENP)

- *Weeks, D.E., S.Yang, R.L.Hengehold and M.A.Marciniak, "Mid-Infrared Quantum Well Research at AFIT," ARFL SSDLTR, Albuquerque NM, June 5-8, 2000.
- Weeks, D.E., S.Yang, and T.A.Niday (GAP-98M) and "Inelastic Scattering Matrix Elements for the Reaction $B(2P_{1/2}) + H_2(j=0) \rightarrow B(2P_{3/2}) + H_2(j')$," AFRL/AFOSR Molecular Dynamics Contractors' Conference, Waltham MA, May 21-24, 2000.
- Niday, T.A., S.Yang, and D.E.Weeks, "Inelastic Scattering Matrix Elements for the Reaction $B(2P_{1/2}) + H_2(j=0) \rightarrow B(2P_{3/2}) + H_2(j')$," APS March meeting, Minneapolis MN, March 20-24, 2000.
- *Yang, S., D.E.Weeks, R.L.Hengehold, and M.R.Gregg, "Inter-subband Absorption Coefficients of [001] and [110] Si/SiGe Quantum Wells," APS March meeting, Minneapolis MN, March 20-24, 2000.
- Niday, T.A. and D.E.Weeks, "Scattering Matrix Elements for the Inelastic Collision $B(2P_{1/2}) + H_2(j=0) \leftrightarrow B(2P_{3/2}) + H_2(j')$," Chemistry Department, Ohio State University, Nov 3, 1999 .
- Niday, T.A. and D.E.Weeks, "Inelastic Scattering Matrix Elements for the Reaction $B(2P_{1/2}) + H_2(j=0) \leftrightarrow B(2P_{3/2}) + H_2(j')$," Fall OSAPS meeting, Dayton OH, Oct 8-9, 1999.
- *Yang, S., D.E.Weeks, and R.L.Hengehold, "Dispersion Relations and Optical Properties of Quantum Well Heterostructures," Fall OSAPS meeting, Dayton OH, Oct 8-9, 1999.
- MacLachlan, M.J. (DS-96S) and D.E.Weeks, "A New Application of the Interaction Picture to Calculate Reactive Scattering Matrix Elements," Fall OSAPS meeting, Dayton OH, Oct 8-9, 1999.

WIESEL, WILLIAM E., (ENY)

- Wiesel, William E. "Stability Exponents and Separation of Variables as Point Properties," SIAM Conference on Applications of Dynamical Systems, August 2000.

WOLF, PAUL J., (ENP)

Wolf, P.J., "Pressure Broadening in O_2 – Temperature Diagnostic for the Chemical Oxygen-Iodine Laser System," Physics seminar, The New School of the University of South Florida, Feb 2000

Wolf, P.J., "Ionization Mechanisms in the "Combined Release and Radiation Effects Satellite" Chemical Release Experiments," US Air Force Academy physics seminar, Mar 2000.

WOOD, AIHUA W., (ENC)

Wood, A. W., "Variational and Integral Equation Methods for Electromagnetic Scattering from Cavities," Mathematics Department Colloquium, University of Cincinnati, OH. October 1999.

Wood, A. W., "Remarks on Electromagnetic Scattering from Cavities," Mathematics Club Colloquium, Loyola University, New Orleans, LA. November 1999.

Wood, A. W., "Analysis of the Electromagnetic Scattering from a Cavity in a Ground Plane," AFRL/AFOSR Electromagnetics Workshop, San Antonio, TX. January 2000.

Wood, A. W., "Analysis and Numerical Solution of Electromagnetic Scattering from Cavities," Applied Mathematics Seminar, Michigan State University, East Lansing, MI. April 2000.

Wood, A. W., "Analysis of Maxwell's Equations for Scattering Problems," Y2K International Conference on Dynamical Systems and Differential Equations, Special Session on Nonlinear Elliptic and Parabolic Equations, Kennesaw, GA, May 2000.

Wood, A. W., "Electromagnetic Scattering from Cavities," Special Session on Electromagnetic Wave Propagation, Fifth International Conference on Mathematical and Numerical Aspects of Wave Propagation (Waves 2000), Santiago de Compostela, Spain, July 2000.

Wood, A. W., "An Integral Equation Method for Electromagnetic Scattering from a Trough in a Ground Plane," 2000 IEEE Antennas and Propagation International Symposium and USNC/URSI Meeting, Salt Lake City, UT, July 2000.

Wood, A. W., "A Time Domain Integral Equation Method for Wide-band Scattering Problems." 2000 IEEE Antennas and Propagation International Symposium and USNC/URSI Meeting, Salt Lake City, UT, July 2000.

Wood, A. W., "Mathematical Modeling of Electromagnetic Cavities," Workshop on Electromagnetic and Wave Propagation (BICCP 2000), Beijing, China, July 2000.

YEO, YUNG KEE, (ENP)

- *Cooley, W.T., M.A. Marciniak, R.L. Hengehold, Y.K. Yeo and G.W. Turner, "Radiative Recombination Dynamics in InAsSb Quantum-Well Lasers." 1999 Fall Meeting, Ohio Section of the American Physical Society/Southern Ohio Section AAPT, Wright-State University, Dayton, OH, 9 October 1999.
- *Ahoujja, M., Y.K. Yeo, R.L. Hengehold, and G.S. Pomeranke. "Electrical properties of boron doped p-SiGeC grown on n-Si substrate," presented at the Fall 1999 Meeting of the Ohio Section of the American Physical Society, held in Dayton, OH, 8-9 October 1999.
- Guido, L.J., P. Mitev, M. Gherasimova, B. Gaffey, M. Ahoujja, and Y.K. Yeo, "Isoelectronic doping of GaN with arsenic," presented at the 6th Wide Bandgap and Nitride Workshop, held in Richmond, VA, 15-17 March 2000
- *Ahoujja, M., Y.K. Yeo, R.L. Hengehold, L. J. Guido, D. K. Johnstone, and Y.H. Kim. "Electrical properties of arsenic doped GaN films grown by MOCVD," presented at the March 2000 Meeting of the American Physical Society, held in Minneapolis, Minnesota, 20-24 March 2000.
- *Kim, Y.H., M. Ahoujja, Y.K. Yeo, R.L. Hengehold, L. J. Guido, and D. K. Johnstone. "Photocapacitance transient study of arsenic doped GaN," presented at the March 2000 Meeting of the American Physical Society, held in Minneapolis, Minnesota, 20-24 March 2000.
- *Ahoujja, M., Y. K. Yeo, R. L. Hengehold, L. J. Guido, P. Mitev, D. K. Johnstone, and Y. H. Kim, "Influence of arsenic doping on the electrical properties of GaN epitaxial layers grown by MOCVD," presented at the 11th International Semiconducting and Insulating Materials Conference, held in Canberra, Australia on July 3-7, 2000.
- *McFall, J.L., R. L. Hengehold, Y. K. Yeo, and J. E. Van Nostrand. "Optical Investigation of MBE Grown Si-Doped $\text{Al}_x\text{Ga}_{1-x}\text{N}$ as a Function of Nominal Al Mole Fraction up to 0.5%," presented at the 11th International Conference on Molecular Beam Epitaxy, held in Beijing, China on September 10-15, 2000.

3.9 OTHER SIGNIFICANT PROFESSIONAL ACTIVITIES

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

CLAYPOOLE, Maj ROGER L., (ENG)

Presenter of AFIT Warrior Briefing--presented to Air University Commander (AU/CC), Air Education and Training Commander (AETC/CC), Air Force Materiel Commander (AFMC/CC), Air Force Chief of Staff, and Secretary of the Air Force.

Chairman of the local chapter of IEEE Signal Processing Society.

CUNNINGHAM, WILLIAM A., (ENS)

Editorial Review Board - *Journal of Transportation Management*

Editorial Board - *Journal of Marketing Theory and Practice*.

Editorial Board - *Journal of Intermodal Logistics*.

Board of Directors - Transportation Research Forum.

Board of Directors - Tri Rivers Waterway Development Association.

DECKRO, RICHARD F., (ENS)

Associate Editor of *Military Operations Research*

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

Editorial Board of *Computers & Operations Research*

Editorial Board of *IEEE Transactions on Engineering Management*.

Chair, INFORMS Bylaws, Policies & Procedures Committee

Member - INFORMS Finance Committee

Chair, Working Group 8 Information Operations/Information Warfare, Military Operations Research Society (MORS).

Delegate, 5th Canada/US Army Operational Research Symposium, Quebec City, Quebec.

DARPA's representative at IO/IA Experimentation Round Table Discussion at NPS for planning INFOCON testing for Fleet Battle Exercise Hotel.

Participated in an Information Assurance Workshop at JITC organized by IDA to address issues of operational testing for IA for OSD at request of OSD OT&E.

Participated in the *Joint IA&S Principal Investigator Meeting* in Honolulu. The IA&S program is a DARPA research initiative, July 2000.

Attended a DARPA sponsored course conducted by Sandia National Laboratories entitled *Improving Information Assurance Design through Red Teaming*, Arlington VA, August 2000.

With Capt Laura Kleen (GOR 01M) and 2Lt Joseph Beauregard (GOR 01M) attended the *AIA Student/Faculty CyberSummit 2000* at AIA headquarters in San Antonio. This first ever summit was intended to engage academicians in the research problems at AIA. Over 50 government and academics from a variety of organizations attend the meeting, August 2000.

Invited to organize and chair MORS Symposium/Workshop entitled: OPERATIONS RESEARCH METHODS FOR INFORMATION OPERATIONS: A BATTLESPACE OF THE 21st CENTURY to be held in the fall of 2001.

GALLAGHER, Lt Col MARK A., (ENS)

Director, Military Operations Research Society, Chair Prize Committee.

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.

GUSTAFSON, STEVEN C., (ENG)

Associate Editor of *Optical Engineering*.

HALLGREN, Col WAYNE F., (EN)

Member, Applied Aerodynamics Technical Committee, AIAA

HILL, Lt Col RAYMOND R., (ENS)

Technical reviewer for the textbook *Spreadsheet Modeling and Decision Analysis*

Test bank author for textbook *Spreadsheet Modeling and Decision Analysis*.

HOUPIS, CONSTANTINE H., (ENG)

Member of the International Program Committee of the International Symposium on Quantitative Feedback Theory and Robust Frequency Domain Methods.

JACOBS, Lt Col TIMOTHY M., (ENG)

Reviewer, *SIGGRAPH 2000* Tutorials

HENGHOLD, ROBERT L. (ENP)

Member of executive committee and Honors and Awards Chair of the Ohio Section of the American Physical Society

KLOEBER, LTC JACK M., JR., (ENS)

Chosen as Eminent Engineer in the Tau Beta Pi honorary fraternity

Performed Duties as Director of the Military Operations Research Symposium

Advisor to the Decision Analysis Working Group

LIEBST, BRADLEY S., (ENY)

Member of the Dayton Area Graduate Studies Institute RESCAP Committee.

Member of the Committee to evaluate the Wright State University PhD Program.

Member of the Dayton-Cincinnati AIAA Executive Council.

Member of 2000 AIAA Dayton-Cincinnati Aerospace Symposium Committee.

Vice President of the Honors Seminars of Metropolitan Dayton.

MAGEE, Maj ERIC P., (ENG)

AFIT Signal Processing representative for the Wright State University PhD Oversight Committee.

MATHIAS, Maj KARL S., (ENG)

Member, Association for Computing Machinery.

MAYBECK, PETER S., (ENG)

Dayton Section IEEE Student Activities Chairman and member of the Section's Executive Committee (consistently since 1975).

Chaired the IEEE Dayton Section Student Branch Cross-Fertilization Meeting, enhancing the communication among area colleges and the Dayton Section.

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

Technical reviewer for the reference book *Space Systems Modeling and Simulation*.

MOORE, JAMES T. (ENS)

Associate Editor for *Military Operations Research*

AFIT lead for research consortium of University of Texas at Austin, Air Mobility Command, and AFIT.

MORRIS, Maj MICHAEL G., (ENV)

Faculty participant/advisor, 2000 AIS America's Conference Doctoral Consortium (chaired by Joe Valacich and Len Jessup).

Member, University of Dayton's MIS Advisory Board.

OXLEY, MARK E. (ENC)

Member, Alumni Board for Department of Mathematics, Physics and Geography, Cumberland College, Williamsburg, KY.

RAINES, Maj RICHARD A., (ENG)

Point of Contact, developer, and presenter of AFIT Warrior Briefing--presented to Air University Commander (AU/CC), Air Education and Training Commander (AETC/CC), Air Force Materiel Commander (AFMC/CC), Air Force Chief of Staff, and Secretary of the Air Force.

Chairman, Association of Old Crows electronic Warfare Research awards committee.

Technical Paper Referee, *IEEE Communications Letters*.

Military advisor to the Test Pilot School Selection Board.

RAQUET, Maj JOHN F., (ENG)

Central Region Vice President of the Institute of Navigation.

TALBERT, Maj MICHAEL L., (ENG)

AU/CADRE committee to automate ACSC and AFIT calls for research, course advertisement, and research publications.

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

Chapter Chair for Joint IEEE Societies APS, MTT, GRS

WIESEL, WILLIAM E., (ENY)

Wiesel, William E., Member of the Prioritization Integrated Product Team, National Reconnaissance Office.

3.10 SPECIAL AWARDS OR SPECIAL RECOGNITION

3.10.1 FACULTY

BROTHERS, Maj CHARLES P., (ENG)

Received the 1999 Myril B. Reed Best Paper Award at the 43rd Annual Mid-West Symposium on Circuits and Systems for “A Fast Low-Power Logarithm Approximation with CMOS VLSI Implementation.” Co-authors were Sam SanGregory, David Gallagher, and Robert Siferd. Conference was on 10 August 2000.

CANFIELD, Lt. Col ROBERT, (ENY)

Lt Col Robert Canfield, Associate Fellow, American Institute of Aeronautics and Astronautics, Jan 2000.

CHRISSIS, JAMES W. (ENS)

Inducted as Eminent Engineer into the Tau Beta Pi honorary fraternity.

CLAYPOOLE, Maj ROGER L., (ENG)

Company Grade Officer of the Quarter for April-June 2000.

COLLINS, Maj PETER J., (ENG)

Elected senior member of the IEEE.

Promoted to Associate Professor of Electrical Engineering.

GOLTZ, MARK N., (ENV)

Air Education and Training Command Civilian Educator of the Year, 1999.

Society of the Strategic Air Command’s Air University Faculty Excellence Award, 1999.

HARTRUM, THOMAS C., (ENG)

Received the Civilian Career Service Award and medal upon retirement.

Associate Professor Emeritus of Electrical Engineering.

KLOEBER, LTC JACK M., JR. (ENS)

Inducted as Eminent Engineer into the Tau Beta Pi honorary fraternity.

LOTT, Lt Col JAMES A., (ENG)

Engineers and Scientists Award (41st annual awards ceremony) at the Affiliate Societies Council of the Engineering and Science Foundation of Dayton, 24 February 2000.

Promoted to Professor of Electrical Engineering.

MATHIAS, Maj KARL S., (ENG)

Named 1999 Auburn University Department of Computer Science and Software Engineering Top PhD Graduate Student. Award given to the top PhD student in the department. Awarded December, 1999.

Named 1999 Auburn University outstanding PhD Graduate Student. Award presented to top ten Auburn University PhD graduate students (out of a field of 200). Awarded March, 2000.

MAYBECK, PETER S., (ENG)

Received the M. Barry Carlton Award (annual award for the most outstanding technical article published in the IEEE Transactions on Aerospace and Electronic Systems) March 2000 for the paper “Control of a Large Space Structure Using MMAE/MMAC Techniques, coauthored by Gregory J. Schiller.

Received the IEEE Third Millennium Medal (for long-term service to the profession and to IEEE) awarded in March 2000.

Award for the Best Paper in Session at the ION GPS’99 Conference in Nashville TN, for “GPS Signal Offset Detection and Noise Strength Estimation in a Parallel Kalman Filter Algorithm”. Coauthored by Barry J. Vanek, and John F. Raquet.

PACHTER, MEIR, (ENG)

Elected a Fellow of the IEEE 1 January 2000.

Received Special Award from AFRL/VA.

RAINES, Maj RICHARD A., (ENG)

Elected as a Senior Member, Institute of Electronics and Electrical Engineers (IEEE).

Military Outstanding Volunteer Service Medal recipient—awarded for outstanding long-term volunteer service to local community.

RAQUET, Maj JOHN F., (ENG)

Award for the Best Paper in Session at the ION GPS’99 Conference in Nashville TN, for “GPS Signal Offset Detection and Noise Strength Estimation in a Parallel Kalman Filter Algorithm”. Coauthored by Barry J. Vanek, and John F. Raquet.

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

AFIT Instructor of the Quarter, Fall 1999.

3.10.2 STUDENTS

Cullenbine, Christopher A, Mark A. Gallagher, and James T. Moore, “A Tabu Search Approach to the Weapons Assignment Model,” Presentation selected as Best Presentation for the Strategic Operations Working Group, 68th Military Operations Research Society Symposium, June 2000.

Gallan, Roger, Jack M. Kloeber, Jr. and Richard F. Deckro, “Building and Evaluating a Multiple Objective Portfolio A Case Study”, Presentation selected as Best Presentation for the Decision Analysis Working Group, 68th Military Operations Research Society Symposium, June 2000.

Jones, Keith W. Commandant’s Award for Best Master’s Thesis, March 2000.

Jones, Keith W. Award for Best Presentation in Structural Integrity. 2000 AIAA Symposium (Dayton section).

O' Rourke, K. P., T. G. Bailey, R. Hill., and W. B. Carlton. 2000. *Dynamic Routing of Unmanned Aerial Vehicles Using Reactive Tabu Search*. Selected for Barchi Prize by the *Military Operations Research Society*.

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, Department of Operational Sciences (AFIT/ENS); BS, United States Air Force Academy, 1976; MS, Harvard University, 1982; PhD, Harvard University, 1985. Col Andrew's areas of interest 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

AROSTEGUI, MARVIN A., Maj, Assistant Professor of Logistics Management, Department 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. Research interests include repairable inventory management, supply chain management, meta-heuristics (tabu search, simulated annealing, and genetic algorithms). Tel. (937) 255-6565, x4333 (DSN: 785-6565, x 4333), email = Marvin.Arostegui@afit.edu

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, T. GLENN, Lt Col, Assistant Professor of Operations Research, Department of Operational Sciences (AFIT/ENS); BS, United States Air Force Academy, 1978; MA, Oklahoma State University, 1982; MS, Air Force Institute of Technology, 1988; PhD, University of Texas at Austin, 1995. Lt Col Bailey's areas of interest include simulation, response surface methodology, heuristics, and stochastic programming. He is a member of the Institute for Operations Research and Management Science (INFORMS), the Society for Industrial and Applied Mathematics (SIAM), and the Military Operations Research Society (MORS).

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, x4582 (DSN: 785-3636, x4582), 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, Department 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., Maj, 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. Maj 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, Assistant 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 several articles relating to turbine cooling and compressor stability with a research emphasis on experimentation. Major Bons' previous assignment was as a research engineer in the Propulsion Directorate of Wright Laboratory where he was awarded the 1995 S.D. Heron Award for Basic Research. Tel. 937-255-3636 x4643 (DSN: 785-3636, x4643), email = Jeffrey.Bons@afit.edu

BRADY, STEPHAN P., Maj, Assistant Professor of Logistics Management, Department 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. Research interests include transportation, logistics and supply chain management, consumable and reparable inventory management, simulation, and modeling. Reassigned to the Department of Operational Sciences, Graduate School of Engineering and Management, 1999. Tel. (937) 255-6565, x 4367 (DSN: 785-6565, x 4367), 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, CHARLES P. Jr., Maj, Assistant Professor of Electrical Engineering and Chief, Electrical Engineering Division, Department of Electrical and Computer Engineering, (AFIT/ENG); BSEE, Portland State University, 1985; MS, University of Southern California, 1987; MSEE, Air Force Institute of Technology, 1990; PhD, Air Force Institute of Technology, 1994. Major Brother's research interests are focused on space electronics, high-performance low-power microelectronic circuits, semiconductor devices, and advanced silicon materials technologies. He is funded by the Air Force Research Laboratory to develop radiation tolerant microelectronics. He has authored several papers and is a senior member in the IEEE. Tel. 937-255-3636, x4618 (DSN: 785-3636, x4618), email = Charles.Brothers@afit.edu

BROTHERS, HEIDI S., Maj, Assistant Professor of Engineering and Environmental 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. Maj Brothers' research interests include air quality management, engineering management, environmental management, and environmental management in acquisition. Major Brothers is a professional engineer. Tel. 937-255-3636, x4800 (DSN: 785-3636 x4800), email = Heidi.Brothers@afit.edu

BROWN, WILLIAM M., Professor of Electrical and Computer Engineering, Department of Electrical and Computer Engineering (AFIT/ENG); BSEE, West Virginia University, 1952; MSE, 1955, Dr Eng, The John Hopkins University, 1957. Dr. Brown has over forty years of varied experience in research, teaching, management, and administration. He was the founder and President for 24 years of the Environmental Research Institute of Michigan, prior to which he was a Professor of Electrical and Computer Engineering at the University of Michigan. His research and teaching experience is extensive in remote sensor systems, random processes, and information theory. He has served as a member of the Air Force Scientific Advisory Board and the Army Science Board. Dr. Brown is a Fellow of the Institute of Electrical and Electronic Engineers and a member of the National Academy of Engineering.

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

CALICO, ROBERT A., Jr., Professor of Aerospace Engineering and Dean of Graduate School of Engineering and Management (AFIT/EN), BS, University of Cincinnati, 1966; MS, University of Cincinnati, 1968; PhD, University of Cincinnati, 1971. Dr. Calico's research interests include aircraft stability and control, analytical dynamics, stability of non-linear systems, satellite dynamics, control theory, and vibration analysis. Tel. 937-255-3025 (DSN: 785-3025), email = Robert.Calico@afit.edu

CANFIELD, ROBERT A., Lt Col, Assistant 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 fifteen 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 interests include modeling and simulation, reliability, availability, maintainability, design of experiments, and response surface methodology. Tel. 937-255-6565, x4314 (DSN: 785-6565, x4314), email = Stephen.Chambal@afit.edu

CHAN, YUPO, Professor of Operations Research; Department of Operational Sciences (AFIT/ENS); BS, Massachusetts Institute of Technology, 1967; MS, Massachusetts Institute of Technology, 1969; PhD, Massachusetts Institute of Technology, 1972. Dr. Chan's interests include transportation systems analysis, networks and combinatorial optimization, spatial-temporal analysis, traffic forecasting, multicriteria decision-making, and technology assessment. He is the author of the book, "Facility Location Transportation and Land Use: Multicriteria Analysis of Spatial-Temporal Information" and 45 refereed publications. Dr Chan was a Congressional Fellow at the Office of Technology Assessment (1979-1980). He is listed in Who's Who in Aviation and Space Technology American Men and Women of Science, Who's Who in the East (among others), and is a Fellow of the American Society of Civil Engineers.

CHILTON, LAWRENCE 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, Department 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. Areas of interest 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 (INFORMS), The Society for Industrial and Applied Mathematics (SIAM), the Military Operations Research Society (MORS), 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

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. Tel. 937-255-3636, x4612 (DSN: 785-3636, x4612), email = Peter.Collins@afit.edu

CROWN, JOHN S., Maj, Assistant Professor of Statistics, Department of Mathematics and Statistics, (AFIT/ENC); BS, Midwestern State University, 1985; MS, Air Force Institute of Technology, 1991; PhD, Texas A&M University, 1997. Maj Crown's research interests include goodness-of-fit testing, reliability testing, design of experiments, probability and statistics, sequential tests of hypotheses, order statistics, maximum likelihood estimation, Bayes estimation, nonparametric density estimation, and model building. His previous assignments include officer promotion analysis and career field force structure analysis at HQ AFPC, and aircraft weapon systems reliability, maintainability, and availability analysis at HQ AFOTEC.

CUNNINGHAM, WILLIAM A. III, Professor of Logistics Management, Department 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. Areas of interest: transportation, strategic mobility, ABC 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. Tel. 937-255-3636, x4592 (DSN: 785-3636, x4592), email = John.DAzzo@afit.edu

DECKRO, RICHARD F., Professor of Operations Research, Department of Operational Sciences (AFIT/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 an Associate 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), 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. Tel. 937-255-3636, x4581 (DSN: 785-3636 x4581), email = Scott.DeLoach@afit.edu.

DELONEY, THURMON L., II, Col, Head, 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. Tel. 937-255-2024 (DSN: 785-2024), email= Thurmon.Deloney@afit.edu

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, and engineering of complex systems. Dr. Franke has authored or co authored over 95 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, Assistant Professor of Operations Research, Department 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. Tel. 937-255-6565, x4335 (DSN: 785-6565, x4335), email = Mark.Gallagher@afit.edu

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

GRAHAM, ROBERT P., Maj, Assistant Professor of Computer Science and Engineering, Department of Electrical and Computer Engineering (AFIT/ENG); BS, Virginia Polytechnic Institute and State University, 1986; MS, Air Force Institute of Technology, 1988; PhD, Air Force Institute of Technology, 1996. Maj Graham's research interests include automated software engineering, tabu search, formal methods and algebraic methods.

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

HALLGREN, WAYNE F., Col, Associate Dean of the Graduate School of Engineering and Management, (AFIT/EN); BS, US Military Academy, 1975; MS, University of Florida, 1984; PhD, University of Maryland, 1990. Col Hallgren's research interests include applied aerodynamics and aircraft performance. He is an Associate Fellow in the American Institute of Aeronautics and Astronautics and a consultant to the U.S. Air Force Test Pilot School. Tel. 937-255-4372 (DSN: 785-4372), email = Wayne.Hallgren@afit.edu

HARITOS, GEORGE K., Col, Commandant of the Air Force Institute of Technology, (AFIT/CC); BS, Applied Mechanics, University of Illinois, Chicago, 1969; MS, Engineering Mechanics and Materials, University of Illinois, Chicago, 1970; PhD, Engineering, Structural Mechanics, Northwestern University, 1978. Colonel Haritos' research interests are in the areas of fatigue and fracture mechanics, constitutive modeling, and failure mechanisms in monolithic and multiphase materials, including fiber-reinforced composites. Colonel Haritos attended Northwestern University as a Walter P. Murphy Fellow under sponsorship by the Air Force Institute of Technology. He was designated an AFIT distinguished graduate. Colonel Haritos is an Associate Fellow of AIAA, and a member of ASME and ASEE. He has served on numerous national and international professional panels and committees, and has published over 35 technical journal articles.

HARTRUM, THOMAS C., Associate Professor Emeritus of Electrical Engineering, Department of Electrical and Computer Engineering, (AFIT/ENG); BEE, The Ohio State University, 1969; MS, The Ohio State University, 1969; MBA, Wright State University, 1979; PhD, The Ohio State University, 1973. Dr. Hartrum's research interests include parallel and distributed computing, and formal methods in software engineering. He has authored or co-authored over 20 conference and journal articles. He is currently conducting research in object-oriented modeling and formal methods in software engineering. He is a member of the IEEE. Tel. 937-255-3636, x4581 (DSN: 785-3636, x4581), email = Thomas.Hartrum@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

HENGEGHOLD, 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, Assistant Professor of Operations Research, Department 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. Maj 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, x4327 (DSN: 785-6565, x4327), email = Raymond.Hill@afit.edu

HOLT, DANIEL T., Capt, Instructor of Engineering and Environmental 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. Capt 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., Maj, Assistant Professor of Aerospace Engineering and Deputy Department Head, Department of Aeronautics and Astronautics (AFIT/ENY); BSAE, University of Texas at Austin, 1984; MSSA, University of West Florida, 1989; MSAE, Air Force Institute of Technology, 1990; PhD, Mississippi State University, 1998. His research interests include computational fluid dynamics and high-speed aerodynamics with an emphasis on aerospace vehicle applications. 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, Assistant Professor of Logistics Management and Deputy Head, Department 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 areas of interest include stochastic processes, maintainability, reliability, heuristics, and simulation analysis. Tel. 937-255-6565, x4284 (DSN: 785-6565, x4284), email = Alan.Johnson@afit.edu

KABRISKY, MATTHEW, Professor Emeritus, Department of Electrical and Computer Engineering, (AFIT/ENG); BEE, Polytechnic Institute of Brooklyn, 1951; MEE, Polytechnic Institute of Brooklyn, 1952; PhD, University of Illinois, 1964. His areas of expertise include information processing in the human central nervous system and mathematical models of the man machine interface. Dr. Kabrisky is the author and co-author of two books and 60 technical articles. He has chaired over 100 theses and dissertations in his 30+ years in the Department. Tel. 937-255-3636, 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. Tel. 937-255-2195 (DSN: 785-2195), email= TS.Kelso@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

KLOEBER, JACK M., Jr., LTC, US Army, Associate Professor of Operations Research, Department of Operational Sciences (AFIT/ENS); BS, Lehigh University, 1977; MS, Lehigh University, 1988; PhD, Georgia Institute of Technology, 1995. LTC Kloeber's research interests lie in the decision analysis area of operations research. Included in this general area are economic decision analysis, military/operational analysis, environmental technology decision analysis, resource allocation, and developing metrics for vague and ill-defined system elements. He taught the decision analysis sequence in the department.

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 a textbook as well as over 100 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, Department 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 interests include statistical aspects of simulation, design of experiments, response surface methodology, multivariate statistics, statistical process monitoring, time series analysis and forecasting. Tel. 937-255-6565, x4324 (DSN: 785-6565, x4324), email = Jeffrey.Lanning@afit.edu

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 probabilistic risk assessment, chromated primer paint toxicity, and pollution prevention 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, aircraft handling qualities. He has published over 30 articles and reports and chaired over 40 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: 785-6565, 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 computational nanoelectronics. His areas of expertise include epitaxial crystal growth, micro-fabrication, semiconductor physics and device design, and device characterization. Lt Col Lott received a 1990 Air Force Basic Research Award, a 1994 R&D 100 Award, and the 1999 IEEE Dayton Section Dr. H. V. 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 three 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, 1988; PhD, Meteorology, Texas A&M University, 1998. Lt Col Lowther's current research interests are in the field of climatology and world climate with a focus on the effects of weather and climate on DoD operations and weapon systems. Lt Col Lowther is a member of the American Meteorological Society and the Royal Geographical Society. 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., Associate 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 nuclear weapons effect simulation, and deconvolution of radiation spectra. Dr. Mathews has published 12 papers in refereed journals and 16 conference proceedings, and has chaired 25 theses and 5 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. 937-255-3636, x4716 (DSN: 785-3636, x4716), 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, x4639, (DSN: 785-3636, x 4639) email = Peter.Maybeck@afit.edu

McINTYRE, GREGORY A., Lt Col, Assistant Professor of Operations Research, Department of Operational Sciences (AFIT/ENS); BA, Washburn University, 1981; MS, Air Force Institute of Technology, 1986; PhD, George Mason University, 1999. Lt Col McIntyre's interests include simulation, genetic algorithms, neural networks, sensor management, and combat modeling.

MILLER, J. O., Lt Col, Assistant Professor of Operations Research and Deputy Head, Department 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 interests include simulation, ranking and selection, complex adaptive systems, and nonparametric statistics. Tel. 937-255-6565, x4326 (DSN: 785-6565, x4326), email = John.eduler@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 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. Tel. 937-255-6565, x4278 (DSN: 785-6565, x 4278), email = Mikel.eduler@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, Department 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 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. Tel. (937) 255-3636, x4578 (DSN: 785-3636, x4578), email = Michael.Morris@afit.edu

MURDOCK, W. PAUL, Maj, Assistant Professor of Operations Research, Department of Operational Sciences, (AFIT/ENS); BSEET, Bluefield State College, 1982; MS, Air Force Institute of Technology, 1987; PhD, Virginia Polytechnic Institute and State University, 1995. Maj Murdock's areas of interest include stochastic processes, renewal theory, maintainability, reliability, preventive maintenance planning and optimization, decision analysis and supporting systems, and simulation and statistical output analysis.

NANRY, WILLIAM P., LTC, Assistant Professor of Operations Research, Department of Operational Sciences, (AFIT/ENS); BS, United States Military Academy, 1979; MA, University of Texas at Austin, 1989; PhD, University of Texas at Austin, 1998. LTC Nanry's areas of interest include heuristics, combat modeling, campaign planning, optimization and numerical analysis. Tel. 937-255-6565, x4339 (DSN: 785-6565, x4339), email = William.Nanry@afit.edu

NORRIS, JAMES M., Col, Department Head and 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., Associate 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 145 archival technical publications and more than 300 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., Lt Col, 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. Lt Col 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. Tel. (937) 255-3636, x4799 (DSN: 785-3636, x4799). email = David.Petrillo@afit.edu

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

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

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 environmental program management. 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 developing new algorithms for solving global nonconvex optimization problems, and systems engineering. 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 = Price.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. Tel. 937-255-3636, x4536 (DSN: 785-3636, x4536), email = Michael.Susalla@afit.edu

SWARTZ, STEPHEN M., Maj, Assistant Professor of Logistics Management, Department of Operational Sciences, (AFIT/ENS); AAS, Aviation Maintenance Management, Community College of the Air Force, 1984; AS, Airport Management, Western Oklahoma State College, 1989; BPA, Professional Aeronautics (Aviation Maintenance Management), Embry-Riddle Aeronautical University, 1985; MA, Human Resources Development, Webster University, 1988; MS, Logistics Management, Air Force Institute of Technology, 1991; PhD, Business Administration, Michigan State University, 1999. Research specialties and 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. Maj Talbert's research interests include database management systems, content-based visual information retrieval, and data mining. Tel. 937-255-6565, x4280 (DSN: 785-6565, x4280), email = Michael.Talbert@afit.edu

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 (C³I), radar signal/signature processing, and Electronic Warfare (EW), as adopted by and/or transitioned to DoD and other national agencies, has provided nearly \$600K 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, 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 hazardous waste site remediation, surfactant enhanced subsurface remediation, site characterization efforts using tracers, environmental policy and 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. Tel. (937) 255-6565 x4315 (DSN: 785-6565, x4315), email = Paul.Thurston@afit.edu

TORVIK, PETER J., Professor Emeritus of Aerospace Engineering and Engineering Mechanics, Department of Aeronautics and Astronautics, (AFIT/ENY); BS, University of Minnesota, 1960; MS, University of Minnesota, 1962; PhD, University of Minnesota, 1965; BA, Wright State University, 1980. Professor Torvik is a specialist in theory of elasticity, wave propagation, shock and vibration, impact damage in aircraft systems, laser-material interactions, and aircraft survivability/ vulnerability. His primary research interests include structural dynamics, specifically, damping, impact, and penetration mechanics. Dr. Torvik is the author of some 60 technical papers and reports and 20 other publications. He served as Head of the Department of Aeronautics and Astronautics, 1980-1990. He is the recipient of the AF Meritorious Civilian Service Award and the AF Exceptional Civilian Service Award. Dr. Torvik is a Fellow of AIAA and also a Fellow of the ASME. Tel. 937-255-3636, x4740 (DSN: 785-3636, x4740), email = Peter.Torvik@afit.edu

TRAGESSER, STEVEN G., Assistant Professor of Aerospace Engineering, Department of Aeronautics and Astronautics, (AFIT/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

TURCOTTE, JEFFREY S., Lt Col, Assistant Professor of Aeronautical Engineering, Department of Aeronautics and Astronautics (AFIT/ENY); BS, University of California at Berkeley, 1982; MS, Air Force Institute of Technology, 1988; PhD, University of California at Berkeley, 1996. Lt Col Turcotte specializes in structural dynamics, but is also interested in structural theories and elasticity.

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

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 dependant 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., Capt, 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 or 18 years. Tel. 937-255-6565, x4312 (DSN: 785-6565, x4312), email = William.Wiesel@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

YEO, YUNG K., Professor of Physics, Department 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 AFRL/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 Polytechnic Institute and State University. He has directed the research of ten PhD students and sixteen MS students. He is currently advising one PhD student who is doing active research, and has one postdoc fellow. 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

<u>Symbol</u>	<u>School Office/Department</u>	<u>Room</u>	<u>Telephone, (DSN)</u>
EN	Office of the Dean Dr. Robert A. Calico, Jr., Dean Col Wayne F. Hallgren, Associate Dean Col James M. Norris, Associate Dean for Plans & Programs) Dr. Paul J. Wolf, Assistant Dean for Academic Affairs)	100	(937) 255-3025 (DSN: 785-3025) (937) 255-3025 (DSN: 785-3025) (937) 255-4372 (DSN: 785-4372) (937) 255-3636, x4553 (DSN: 785-3636, x4553) (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 Thurmon L. Deloney, II	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 Al E. Thal	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 at Section 1.8.

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
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.

After World War II, 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 Ph.D. students scheduled for FY 97 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 FY 96 that will size the resident graduate programs to meet the Air Force education requirements of the FY 03 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

Copies of theses with unlimited distribution may be obtained from either of the following agencies depending on the particular circumstances.

U.S. Government employees, individuals affiliated with a research and development activity within the U.S. Government, or its associated contractors, subcontractors, or grantees, under current U.S. Government contract, can order from:

DEFENSE TECHNICAL INFORMATION CENTER
8725 John J. Kingman Road, STE 0944
Ft Belvoir, VA 22060-6218
Phone: 1-800-225-3842
Website: <http://www.dtic.mil/>

Private U. S. citizens without a U. S. Government contract can order from:

NATIONAL TECHNICAL INFORMATION SERVICE
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161-0111
Phone: 1-800-553-6847
Website: <http://www.ntis.gov>

Information that is needed to obtain a given document is: 1) author, 2) title, 3) publication date, and 4) reference to the document as an Air Force Institute of Technology thesis.

General inquiries concerning faculty and student research at the Air Force Institute of Technology may 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>

REPORT DOCUMENTATION PAGE				Form Approved OMB No. 074-0188	
<p>The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.</p> <p>PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.</p>					
1. REPORT DATE (DD-MM-YYYY) 1 April 2001		2. REPORT TYPE Summary Report of Annual Research		3. DATES COVERED (From – To) 01 Oct 99 – 30 Sep 00	
4. TITLE AND SUBTITLE AIR FORCE INSTITUTE OF TECHNOLOGY RESEARCH REPORT 2000				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Office of the Associate Dean for Research and Consulting, Graduate School of Engineering and Management				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAMES(S) AND ADDRESS(S) Air Force Institute of Technology Graduate School of Engineering and Management (AFIT/ENR) 2950 P Street, Building 640 WPAFB OH 45433-7765				8. PERFORMING ORGANIZATION REPORT NUMBER AFIT/EN-TR-01-01	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Air Force Institute of Technology Graduate School of Engineering and Management (AFIT/ENR) 2950 P Street, Building 640 WPAFB OH 45433-7765				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED.					
13. SUPPLEMENTARY NOTES The views expressed in this report are those of the authors and do not reflect the official policy or position of the Department of Defense or the U.S. Government					
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.					
15. SUBJECT TERMS Air Force Institute of Technology, Research Report 2000					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT UU	18. NUMBER OF PAGES 128	19a. NAME OF RESPONSIBLE PERSON Dr. Heidi R. Ries, ENR
a. REPORT U	b. ABSTRACT U	c. THIS PAGE U			19b. TELEPHONE NUMBER (Include area code) Commercial: (937) 255-3633 or DSN: 785-3633

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std. Z39-18

Form Approved
OMB No. 074-0188