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AIR FORCE INSTITUTE OF TECHNOLOGY



**GRADUATE SCHOOL OF ENGINEERING &
GRADUATE SCHOOL OF LOGISTICS & ACQUISITION MANAGEMENT**

**RESEARCH REPORT
1997**

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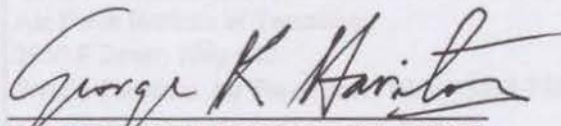
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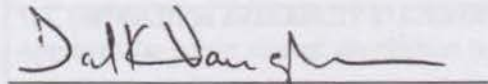
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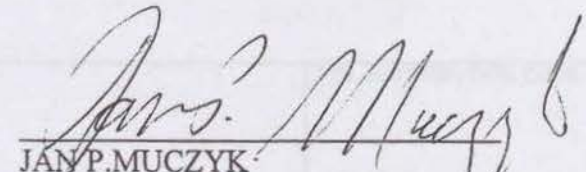
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FOREWORD

The mission of the Air Force Institute of Technology (AFIT) Graduate Schools, to support national security through education, research, and consultation, continues to be intrinsically interwoven into the Air Force mission. AFIT maintains a close affiliation with Air Force research organizations and operational communities as well as Department of Defense Agencies. This affiliation enables AFIT to provide a unique environment for research essential to the training of future managers and engineers in disciplines critical to anticipated defense needs.

This report has been prepared to solicit continued involvement and support from Air Force laboratories, and DoD agencies and to encourage new sponsors to participate in AFIT's research program. AFIT recognizes that research provides a dual opportunity, to enhance military competitiveness and to ensure timely transfer of new technology to US industry.

The report was prepared jointly by the Office of the Associate Dean for Research, Graduate School of Engineering, and the Assistant Dean of Research and Consulting, Graduate School of Logistics and Acquisition Management.

JOHN H. RUSSELL Colonel, USAF
Commandant
Air Force Institute of Technology



AIR FORCE INSTITUTE OF TECHNOLOGY

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AFIT HISTORY

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.

The part played by research in the essential and continuous modernization of military capability 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.

AFIT's awareness of changing Air Force requirements was demonstrated when, as environmental concerns culminated in the Pollution Prevention Act of 1990, both graduate and professional continuing education programs in engineering and environmental management were created.

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 fills the need to develop 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.

Beginning in 1996, the Graduate School of Logistics and Acquisition Management worked closely with AFMC's technology transfer office to improve cooperative research and development programs with civilian educational institutions and industry. The benefit of technology transfer can be seen in the Graduate School of Engineering's development and application of pattern recognition technology to the evaluation of mammography and its immediate use and availability to the community. The Department of Aeronautics and Astronautics worked with Environmental Tectonics Corporation (ETC) to build a dynamic mathematical model of ETC's centrifuge. The goal was to modify the simulator to produce physical high G conditions/forces a pilot would experience. AFIT's Graduate School of Engineering developed software for crack growth studies and characterization of advanced alloys to support West Virginia University's new material test facility. A master's student from the Department of Operational Sciences developed a Cost Impact Assessment Tool for PepsiCo Food Systems to support their process for Supply Chain Optimization Modeling. Through technology transfer AFIT assisted North Carolina Agricultural and Technical State University its research by evaluating the effects of embedded sensors on the mechanical properties of certain resin composite materials.

AFIT continues its interaction with the air forces of other countries by training students and assisting their educational institutions. The Graduate School of Logistics and Acquisition Management is working on logistics and logistics education issues with representatives from a number of southern hemisphere countries, including Brazil and Argentina.

The Information Resource Management Program, in the Graduate School of Logistics and Acquisition Management, provided significant assistance to the Aeronautical Systems Center in their efforts to determine necessary information resources requirements in designing the new AF Research Laboratory.

Three projects in the Graduate School of Engineering exemplify research and benefits. The Department of Engineering Physics has an extended history of strong research in high energy laser technology and delivering mission ready graduates to AF laboratories. AFIT is now supporting the development of the Airborne Laser. As described by Secretary Widnall, the Airborne Laser "attacks at the speed of light, costs about \$1,000 per shot, will kill chemical and biological weapons over enemy territory and frees up many of our attack aircraft from 'Scud-hunting' duty for other war-fighting requirements" (Air Force Magazine, Jan '96).

The Department of Operational Sciences' C-17 Air Drop research demonstrates AFIT's involvement in current AF operations. Responding to the needs of the C-17 Systems Program Office (SPO), AFIT researchers 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!"

Research, inextricably interwoven with graduate education, has linked AFIT with the Air Force Research Laboratory on projects of critical interest. An example is the Department of Aeronautics and Astronautics research on high cycle fatigue. The most dominant issue relevant to gas turbine engine damage is caused by high cycle fatigue. 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.

AFIT was established in recognition of the role defense research and education played in the development of critical defense technology. AFIT continues its mission to provide a foundation for future Air Force capability.

SECTION 1

INTRODUCTION

Research requires support to sustain and develop new knowledge. Defense research has dual benefits, enhanced military operational capabilities and commercial application in the development of new products and processes. This report describes the broad technical spectrum of AFIT research interests and faculty expertise; the involvement of research sponsors; and the procedure for developing opportunities for participation in AFIT research activities. This report highlights and summarizes the contributions of the Graduate School of Engineering (EN) and the Graduate School of Logistics and Acquisition Management (LA) to the Air Force mission.

The Graduate School of Engineering consists of 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 Engineering and Environmental Management (ENV), and the Department of Aeronautics and Astronautics (ENY). The Graduate School of Logistics and Acquisition Management consists of the Dean's Office (LA), the Department of Graduate Logistics Management (LAL), and the Department of Graduate Acquisition Management (LAS).

AFIT welcomes the opportunity to conduct research on topics of interest to the Air Force and other DoD organizations. Thesis/dissertation topics may be sent directly to the appropriate departments or to the Research Dean in each school. The Air Force, the DoD, and other government agencies are not the exclusive benefactors of faculty expertise, consultation, and the research technology developed at AFIT. Consultation and technology can be made available to the public for immediate commercial application and industrial problem solving. Technology transfer, through Cooperative Research and Development Agreements, gives direct access to the expertise to help solve problems and give advice. The cost of participation in technology transfer depends on the extent or resources used for any particular commercial/industrial client or educational institution. There may be no cost involved or prolonged use of equipment or faculty and students may be billed at cost.

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SECTION 2

EXECUTIVE SUMMARY

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 fiscal year 1997, these output measures are shown in Table 2.1 and in Fig. 2.1.

Table 2.1: Graduate School's 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 |
|---|-------------------|-----------------------|--------------------|---------------|--------------------------|---------------------------|------------------------|----------------------------|
| Engineering | | | | | | | | |
| Math (ENC) | 12 | 10 | 0 | 7 | 1 | 1 | 2 | 0 |
| Elec (ENG) | 24 | 35 | 99 | 105 | 44 | 32 | 62 | 14 |
| Phys (ENP) | 16 | 28 | 8 | 36 | 22 | 3 | 20 | 10 |
| Op Sc (ENS) | 15 | 12 | 16 | 23 | 6 | 6 | 38 | 2 |
| Envir (ENV) | 6 | 7 | 5 | 8 | 5 | 14 | 22 | 0 |
| Aero (ENY) | 19 | 35 | 31 | 54 | 43 | 37 | 25 | 8 |
| Total (EN) | 92 | 127 | 159 | 233 | 121 | 93 | 169 | 34 |
| Logistics and Acquisition Management | | | | | | | | |
| Deans (LA) | 4 | 4 | 4 | 18 | 0 | 2 | 5 | 0 |
| Log (LAL) | 15 | 9 | 23 | 31 | 0 | 7 | 35 | 0 |
| Acq Mgt (LAS) | 16 | 4 | 6 | 20 | 0 | 23 | 24 | 0 |
| Total (LA) | 35 | 17 | 33 | 69 | 0 | 32 | 64 | 0 |
| Total EN+LA | 127 | 144 | 192 | 302 | 121 | 125 | 233 | 34 |

2.2 RESEARCH AND CONSULTING SPONSORSHIP

As members of an Air Force School, 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 85% of all theses and dissertations listed in Table 2.2 were directly 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 is summarized in Table 2.2 and Fig. 2.2.

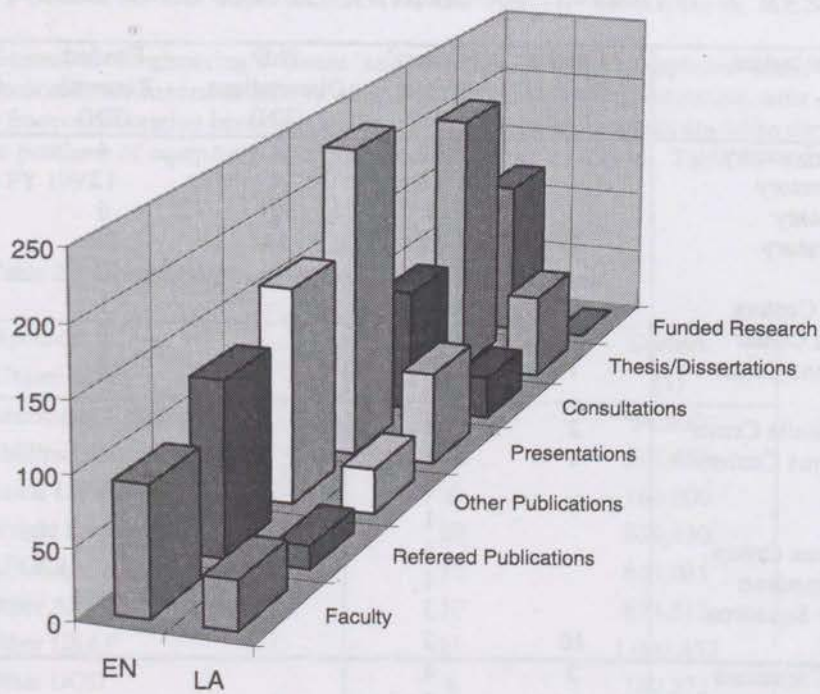


Figure 2.1: Research Output Measures, AFIT Resident Graduate Schools

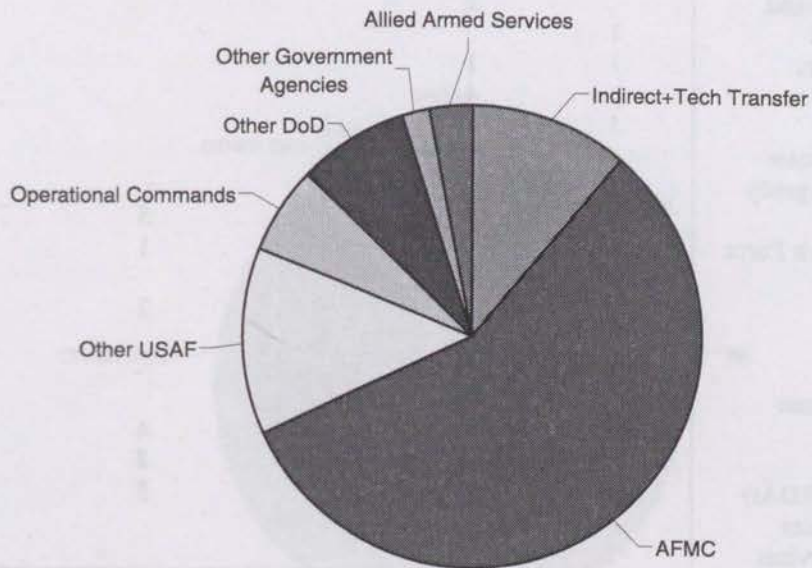


Figure 2.2: Sponsors of AFIT Resident Graduate Schools' Theses and Dissertations

Table 2.2: Sponsorship of AFIT Graduate Schools' Research

| Sponsor Organization | Master's Theses (LA) | Masters' Theses (EN) | PhD Dissertations (EN) | Funded Research (EN) | Significant Consultations (LA) | Significant Consultations (EN) |
|----------------------------|----------------------------|----------------------------|------------------------------|----------------------------|--------------------------------------|--------------------------------------|
| Armstrong Laboratory | 3 | 11 | | 4 | | 2 |
| Phillips Laboratory | | 18 | 4 | 13 | | 4 |
| Rome Laboratory | | 4 | 2 | 6 | | 4 |
| Wright Laboratory | 2 | 32 | 14 | 29 | 2 | 27 |
| AFOSR | | 13 | 8 | 35 | | |
| Air Logistics Centers | 2 | 4 | | 1 | | |
| Aero Systems Center | | 3 | | 5 | 5 | 5 |
| Electro Systems Center | 1 | 3 | | 2 | 1 | |
| AFCEE | | 2 | | | | |
| Space and Missile Center | 2 | 1 | | | | |
| Human Systems Center | 1 | 1 | | | | |
| 88th ABW | | 1 | | 1 | | |
| C-17 SPO | | 1 | | | | |
| 46th Operations Group | | 1 | | 1 | | |
| 746th Test Squadron | | 1 | | | | |
| 88th Weather Squadron | | 3 | | | | |
| Other AFMC | 10 | 2 | 1 | | 13 | 7 |
| Air Combat Command | 2 | 4 | | | | |
| Air Mobility Command | 1 | 3 | 1 | | | |
| AETC | | | | 5 | 2 | |
| AF Space Command | | 2 | | | | |
| AF Weather Agency | | 4 | | | | |
| Strategic Command | | 2 | | | | 3 |
| US Central Command | | 2 | | | | |
| Pacific Air Forces | 1 | | | | | |
| AF Civil Engineers | 1 | 1 | | | | |
| AFOTEC | | 4 | | | | 1 |
| HQ USAF | 5 | 3 | | | 2 | |
| Space Warfare Center | | 3 | | | | |
| Air Intelligence Agency | | 4 | | | | |
| Other USAF | | 3 | 1 | 5 | | 11 |
| Secretary of the Air Force | 5 | | | 1 | 1 | 1 |
| US Army | 2 | 2 | 1 | | | 1 |
| US Navy | | 1 | | 2 | | 2 |
| US Marine Corps | | 1 | | | | |
| DISA | | 4 | | | | |
| Secretary of Defense | 2 | 1 | | | 1 | |
| Dept of Defense | 2 | 4 | 1 | 4 | 1 | 6 |
| Dept of Energy | | 3 | | 2 | | 1 |
| Tech Transfer (CRDAs) | | 1 | | 5 | | |
| Other Gov Agencies | 1 | 1 | | | 2 | 5 |
| Allied Armed Services | 7 | 1 | | | 2 | |
| Indirect Sponsors: | | | | | | |
| Logistics Procedures | 6 | | | | | |
| Improved Business | 5 | | | | | |
| Human Resources | 3 | | | | | |
| Other | | 14 | 1 | | | 13 |
| TOTALS: | 64 | 169 | 34 | 121 | 32 | 93 |

2.3 OUTSIDE FUNDING OF THE SCHOOL OF ENGINEERING'S RESEARCH

Many of the School of Engineering's theses and research projects completed under faculty supervision (sponsored or unsponsored) are funded in part by other Air Force, DoD and government units and agencies. Often this funding results from collaboration between faculty and thesis sponsors and occurs when the research project can be leveraged by the purchase of equipment or services not otherwise available. Table 2.3 and Fig. 2.3 summarize outside funding for FY 1997.

Table 2.3: Sponsoring Organizations for Funded Research

| Sponsoring Organization | Funded Projects | Dollars (\$) |
|-------------------------|-----------------|--------------|
| Armstrong Laboratory | 4 | 54,600 |
| Phillips Laboratory | 13 | 546,468 |
| Rome Laboratory | 6 | 160,000 |
| Wright Laboratory | 29 | 859,430 |
| AFOSR | 35 | 844,081 |
| Other AFMC | 10 | 674,513 |
| Other USAF | 11 | 1,001,453 |
| Other DOD | 6 | 180,271 |
| Other Govt Agencies | 2 | 86,000 |
| Tech Transfer (CRDAs) | 5 | 72,886 |
| Total | 121 | 4,479,703 |

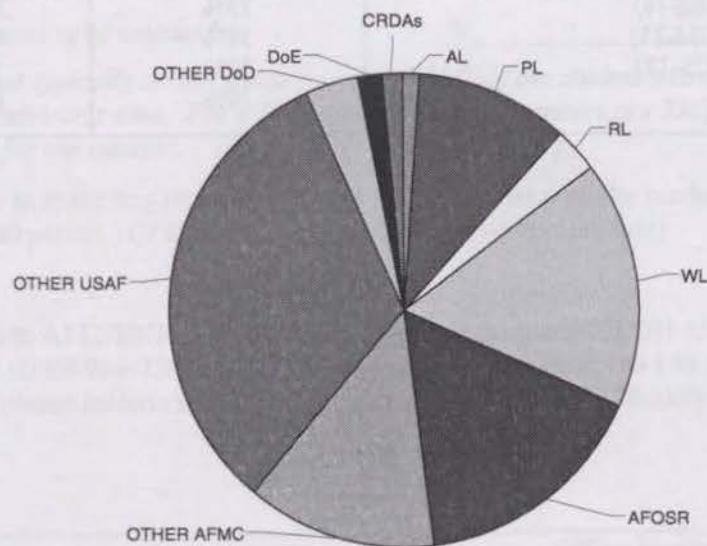


Figure 2.3: Funded Research for Fiscal Year 1997

2.4 RESEARCH ASSESSMENT QUESTIONNAIRE RESULTS

An AFIT Research Assessment form, shown on page 7, was sent to each sponsor of a master's thesis and doctoral dissertation project during FY 1997 to determine the project's contribution, significance and cost avoidance. Detailed results of the questions asked are shown in Table 2.4. The data in this table are based on the number of questionnaires returned for each school.

Table 2.4: Assessment of AFIT Graduate Schools Research

| QUESTION | EN | LA |
|--|--------------|-------------|
| Did this research contribute to a current Air Force/DoD project? | 93% | 80% |
| The thesis work was: | | |
| Highly significant | 38.6% | 40% |
| Significant | 45.6% | 50% |
| Slightly significant | 14% | 10% |
| Not significant | 1.8% | 0% |
| Avg. Man-years of effort saved | no data | 0.772 |
| Average cost avoided per thesis/dissertation | \$100,240 | \$64,214 |
| Total cost avoided for all theses and dissertations sponsored | \$18,845,120 | \$3,660,214 |
| Rank of respondents | | |
| Colonel (GM-15) | 14% | 15% |
| Lt Col (GM-14) | 25% | 30% |
| Major (GM-13) | 39% | 40% |
| Captain (GS-12) | 12% | 5% |
| Other | 10% | 10% |



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.* \$ _____
**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 enr@afit.af.mil. 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

1997 CALL FOR MS THESIS TOPICS

AFIT sends out an annual call for theses in an effort to involve sponsor organizations actively in research and education. Interested organizations may review the material presented in this report and contact AFIT with questions and areas of interest.

The Department of Electrical and Computer Engineering invites MS theses suggestions and topics for the Computer Science and Computer Engineering programs. The areas covered by these programs include:

**Artificial Intelligence
Computer Architecture
Numerical Analysis
Software Engineering
Database Systems Graphics & Virtual Reality**

**Computer Communications Networks
Information Survivability
Signal Processing
VLSI/VHSIC Systems**

The Department of Electrical and Computer Engineering invites MS theses suggestions and topics for the Electrical Engineering and Electro-Optics programs. The areas covered by these programs include:

**Analog & Digital Communications
Flight Control Systems
Signal Processing
Radar, Electronic Combat &
Low Observables
Integrated Navigation Systems
(INS/GPS)
Optical and Microelectronic Materials**

**Remote Sensing
Microelectronic Mechanical Sensors
and Actuators
Very Large Scale Integrated Circuits
and Packaging
Statistical Optics and Optical
Information Processing
Pattern Recognition of Images &
Speech**

The Department of Engineering Physics invites MS theses suggestions and topics for the Engineering Physics, Nuclear Engineering, Meteorology, and Electro-Optics programs. (Electro-Optics is shared between Electrical Engineering and Engineering Physics). The areas covered by these programs include:

**Lasers & Nonlinear Optics
Atmospheric and Space Optics
Optical Systems, Imaging
& Remote Sensing
Electronic & Photonic Materials and Devices**

**Meteorology
Nuclear Weapons Effects
Space Nuclear Power and Propulsion
Environmental Remediation
Fission/Fusion Material Research**

The Department of Operational Sciences invites MS theses suggestions and topics for the Operations Research, and Operational Analysis programs. Areas covered by these programs include:

- Operations Research**
- Modeling, Simulation and Analysis**
- Mathematical Programming and Optimization**
- Probabilistic and Statistical Modeling**
- Transportation**
- Wargaming**
- Quantitative and Qualitative Approaches to Operational Analysis**
- Risk Assessment and Decision Analysis**
- Planning, Deployment and Employment**

The Department of Engineering and Environmental Management invites MS theses suggestions and topics. Areas covered by these programs include:

- Facilities Engineering Management**
- Contract and Program Management**
- Management Decision analysis**
- Contingency Engineering Management**
- Environmental Law and Policy**
- Pollution Prevention and Economic Analysis**
- Ecosystem Management Strategies**
- Environmental Remediation**
- Environmental Compliance**
- Groundwater Hydrology and Contaminant Transport**
- Management Decision Analysis**
- Risk Communication and Management Engineering**

The Department of Aeronautical and Astronautical Engineering invites MS theses suggestions and topics for Aeronautical, Astronautical and Systems Engineering programs. Areas covered by these programs include:

| | |
|--|---|
| Aerodynamics of Flight Vehicles | Numerical Analysis & Computer |
| Analysis of Aerospace Structures | Simulation |
| Theory and Applications of | Computational Fluid Dynamics |
| Composite Materials | Reliability and Maintainability |
| Dynamics & Control of Flight Vehicles | Systems Engineering Design Studies |
| Propulsion Systems for Flight Vehicles | |

If you have any questions about engineering programs, please contact the Office of the Associate Dean for Research. AFIT/ENR, 2950 P Street, Wright-Patterson AFB OH, 45433-7765 (email briehl@afit.af.mil), (937) 255-3636 ext 4546, DSN 785-3636 ext 4546.

The Graduate School of Logistics and Acquisition Management invites suggestions and topics for thesis research for the MS program. The specific programs include:

Contracting Management
Cost Analysis
Software Systems Management
Information Systems Management
Logistics Management
Acquisition Logistics Management
Supply Management
Systems Management
Transportation Management

If you have general questions about Logistics and Acquisition Management Programs, please contact the Office of the Assistant Dean for Research and Consulting, AFIT/LAC, 2950 P Street, Wright-Patterson AFB OH 45433-7765, (937) 255-3636 ext 1213.

ESTABLISHING YOUR THESIS TOPIC IDEA EFFICIENTLY

1. Look through the credentials and interests of the AFIT faculty members in this book who support the programs listed above. Cross-reference with the Areas of Professional Expertise (section 3.2). Match your areas of interest with the research interests and applications of one or more faculty.
2. Read through the list of selected recent graduates' thesis topics. You may find one or more AFIT Faculty Advisors who have dealt with a topic in your interest area.
3. *All of the above information is under AFIT's home page on the internet. Please enter <http://www.afit.af.mil/AFITHome.html> then select 'Graduate School of Engineering' and then 'Research'.*
4. *This is essential: Whether you work from this booklet or from the internet, contact a faculty member to discuss your idea for a thesis topic. A topic which has strong faculty endorsement and support is much more likely to be chosen by the students than one which lacks faculty advocacy. Topics which fall outside the collective areas of faculty competence cannot be approved, even if chosen. For maximum effectiveness all around, **please talk to AFIT before you submit a thesis suggestion.***
5. When calling, use the faculty member's DSN phone number to make direct contact. For commercial calling, replace the DSN number 785-xxxx, ext xxxx with (937) 255-xxxx, ext xxxx.
6. After talking to an AFIT faculty member, prepare and send your proposal as soon as possible. Use the sample proposal format in this book, or make up your own. **Send your proposal to the faculty member, to the department, or to AFIT/ENR, 2950 P St., Wright-Patterson AFB OH 45433-7765.**

Sample Thesis Topic Proposal

Use this format to write up your proposal, or develop your own. Send your proposal to the faculty member, appropriate department, or AFIT/ENR, 2950 P St, Wright-Patterson AFB OH 45433-7765.

***** SAMPLE *****

PROPOSED THESIS TOPIC

1. **THESIS TOPIC:** Object-Oriented, Parallel, Discrete-Event Simulation Environment

2. **INDIVIDUAL SPONSOR:** Capt Lienert, RL/IRAA (DSN 785-3708)
Aeronautical Systems Center
5125 C St
Wright-Patterson AFB OH 45433-0098

3. **AFIT FACULTY CONTACTED:** Dr Thomas C. Hartrum, AFIT/ENG

4. **BACKGROUND/PROBLEM:** In order to investigate various approaches to speeding up the execution of battlefield simulations using parallel processors, there is a need to develop a simulation environment to allow for easy changes in application simulations, as well as parallel simulation protocols. The environment is to be written in Ada. An object-oriented simulation environment would provide AFIT students and faculty in the parallel simulation group the opportunity to write simulation programs without having to worry about low-level details of the machine interface. Such a simulation environment would need to support a distributed network of various parallel and sequential computers to support future simulation applications.

5. **OBJECTIVE/APPROACH:**

- a. Analyze what is needed in a simulation environment.
- b. Design the system, using objects defined in the analysis
- c. Implement the environment in Ada.

6. **RESOURCE REQUIREMENTS:**

- a. Access to a parallel processor
- b. Compatible parallel Ada compiler
- c. Local area network

7. **REFERENCES:** Parallel Program Design, Chandy & Misra

***** SAMPLE *****

GRADUATE SCHOOL OF ENGINEERING

SECTION 3

GRADUATE SCHOOL OF ENGINEERING

3.0 OVERVIEW

AFIT supports the Air Force mission by providing uniquely defense-oriented education through high quality graduate instruction, research, and consultation.

The Graduate School of Engineering consists of six departments: Department of Aeronautical and Astronautical Engineering (ENY), Department of Electrical Engineering and Computer Engineering (ENG), Department of Mathematics & Statistics (ENC), Department of Engineering and Environmental Management (ENV), Department of Engineering Physics (ENP), and Department of Operational Sciences (ENS). A total of 169 masters theses and 34 PhD dissertations addressing a wide range of Air Force and DoD critical issues were written in 1997. In addition, the faculty generated: 122 journal articles, 169 other publications, 233 technical presentations, and were involved in 121 funded research projects.

The Dayton Area Graduate Studies Institute (DAGSI) is a unique university partnership originated by the engineering colleges of the University of Dayton (UD), Wright State University (WSU), and the Air Force Institute of Technology (AFIT), with affiliate members, the Ohio State University (OSU) and the University of Cincinnati (UC). The three institutions, University of Dayton, Wright State University, and the Air Force Institute of Technology, through DAGSI, allow students enrolled in graduate engineering programs at any of the three institutions to take advantage of course offerings at the other two. These courses are then included in the student's program as if offered at their home institution. As affiliate members, the Ohio State University and the University of Cincinnati participate in research collaboration. The goal of DAGSI is to provide world-class graduate and post-graduate research and education. DAGSI coordinates, integrates, and leverages the formidable resources of the partnership, including the combined faculty, facilities, equipment and other supporting elements of all three institutions. Through DAGSI, scholarships are available at AFIT on either a part-time or full-time basis. Both civilians and military officers are eligible. For further information contact AFIT/ENA, (937) 255-3636 ext 4550, DSN 785-3636 ext 4550.

Most of AFIT's research is conducted as the result of Air Force or DoD active sponsorship. The research suggested by these sponsors directly supports on-going defense projects, tasks and sub tasks. The majority of this sponsorship comes from the Air Force Materiel Command, especially the science and technology laboratories of that command. While the bulk of the AFIT research program responds to USAF/DoD suggestions, AFIT also collaborates with other universities on joint projects proposed by the National Science Foundation and other university grantors. AFIT is also active in transferring technology to the private sector through Cooperative Research and Development Agreements (CRDAs).

Anxious to continue the involvement of Air Force, DoD, and government agencies in AFIT research and education, AFIT also encourages educational institutions and industry, through technology transfer, to benefit from AFIT resources. Persons and organizations interested in AFIT research should contact a faculty collaborator as follows. Refer to section 3.2 of this report "Areas of Professional Expertise," which is a list of technology key words. Note the names listed behind each key word. Next, review the faculty resumes in section 3.3 of this report to find the faculty member's phone number and e-mail address. Contact the faculty member and open discussion on your research interest. Please contact the Office of the Associate Dean for Research (AFIT/ENR) with any questions you may have, (937) 255-3636 ext 4546, DSN 785-3636 ext 4546.

GRADUATE SCHOOL OF ENGINEERING

3.1 DEPARTMENT SYMBOLS AND LOCATIONS

Graduate School of Engineering (AFIT/EN), Bldg 640, 2950 P Street, Wright-Patterson AFB OH, 45433-7765

| <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 George K. Haritos, Associate Dean Maj Mark. A. Kanko, Assistant Dean | 100 | (937) 255-3025 (DSN 785-3025) (937) 255-3025 (DSN 785-3025) (937) 255-4372 (DSN 785-4372) (937) 255-3636, x4557/ (DSN 785-3636, x4557) |
| ENR | Office for Research and Consulting Col George K. Haritos, Acting Associate Dean for Research | 100 | (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 Dr. William M. Brown | 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 Dr. Edward F. Mykytka | 177 | (937) 255-2549 (DSN 785-2549) |
| ENV | Department of Engineering and Environmental Management Lt Col Steve T. Lofgren | 204 | (937) 255-2998 (DSN 785-2998) |
| ENY | Department of Aeronautics and Astronautics Dr. Bradley S. Liebst | 201 | (937) 255-3069 (DSN 785-3069) |

3.2 AREAS OF PROFESSIONAL EXPERTISE

Ada: Hartum, T.C.; Kanko, MA; Graham, R.P.
 Adaptive Estimation: Maybeck, P.S.
 Adaptive Filtering, Multiple Model: Maybeck, P.S.; Pachter, M.
 Adaptive Optics: Welsh, B.M.
 Adaptive Robust Estimation: Pachter, M.
 Aero/Gas Dynamics and Propulsion: Bons, J.P.; King, P.I.; Little, L.K.; Franke, M. E.
 Aerodynamics: Bons, J.P.; Franke, M. E.; King, P.I.
 Aerospace Vehicle Stability and Control: Hall, C. D.; Heise, S.A.; Liebst, BS; Maybeck, P.S.; Pachter, M.
 Aircraft Impact Damage: Palazotto, A.N.
 Aircraft Stability and Control: Calico, R.A.; Heise, S.A.; Houppis, C.H.; Liebst, BS; Pachter, M.
 Aircraft Survivability/Vulnerability: Jackson, J. A.
 Air Pollution Meteorology/Modeling: Dungey, C.E.
 Air Pollution Transport Modeling: Quinn, D.W.
 Algorithm Development/Analysis: Mathews, K.A.; Terzuoli, A.J.; Moore, J. T.; Graham, R. P.; Lamont, G.B.; Hill, R.R.
 Algorithms: Graham, R. P.
 Analysis, Decision: Kramer, S.C.; Maybeck, P.S.; Stytz, M.R.; Pohl, E. A.; Jackson, J.A.; Kloeber, J.M.
 Analysis, Defense Systems: Dietz, D.C.; Jackson, J.A.; Hill, R. R.
 Analysis, Probabilistic: Dietz, D.C.; Maybeck, P.S.; M.C.; Pohl, E.A.; Bauer, K.W.; Murdock, W.P.; Reid, T. F.; Crown, S.S.
 Analytical Dynamics: Pachter, M.; Palazotto, A.N.; Spenny, C.H.
 Applied Functional Analysis: Baker, W.P.; Beran, P.S.; Chilton, L. K; Lair, A.V.; Oxley, M.E.; Pachter, M.; Quinn, D.W.; Wood, A.
 Applied Mathematics: Baker, W.P.; Beran, P.S.; Chilton, L. K.; Ericksen, W. S.; Hall, C.D.; Lair, A.V.; Oxley, M.E.; Pachter, M.; Palazotto, A.N.; Quinn, D.W.; Wood, A.; Terzuoli, A.J.; Weeks, D.E.; Burggraf, L.
 Artificial Intelligence: Banks, S.B.; Brown, F.M.; Gelosh, D.S.; Gunsch, G.H.; Lamont, G.B.
 Artificial Perception: Kabrisky, M.J.; Oxley, M.E.
 Astrodynamics: Calico, R.A.; Hall, C.D.; Wiesel, W.E.
 Asymptotic and Perturbation Methods: Baker, W.P.; Beran, P.S.; Hall, C.D.
 Atmospheric Chemistry: Burgraff, L. W.; Perram, G.P.; Wolf, P. J.
 Atmospheric Optics: Dungey, C.E.; Welsh, B.M.
 Atmospheric Physics: Walters, M.K.; Goldizen, D.T.; Dungey, C.E.
 Automated Reasoning: Brown, F.M.; Kabrisky, M.J.; Lamont, G.B.
 Battlefield Weather Forecasting: Dungey, C. E.; Askue, C. A.
 Bayes Estimation: Kramer, S.C.; Maybeck, P.S.; Moore, A.H.; Pachter, M.; Pohl, E. A.; Kramer, S. C.
 Bilevel Programming: Moore, J.T.
 Biodegradation and Biodeterioration: Shelley, M.L.; Burggraf, L.; Goltz, M. N.; Bleckmann, C.A.
 Boolean Reasoning: Brown, F.M.
 Boundary Layer Stability and Transition: Franke, M. E.
 Boundary Value Problems, Free/Moving: Oxley, M.E.; Terzuoli, A.J.; Collins, P. J.; Chilton, L. K.
 Cascade Flows: King, P.I.
 Cathodoluminescence: Hengehold, R.L.; Yeo, Y.K.
 Cavity Acoustics: Baker, W.P.; Franke, M. E.
 Chemical Kinetics: Burggraf, L.W.; Perram, G.P.; Weeks, D.E.; Wolf, P.J.; Heyse, E. C.
 Combat Modeling: Kloeber, J.; Jackson J.
 Combustion Molecular Dynamics: Little, J.K.
 Command Control Communications: Raines, R. A.
 Communication Theory: Welsh, B.M.
 Communications Networks: Raines, R. A.
 Composite Materials: Mall, S.; Palazotto, A.N.

GRADUATE SCHOOL OF ENGINEERING

Computation, Parallel/Distributed: Bailey, W.F.; Beran, P.S.; Hartrum, T.C.; Lamont, G.B.; Stytz, M.R.; Terzuoli, A.J.; Little, J. K.

Computational Chemistry: Burggraf, L.W.

Computational Complexity: Moore, J. T.; Deckro, R.F.; Chrissis, J.W.; Chan, Y.; Hill, R. R.

Computational Electromagnetics: Collins, P. J.; Chilton, L. K.

Computational Fluid Dynamics: Beran, P.S.; Little, J.K.; Bailey, W. F.

Computational Fluid Mechanics: Beran, P.S.

Computational Structural Mechanics: Palazotto, A.N.; Chilton, L. K.

Computer Aided Design (CAD): Gelosh, D.S.

Computer Architecture: Gelosh, D.S.

Computer Communication Networks: Raines, R.A.; Reid, T. F.

Computer Graphics: Shomper, K.A.; Stytz, M.R.; Weeks, D.E.

Computer Simulation: Bailey, W.F.; Hartrum, T.C.; Stytz, M.R.; Weeks, D.E.; Pohl, E. A.; Bauer, K.W.; Jackson, J.A.; Kloeber, J.M.; Miller, J. O.

Computer Software Analysis: Kanko, MA; Shomper, K.A.

Contaminant Transport: Heyse, E.C.; Oxley, M.E.; Shelley, M.L.; Goltz, M. N.

Contaminated Groundwater Assessment: Heyse, E.C.; Shelley, M.L.; Goltz, M.N.

Continuous Simulation: Pachter, M.

Continuum Mechanics: Mall, S.; Palazotto, A.; Turcotte, J. S.

Control Systems, Aerospace: D'Azzo, J.J.; Hall, C.D.; Heise, S.A.; Houpis, C.H.; Maybeck, P.S.; Pachter, M.

Control Systems, Computer-Aided Design: D'Azzo, J.J.; Lamont, G.B.; Maybeck, P.S.; Pachter, M.

Control Systems, Computational and Numerical Methods: Lamont, G.B.; Maybeck, P.S.; Pachter, M.; Wiesel, W.E.

Control Systems, Intelligent: Lamont, G.B.; Maybeck, P.S.; Pachter, M.

Control Systems, Parallel/Distributed: Lamont, G.B.; Pachter, M.

Control Systems, Robotic: Pachter, M.

Control Theory, Linear/Nonlinear: D'Azzo, J.J.; Hall, C.D.; Houpis, C.H.; Kramer, S.C.; Liebst, BS; Maybeck, P.S.; Pachter, M.; Wiesel, W.E.

Control Theory & Systems: Calico, R.A.; D'Azzo, J.J.; Hall, C.D.; Houpis, C.H.; Kramer, S.C.; Lamont, G.B.; Liebst, BS; Maybeck, P.S.; Pachter, M.

Cost Analysis: Cain, J.P.; Jackson, J.A.; Kloeber, J.M.; Lofgren, S. T.; Nixon, W. B.

Cost Models: Deckro, R.F.

Critical Path Methods: Deckro, R.F.

Data Acquisition: King, P.I.; Martin, J.B.

Data Bases: Talbert, M. L.

Data Management: Talbert, M. L.

Data Processing: Talbert, M. L.

Database Systems, Management: Potoczny, H.B.

Database Systems, Object-Oriented: Potoczny, H.B.

Decision Support Systems: Banks, S. A.; Gunsch, G.H.; Stytz, M. R.

Deconvolution of Radiation Spectra: Mathews, K.A.

Design of Experiments: Bauer, K.W.; Moore, A.H.; Pohl, E.A.; Reynolds, D.E.; Crown, J.S.; Bailey, T. G.; Miller, J. O.; Hill, R. R.; Gardner, S. J.

Digital Communications: Raines, R.A.; Welsh, B.M.; Reid, T. F.

Digital Control Systems: D'Azzo, J.J.; Houpis, C.H.; Lamont, G.B.; Maybeck, P.S.; Pachter, M.

Digital Logic Design: Brown, F.M.

Differential Games: Pachter, M.

Dynamic Meteorology: Askue, C. A.

Dynamics: Aircraft/Spacecraft: Hall, C.D.; Liebst, BS; Pachter, M.; Spenny, C.H.

Dynamics: Chaotic: Wiesel, W.E.

Ecological Resource Management: Bleckmann, C.A.; Shelley, M.L.

Economic Models: Chan, Y.; Deckro, R.F.

Economic Theory: Cain, J.P.; Chan, Y.

Eigenstructure Assignment and Control: D'Azzo, J.J.; Liebst, BS; Pachter, M.

GRADUATE SCHOOL OF ENGINEERING

- Elasticity: Palazotto, A. N.; Chilton, L. K.
- Electro-Optics: Dungey, C.E.; Luke, T.E.; Roh, W.B.; Welsh, B.M.; Yeo, Y.K.; Largent, C.C.
- Electromagnetic Radiation and Scattering: Baker, W.P.; Terzuoli, A.J.; Collins, P.J.; Chilton, S. K.
- Electromagnetic Theory: Pyati, V.P.; Terzuoli, A.J.; Collins, P. J.
- Electromagnetics: Pyati, V.P.; Terzuoli, A.J.; Collins, P. J.
- Electronic Warfare: Pyati, V.P.; Jackson, J.A.
- Embedded Software Systems: Hartrum, T.C.; Lamont, G.B.
- Environmental Attitudes and Behaviors: Lofgren, S.T.
- Environmental Chemical Analysis: Burggraf, L. W.
- Environmental Impacts of Equipment and Facilities: Bleckmann, C.A.; Dungey, C.E.; Nixon, W.B.; Shelley, M. L.; Deckro, R. F.; Jackson, J. A.; Kloeber, J. M.
- Environmental Management: Bleckmann, C.A.; Lofgren, S.T.; Shelley, M.L.; Nixon, W.B.; Heyse E.; Goltz, M. N.; Deckro, R.F.; Jackson, J.A.; Kloeber, J.M.
- Environmental Management Systems: Lofgren, S. T.; Nixon, W. B.
- Environmental Microbiology: Bleckmann, C.A.
- Environmental Protection: Deckro, R. F.; Jackson, J. A.; Kloeber, J. M.
- Environmental Remediation: Chemical and Radioactive: Bleckmann, C.A.; Perram, G.P.; Nixon, W.B.; Burggraf, L.; Heyse, E.; Goltz, M. N.
- Environmental Risk Assessment: Chan, Y.; Heyse, E.C.; Shelley, M.L.; Nixon, W.B.; Deckro, R.F.; Jackson, J.A.; Kloeber, J.M.
- Environmental Risk Reduction Engineering: Heyse, E.C.; Lofgren, S.T.; Nixon, W.B.; Goltz, M. N.; Shelley, M. L.
- Epitaxial Crystal Growth: Lott, J.A.
- Expert Systems: Brown, F.M.; Gunsch, G.H.; Banks, S. B.; Styzt, M.R.
- Facilities Engineering Management: Lofgren, S.T.; Nixon, W. B.
- Facility Location: Chan, Y.; Nixon W.B.; Lofgren, S. T.; Deckro, R.F.; Moore, J.T
- Fatigue: Mall, S.; Palazotto, A.N.
- Fault Detection and Isolation in Dynamic Systems: Maybeck, P.S.
- Finite Array Scattering (EM Waves): Terzuoli, A.J.; Collins, P.J.
- Finite Elements/Differences: Mall, S.; Mathews, K.A.; Palazotto, A.N.; Quinn, D.W.; Terzuoli, A.J.
- Fire Control: Pachter, M.
- Flexible Structure Control: Hall, C.D.; Liebst, BS; Maybeck, P.S.; Pachter, M.
- Flight Control Systems: D'Azzo, J.J.; Hall, C.D.; Houppis, C.H.; Liebst, BS; Maybeck, P.S.; Pachter, M.
- Flight Test Engineering: Liebst, BS; Pachter, M.
- Fluid Dynamics, Viscous/Incompressible: Beran, P.S.; Bons, J. P.; Franke, M. E.; King, P.I.
- Fluid Mechanics: Beran, P.S.; Bons, J.P.; Franke, M. E.; King, P. I.; Little, J. K.
- Fluidics: Franke, M. E.
- Forecasting: Chan, Y.
- Fourier Optics: Kabrisky, M.J.; Terzuoli, A.J.; Welsh, B.M.
- Fracture Mechanics: Mall, S.
- Frequency Selective Surfaces: Collins, P. J.
- Fuzzy Logic Control: Lamont, G.B.; Pachter, M.
- Gas Dynamics: Beran, P.S.; King, P.I.; Perram, G.P.; Franke, M. E.
- Gas Turbine Cooling: Bons, J. P.
- General Systems Theory: Kramer, S.C.; Pohl, E.A.
- Geographic Information Systems: Chan, Y.
- Global Communications: Raines, R. A.
- Goal Programming: Chan, Y.; Deckro, R.F.; Moore, J.T.
- Goodness-of-Fit Reliability Testing: Moore, A.H.; Pohl, E.A.; Crown, J.S.
- Graph Theory: Lamont, G.B.; Potoczny, H.B.
- Graphics: Styzt, M.R.; Wailes, T.S.; Shomper, K. A.
- Ground Water Modeling: Heyse, E.C.; Lair, A.V.; Oxley, M.E.; Wood, A.; Shelley, M.L.; Goltz, M. N.
- Ground Water Monitoring and Remediation: Bleckmann, C.A.; Burggraf, L.W.; Heyse, E. C.; Goltz, M.N.
- Guidance & Control: Houppis, C.H.; Liebst, BS; Maybeck, P.S.; Pachter, M.

GRADUATE SCHOOL OF ENGINEERING

Guidance and Navigation: Maybeck, P.S.; Pachter, M.; DeVilbiss, S. L.
Hazardous Materials Management: Nixon, W.B.
Hazardous Waste Management: Heyse, E.C.; Nixon, W. B.; Goltz, M. N.
Hazardous Waste Treatment Technologies: Goltz, M. N.; Heyse, E. C.; Nixon, W. B.
Heat Transfer: Bons, J. P.; Franke, M. E.; King, P.I.; Little, J. K.
Human Information Processing: Kabrisky, M.J.
Hypersonics: Little, J. K.
Image Generation/Storage/Processing: Kabrisky, M.J.; Shomper, K.A.; Welsh, B.M.
Image Reconstruction: Martin, J.B.; Terzuoli, A.J.; Welsh, B.M.
Imaging, Sensors and Signal Processing: Burggraf, L.; Welsh, B.M.; Suter, B.W.; DeSimio, M.P.
Industrial Engineering: Chrissis, J.W.; Deckro, R.F.
Inertial Navigation Systems: Maybeck, P.S.
Information Systems: Talbert, M. L.
Information Operations: Gunsch, G. H.; Raines, R. A.
Information Survivability: Gunsch, G. H.; Raines, R. A.
Information Warfare: Gunsch, G.H.; Raines, R. A.
Infrared Systems: Luke, T.E.
Integer Programming: Chan, Y.; Deckro, R.F.; Moore, J.T.; Hill, R. R.
Intelligent Interfaces: Banks, S. B.
Intelligent Systems: Kabrisky, M.J.; Gunsch, G.H.; Banks, S. B.
Inventory Analysis and Control: Deckro, R.F.
Ionospheric Physics: Wolf, P.J.
Job-Shop Scheduling: Deckro, R.F.
Kalman Filters: Maybeck, P.S.; Pachter, M.
Knowledge Based Systems: Talbert, M. L.
Laser Diagnostics: Roh, W.B.
Laser Optics: Wolf, P.J.; Largent, C.C.
Laser Spectroscopy: Burggraf, L.W.; Hengehold, R.L.; Perram, G.P.; Roh, W.B.; Wolf, P.J.
Laser/Material Interactions: Wolf, P.J.
Lasers: Chemical: Perram, G.P.; Roh, W.B.
Lasers: Semiconductor: Lott, J.A.; Roh, W.B.; Largent, C. C.
Lasers: Vertical Cavity Surface Emitting: Lott, J.A.
Learning Theory: Reynolds, D.E.
Lidar: Welsh, B.M.
Life Cycle Management: Deckro, R.F.
Linear Optics: Kabrisky, M. L.
Linear Programming: Deckro, R.F.; Chrissis, J.W.; Moore, J.T.; Chan, Y.; Jackson, J.A.
Linear Systems: Kabrisky, M.J.; Maybeck, P.S.; Pachter, M.; Terzuoli, A.J.; Welsh, B.M.; Pohl, E. A.
Logic Design: Brown, F.M.; Lamont, G.B.
Logistics: Chan, Y.; Deckro, R.F.
Low Observables: Terzuoli, A.J.; Collins, P. J.
Machine Learning: Gunsch, G.H.; Kabrisky, M.J.
Maintainability: Pohl, E.A.; Moore, A.H.; Terzuoli, A.J.; Murdock, W.P.
Management Cybernetics: Reynolds, D.E.
Management Engineering: Deckro, R.F.
Management Planning and Control: Deckro, R.F.; Nixon W. B.
Manufacturing: Deckro, R. F.
Mass Transport Phenomena: Shelley, M.L.; Heyse, E.; Goltz, M. N.
Mathematical Models: Deckro, R. F.; Moore, J. T.
Mathematical Programming: Chan, Y.; Chrissis, J.W.; Lamont, G.B.; Moore, J.T.; Pachter, M.; Deckro, R.F.; Reid, T. F.
Maximum Thrust Propulsive Nozzles: Franke, M. E.
Mechanics: Impact and Penetration: Torvik, P.J.
Medical Imaging: Martin, J.B.; Styzt, M.R.; Terzuoli, A.J.; Collins, P.J.

GRADUATE SCHOOL OF ENGINEERING

Meso-Scale Meteorology: Askue, C. A.; Walters, M. K.
 Meteorological Data: Talbert, M. L.
 Meteorology: Askue, C. A.; Walters, M.K.; Tuell, J.P.; Dungey, C.E.; Goldizen, D. T.
 Microelectronics: Lott, J.A.
 Microwave Acoustics: Terzuoli, A.J.
 Mid-Infrared Semiconductor Lasers: Largent, C.C.
 Military Space Systems: Stytz, M.R.
 Models: Deckro, R. F.; Hill, R. R.
 Molecular Dynamics: Perram, G.P.; Little, J. K.
 Molecular Spectroscopy: John, G; Perram, G.P.; Weeks, D.E.; Wolf, P.J.
 Multi-Chip Module Fabrication: Bright, V.M.
 Multicriteria Decision Making: Chan, Y.; Pachter, M.; Pohl, E.A.; Jackson, J.A.
 Multirate and Wavelet Signal Processing: Suter, B.W.
 Multivariable Control: D'Azzo, J.J.; Houpis, C.H.; Lamont, G.B.; Liebst, B.S.; Maybeck, P.S. Pachter, M.
 Multivariate Analysis: Barr, D.R.; Lamont, G.B.; Maybeck, P.S.; Reynolds, D.E.; Bauer, K. W.; Gardner, S. J.
 Network Analysis: Deckro, R.F.
 Network Flows: Chan, Y.; Deckro, R.F.
 Neural Networks: Bauer, K.W.; Kabrisky, M.J.; Oxley, M.E.; Pachter, M.
 Neutral Particle Beam Effects: Martin, J.B.
 Neutral Particle Beam/Fusion Plasma Heating: Bailey, W.F.
 Nondiffracting Radiation Imaging: Martin, J.B.
 Nonlinear Control: Pachter, M.; Wiesel, W.E.; Mathews, K. A.; Weeks, D. E.
 Nonlinear Dynamics: Agnes, G. S.; Beran, P.S.; Liebst, B.S.; Pachter, M.; Palazotto, A.N.; Weeks, D.E.; Wiesel, W.E.
 Nonlinear Mechanics: Beran, P.S.; Calico, R.A.; Pachter, M.; Palazotto, A.N.; Wiesel, W.E.
 Nonlinear Optics: Luke, T.E.; Roh, W.B.
 Nonlinear Programming: Chrissis, J.W.; Deckro, R.F.
 Nonlinear Systems Stability: Beran, P.S.; Pachter, M.; Wiesel, W.E.
 Nonlinear Vibrations: Pachter, M.; Palazotto, A. N.
 Nonlinear/Stochastic Systems Analysis: Kramer, S.C.; Maybeck, P.S.; Pachter, M.; Reid, T.F.
 Nuclear Fallout Modeling: Bridgman, C.J.
 Nuclear Measurements: Burggraf, L.W.
 Nuclear Power: Bailey, W.F.; Bridgman, C.J.; Martin, J.B.; Mathews, K.A.; Susalla, M.
 Nuclear Radiation Detection: John, G; Martin, J.B.; Burggraf, L.
 Nuclear Weapon Effects: Bridgman, C.J.; Martin, J.B.; Mathews, K.A.; Susalla, M.
 Numerical Analysis: Bailey, W.F.; Baker, W.P.; Beran, P.S.; Chilton, L. K.; Mathews, K.A.; Moore, A.H.; Palazotto, A.N.; Oxley, M.E.; Quinn, D.W.; Wood, A.; Terzuoli, A.J.;
 Numerical Weather Prediction: Walters, M.K.
 Object-Oriented Programming and Simulation: Hartrum, T.C.; Lamont, G.B.; Shomper, K.A.; Kloeber, J.; Bailey, T.G.; Miller, J. O.
 Operating Systems: Hartrum, T. C.
 Operations Research: Cain, J.P.; Chan, Y.; Chrissis, J.W.; Dietz, D.C.; Moore, A.H.; Moore, J.T.; Pachter, M.; Pohl, E.A.; Reid, T.F.; Deckro, R.F.; Miller, J. O.; Jackson, J. A.; Murdock, W. P.; Bailey, T. G.; Crown, J. S.
 Operations Testing and Evaluation: Pohl, E. A.; Reid, T.F.; Crown, J. S.
 Optical Diagnostics: Hengehold, R.L.; Perram, G.P.; Largent, C. C.; Wolf, P.J.
 Optical Information Processing: Kabrisky, M.J.; Roh, W.B.; Welsh, B.M.
 Optical Neural Computers: Kabrisky, M.J.
 Optimal Control: Wiesel, W.E.; Reid, T. F.
 Optimal Estimation and Stochastic Control: Kramer, S.C.; Maybeck, P.S.; Pachter, M.
 Optimization, Network and Combinatorial: Chan, Y.; Lamont, G.B.; Moore, J.T.; Deckro, R.F.
 Optimization Theory: Chan, Y.; Chrissis, J.W.; Lamont, G.B.; Maybeck, P.S.; Moore, J.T.; Oxley, M.E.; Pachter, M.; Pohl, E. A.; Deckro, R.F.; Jackson, J.A.; Reid, T. F.
 Optoelectronic/Semiconductor Device Physics: Hengehold, R.L.; Lott, J.A.; Luke, T.E.; Yeo, Y.K.; Largent, C.C.
 Orbital Mechanics: Wiesel, W.E.

GRADUATE SCHOOL OF ENGINEERING

Organic Chemistry: Bleckman, C. A.; Burggraf, L.W.; Goltz, M. N.; Heyse, E. C.
Parallel Processor Systems: Gallagher, D. M.
Parallel Processors: Lamont, G.B.; Gallagher, D.M.; Raines, R. A.
Parameter Estimation: Lamont, G.B.; Maybeck, P.S.; Pachter, M.; Quinn, D.W.; DeVilbiss, S. L.
Parametric Programming: Deckro, R.F.; Moore, J.T.
Pattern Recognition: Chan, Y.; DeSimio, ; Kabrisky, M.J.; Terzuoli, A.J.
PERT: Deckro, R.F.
Pharmacokinetic Modeling: Quinn, D.W.; Shelley, M.L.
Phased Array Antennas: Terzuoli, A.J.; Collins, P.J.
Physics of the Upper Atmosphere (Ionosphere & Magnetosphere): Dungey, C.E.; Goldizen, D.T.; Bailey, W. F.
Planetary Astronomy: Pachter, M.; Wiesel, W.E.
Pointing and Tracking: Maybeck, P.S.; Pachter, M.
Pollution Prevention: Gardner, S. J.; Lofgren, S. T.
Probability and Statistics: Barr, D.R.; Dietz, D.C.; Moore, A.H.; Reynolds, D.E.; Pohl, E.A.; Reid, T.F.; Crown, J.S.; Murdock, W.P.; Bailey, T. G.; Jackson, J. A.; Bauer, K. W.; Miller, J. O.; Hill, R. R. ; DeVilbiss, S. L.
Probabilistic Design: Pohl, E. A.
Production Models: Deckro, R. F.
Program Management: Lofgren, S. T.; Nixon, W. B.
Quadratic Programming: Deckro, R. F.
Quality Improvement: Reynolds, D.E.; Pohl, E.A.; Bauer, K.W.; Lofgren, S. T.; Nixon, W. B.; Hill, R.R.
Quantitative Feedback Theory: Houppis, C.H.; Pachter, M.
Quantum Chemical Modeling: Burggraf, L. W.
Queueing Networks: Chrissis, J.W.; Dietz, D.C.; Chan, Y.
Radar: Pyati, V.P.; Terzuoli, A.J.; Welsh, B.M.
Radar Cross-Section Statistics: Pyati, V.P.; Terzuoli, A.J.; Welsh, B.M.
Radar Detection: Pyati, V.P.; Terzuoli, A.J.; Welsh, B.M.
Radar Measurements: Pyati, V.P.; Terzuoli, A.J.; Welsh, B.M.; Collins, P.J.
Radar Meteorology: Dungey, C. E.
Radomes: Collins, P. J.
Random Variate Modeling and Generation: Maybeck, P.S.; Miller, J. O.; Hill, R.R.
Reliability: Barr, D.R.; Dietz, D.C.; Moore, A.H.; Pohl, E.A.; Crown, J.S.; Murdock, W.P.
Research Management: Deckro, R.F.
Resource Management: Deckro, R.F.
Remote Sensing: Dungey, C.E.; Luke, T.E.; Terzuoli, A.J.; Welsh, B.M.
Risk Analysis: Pohl, E.A.; Deckro, R.F.; Jacson, J.A.; Kloeber, J.M.; Heyse, E C.; Shelley, M. L.
Risk Communication and Management: Lofgren, S. T.; Nixon, W. B.; Shelley, M. L.
Robotics: Spenny, C.H.
Robust Design Methods: Pohl, E. A.
Routing: Chan, Y.; Deckro, R.F.; Moore, J.T.
Satellite Communications Systems: Raines, R.A.
Satellite Dynamics: Spenny, C.H.; Wiesel, W.E.
Satellite Image Processing: Chan, Y.
Scheduling: Deckro, R.F.; Moore, J.T.; Hill, R.R.
Scientific Visualization: Beran, P.S.; Kanko, MA; Lamont, G.B.; Shomper, K.A.; Stytz, M.R.; Little, J. K.
Search Theory: Pachter, M.
Secure Communications: Gunsch, H. B.; Potoczny, H. B.; Raines, R. A.
Semiconductor Physics: Hengehold, R.L.; Yeo, Y.K.
Semiconductors: Plasma Processing: Lott, J.A.
Shell Analysis: Palazotto, A.N.
Shock and Vibration: Palazotto, A.N.
Signal Processing, Parametric/Non Parametric: Kabrisky, M.J.
Signal Processing, Fast Algorithms: Kabrisky, M.J.; Suter, B.W.
Silicon Chemistry: Burggraf, L.W.
Smart Structures: Agnes, G. S.

GRADUATE SCHOOL OF ENGINEERING

Software Engineering: Graham, R. P.
Software Engineering, Architectures: Hartrum, T.C.; Kanko, MA; Lamont, G.B.; Graham, R. P.
Software Engineering, Formal Methods: Hartrum, T.C.; Lamont, G.B.; Graham, R. P.
Software Engineering, Knowledge-Based: Lamont, G.B.; Graham, R. P.
Solid State Physics: Hengehold, R.L.; Lott, J.A.; Luke, T.E.; Yeo, Y.K.
Space Communications: Raines, R. A.
Spatial-Temporal Modeling: Chan, Y.; Lamont, G.B.
Spectral Estimation: Pachter, M.
Spectroscopy: Electron/Laser: Hengehold, R. L.
Speech and Image Processing: DeSimio, M. P.; Kabrisky, M.J.
Speech Recognition: DeSimio, M.P.; Kabrisky, M.J.
Statistical Aspects of Simulation: Bauer, K.W.; Maybeck, P.S.; Reynolds, D.E.; Pohl, E.A.; Kloeber, J.M.; Bailey, T.G.; Miller, J.O.; Hill, R.R.; Reid, T. F.; Crown, J. S.
Statistical Modeling: Chan, Y.; Reynolds, D.E.; Nixon, W. B.; Pohl, E.A.; Jackson, J.A.; Miller, J. O.; Hill, R. R.; Crown, J. S.
Statistical Optics: Welsh, B.M.
Statistical Process Control: Pachter, M.; Reynolds, D.E.; Pohl, E.A.; Bauer, K.W.
Statistics: Applied/Theoretical: Bauer, K.W.; Cain, J.P.; Moore, A.H.; Reynolds, D.E.; Crown, J.S.; Gardner, S.J.; Reid, T.F.; Miller, J. O.
Statistics: Environmental: Bauer, K.W.; Dungey, C.E.; Reynolds, D.E.
Statistics: Multivariate: Barr, D.R.; Maybeck, P.S.; Reynolds, D.E.; Bauer, K. W.; Gardner, S.J.
Statistics: Parameteric: Reynolds, D.E.; Crown, J. S.
Stochastic Search Algorithms: Pachter, M.
Stochastic Systems: Barr, D.R.; Chrissis, J.W.; Dietz, D.C.; Maybeck, P.S.; Moore, A.H.; Pohl, E.A.; Reid, T.F.; Murdock, W.P.
Stress Analysis: Torvik, P.J.
Structural Control Optimization/Dynamics: Calico, R.A.; Liebst, BS; Pachter, M.
Structural Dynamics: Turcotte, J.
Superconductivity: Yeo, Y.K.
Superlattice Structures: Hengehold, R.L.; Lott, J.A.; Yeo, Y.K.
Supersonic Flight Trajectory Optimization: Pachter, M.
Synoptic Meteorology: Askue, C. A.; Walters, M. K.
System Dynamics: Pachter, M.; Jackson, J. A.; Moore, A. H.; Shelley, M. L.
Systems Engineering: Talbert, M. L.
Systems Engineering and Design: Kramer, S; Pohl, E.
System Dynamics: Moore, A.H.; Pachter, M.; Jackson, J.A.
Systems Management: Deckro, R.F.
Technology Assessment: Chan, Y.
Technology Transfer: Deckro, R.F.
Telecommunications: Raines, R. A.; Reid, T. F.
Test Design and Analysis: Pohl, E. A.; Crown, J. S.
Thin Films: Wolf, P.J.
Thrust Vector Control: Pachter, M.; Franke, M. E.
Time-Frequency Analysis: Suter, B.W.
Total Quality Management: Deckro, R. F.; Jackson, J. A.
Transportation Systems Analysis: Chan, Y., Deckro, R.F.; Moore, J.T.
Tropical Meteorology: Askue, C. A.
Very Large Scale Integrated Circuits (VLSI): Gelosh, D.S.
Vibration and Damping: Torvik, P.J.
Vibration Suppression: Active and Passive: Agnes, G. S.
Vibrational Dynamics: Calico, R.A.; Pachter, M.; Palazotto, A.N.; Weeks, D.E.
Virtual Environment/Reality: Shomper, K.A.; Stytyz, M.R.
Viscoplasticity: Palazotto, A.N.
Visible Photonic Devices: Lott, J.A.

GRADUATE SCHOOL OF ENGINEERING

Voice Communications: Raines, R. A.
Wargaming: Kloeber, J. E.P.; Pachter, M.; Stytz, M.R.
Wastewater Analysis and Treatment: Bleckmann, C.A.; Nixon, W.B.; Goltz, M. N.; Heyse, E. C.; Shelley, M. L.
Wave Propagation: Baker, W.P.; Terzuoli, A.J.; Collins, P. J.
Wave Propagation and Scattering: Baker, W.P.; Terzuoli, A.J.; Collins, P.J.
Wavelet Analysis: Oxley, M.E.; Kabrisky, M.J.; Suter, B.W.
Weakly Ionized Gases: Bailey, W.F.
Weather Analysis and Forecasting: Walters, M. K.; Dungey, C.E.; Askue, C.A.
Weapons Effects (Non-Nuclear): Franke, M. E.

3.3 FACULTY CREDENTIALS

AGNES, GREGORY, S., Capt, Assistant Professor of Aerospace Engineering, Dept of Aeronautics and Astronautics, (AFIT/ENY); BSA.E., Rensselaer Polytechnic Institute, 1989; MSA.E., University of Maryland, 1991; PhD, Engineering Mechanics, Virginia Tech, 1997. Capt Agnes previously worked in the Structural Dynamics Branch of the Air Force Research Laboratory. His research interests center around 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 and ASME. Tel. 937-255-6565, x4317 (DSN 785-6565, x 4317), email = gagnes@afit.af.mil

ALDRICH, JAMES R., Maj, Assistant Professor of Engineering and Environmental Management, Department of Engineering and Environmental Management, (AFIT/ENV); BCE, Georgia Institute of Technology - highest honors, 1981; MS, Clemson University, 1986; PhD, University of Cincinnati, 1992. Maj Aldrich's research interests include environmental management systems, environmental auditing, pollution prevention, hazardous waste management and treatment, and environmental economics. His current research is centered around the effects of changing discount and inflation rates with respect to net present value calculations. His recent papers have included studies on long term liability prediction and methods to use environmental audit results as a measure of an environmental management program's "health." Tel. 937-255-2998 (DSN 785-2998), email = jaldrich@afit.af.mil.

ASKUE, CECILIA A., Lt Col, Assistant Professor of Atmospheric Physics, Dept of Engineering Physics, (AFIT/ENP); BS Mathematics, Mississippi State University, 1978; MS Atmospheric Science, Colorado State University, 1984; PhD Meteorology, Texas A&M University, 1989. Lt Col Askue's research interests include upper tropospheric energy transport and applications of synoptic meteorology. She has published in the areas of ionospheric sounding, typhoons and tropical upper tropospheric waves. Lt Col Askue is a member of the American Meteorological Society and the National Weather Association. Tel. 937-255-3636, x4645 (DSN 785-3636, x 4645), email = caskue@afit.af.mil

BAILEY, T. GLENN, Lt Col, Assistant Professor of Operations Research, Dept 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). Tel 937 255-6565, x 4332 (DSN 785-6565, x 4332), email = gbailey@afit.af.mil

BAILEY, WILLIAM F., Associate Professor of Physics, Dept 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, and currently include the study and application of plasma processing of semiconductors, development of ion sources, and the application of thermionics to space power systems. Dr. Bailey has published over 20 papers in referred conferences and international journals. He has chaired over 20 theses and dissertations and is a member of Tau Beta Pi, Sigma Pi Sigma, and Sigma Xi. Tel. 937-255-3636, x4501 (DSN 785-3636, x 4501), email = wbailey@afit.af.mil

BAILOR, PAUL D., Lt Col, Assistant Professor of Software Engineering, Dept of Electrical and Computer Engineering, (AFIT/ENG); B.S., University of Maryland, 1978; M.S., AFIT, 1983; Ph.D., AFIT, 1989. Maj Bailor's interests include formal methods for software engineering, software architectures engineering, analysis of embedded software systems, and parallel/distributed computation. Lt Col Bailor has published articles in parallel/distributed computation and knowledge-based software engineering. He is the curriculum chairman for graduate software engineering courses, as well as the overall Graduate Computer System program. His research on formal methods and software architectures is funded by AFOSR, Wright Laboratory, Rome Laboratory, and ASC. Lt Col Bailor has over 13 years experience in both management information and command, and control software development and maintenance. Tel. 937-255-2024 (DSN 785-2024)

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BAKER, WILLIAM P., Associate Professor, Dept 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 assignments in flight test, satellite communications, cruise missile and radar analysis. Tel. 937-255-3636, x4517 (DSN 785-3636, x4517), email = wbaker@afit.af.mil

BANKS, SHEILA B., Maj, Assistant Professor, Dept of Electrical and Computer Engineering, (AFIT/ENG); BS, University of Miami, 1984; BS, North Carolina State University; 1986; MS, North Carolina State University 1987; PhD, Clemson University, 1995. Maj Banks' research interests include Artificial Intelligence, Associate Systems, Expert Systems, Model-Based Computer Vision, and Intelligent Interfaces. Tel. 937-255-3636, x4620 (DSN 785-3636, x4620), email = sbanks@afit.af.mil

BARR, DAVID R., Associate Professor Emeritus of Statistics, Dept 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 = dbarr@afit.af.mil

BAUER, KENNETH W., Jr., Professor of Operations Research, Dept of Operational Sciences (AFIT/ENS); BS, Miami University (Ohio), 1976; MEA, University of Utah, 1980; MS, Air Force Institute of Technology, 1981; PhD, Purdue University, 1987. Dr. Bauer's research interests include the statistical aspects of simulation, design of experiments, neural networks, and multivariate statistics. Tel. 937-255-6565, x4326 (DSN 785-6565, x4326), email = kbauer@afit.af.mil

BERAN, PHILIP S., Assistant Professor of Aerospace Engineering, Dept of Aeronautics and Astronautics, (AFIT/ENY); BS, Engineering Physics, Cornell University, 1982; MS, Aeronautical Engineering, California Institute of Technology, 1983; Ph.D Aeronautics, California Institute of Technology, 1989. Dr. Beran's interests are in the field of computational fluid dynamics. Of current interest are fluid dynamical problems involving bifurcation and stability exchange (e.g., flutter, vortex breakdown and lift-stall hysteresis). In algorithm development he focuses continuation methods, direct methods, parallel computational techniques and total variation diminishing schemes. Dr. Beran is the author or co-author of over 10 technical articles. He is funded by AFOSR to study the breakdown of compressible, swirling flows, and by the NASP Program Office to develop parallelized numerical algorithms for the analysis of high-speed flow. Tel. 937-255-3636, x4587 (DSN 785-3636, x4587), email = pberan@afit.af.mil

BLECKMANN, CHARLES A., Associate Professor of Engineering and Environmental Management, Department of Engineering and Environmental 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, radiolabeled surfactant biodegradation, biodegradation and biodeterioration of materials, bioassay laboratory audits, and site environmental compliance audits. Tel. 937-255-3636, x4721 (DSN 785-3636, x4721), email = cbleckma@afit.af.mil

BONS, JEFFREY P., Capt, Assistant Professor of Aeronautical Engineering, Dept of Aeronautics and Astronautics, (AFIT/ENY); BS, Massachusetts Institute of Technology, 1988; MS, Massachusetts Institute of Technology, 1990; PhD, Massachusetts Institute of Technology, 1997. Capt 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. Capt Bons' previous assignment was a research engineer in the Propulsion Directorate of Wright Laboratory where he was awarded the 1995 S.D.Heron Award for Basic Research. Tel. 937-255-3636x 4643 (DSN 785-3636, x4643), email = jbons@afit.af.mil

GRADUATE SCHOOL OF ENGINEERING

BOWERSOX, RODNEY D.W., Assistant Professor of Aerospace Engineering, Dept of Aeronautics & Astronautics (AFIT/ENY); B.S., Virginia Polytechnic Institute and State University, 1988; M.S., Virginia Polytechnic Institute and State University, 1990; Ph.D., Virginia Polytechnic Institute and State University, 1992. Dr. Bowersox's research interests include high speed compressible aero/gas dynamics and propulsion. He is also interested in experimental, theoretical and computational aspects of high speed compressible turbulence as applied to hypersonic boundary layers and high speed mixing. Dr. Bowersox also concentrates on the design and instrumentation of high speed high enthalpy impulse facilities, e.g. skin friction and heat transfer gauges. In addition, he does work in support of experimental NASP SCRAMjet studies. He has published several papers relevant to compressible turbulence measurements and modeling, and is a member of AIAA and ASME. Tel. 937-255-3069 (DSN 785-3069)

BOWMAN, W. JERRY, Lt Col, Associate Professor of Aerospace Engineering, Dept of Aeronautics and Astronautics, (AFIT/ENY); BS, Brigham Young University, 1978; MSE, University of Central Florida, 1982; PhD, Air Force Institute of Technology, 1987. His research interests center around computational and experimental modeling of heat transfer phenomena. Lt Col Bowman has published numerous papers in conferences and journals, was the recipient of the US Air Force Academy Basic Research Award 1990; and has been chosen as Outstanding Engineer of the year by the Region V of the American Institute of Aeronautics and Astronautics (AIAA). Tel. 937-255-3069 (DSN 785-3069)

BRIDGMAN, CHARLES J., Professor Emeritus of Nuclear Engineering, Dept of Engineering Physics, (AFIT/ENP); BS, United States Naval Academy, 1952; MS, North Carolina State University, 1958; PhD, North Carolina State University, 1963. Dr. Bridgman's interests center around nuclear weapon effects and military nuclear power applications. He has been associated with nuclear weapon defense since 1952. He was a member of the first military team to be operational on the H bomb. His current research interest is nuclear weapon fallout modeling. He is the author of 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 = bridgman@afit.af.mil

BRIGHT, VICTOR M., Associate Professor of Electrical Engineering, Dept of Electrical and Computer Engineering (AFIT/ENG); BSEE, University of Colorado at Denver, 1986; MSEE, Georgia Institute of Technology, 1989; PhD, Georgia Institute of Technology, 1992. Professor Bright's interests include micro-electro-mechanical systems, piezoelectric materials and devices, opto-electronic/ semiconductor device physics, microelectronics, silicon micromachining, and integrated optics. Tel. 937-255-2024 (DSN 785-2024), email = vbright@afit.af.mil

BROWN, WILLIAM M., Professor and Head of Electrical and Computer Engineering, Dept of Electrical and Computer Engineering (AFIT/ENP); 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. Tel. 937-255-3636, x4613 (DSN 785-3636, x4613), email = wbrown@afit.af.mil

BURGGRAF, LARRY W., Associate Professor of Engineering Physics, Dept 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. Dr. Burggraf's experimental research interests include in situ measurements of environmental contaminants using nuclear measurements and laser spectroscopy. His modeling interests center on quantum chemical calculations for solgel glasses, ceramic materials and structural polymer materials. Tel. 937-255-3636, x4507 (DSN 785-3636, x4507), email = lburggra@afit.af.mil

GRADUATE SCHOOL OF ENGINEERING

BUTER, THOMAS A., Maj, Assistant Professor of Aerospace Engineering, Dept of Aeronautics & Astronautics (AFIT/ENY); B.S. Aerospace Engineering, North Carolina State Univ, 1981; M.S. Mechanical Engineering, North Carolina State Univ, 1983; Ph.D. Aerospace Engineering, Arizona State Univ, 1992. Maj Buter previously worked in the Flight Dynamics Laboratory in experimental and computational aerodynamics. His current research is concentrated in the areas of boundary-layer stability and transition, interdisciplinary computational fluid dynamics, and high-angle-of-attack vortex aerodynamics. He has published articles related to boundary layer receptivity, and dynamic stall. Tel. 937-255-3069 (DSN 785-3069)

CAIN, JOSEPH P., Emeritus Associate Professor of Economics, Dept of Operational Sciences (AFIT/ENS); B.B.A., Southern Methodist University, 1963; MA, Southern Methodist University, 1969; PhD, Southern Methodist University, 1974. Dr Cain's research interests include economic theory and analysis, cost estimating and analysis, applied statistics, war gaming and labor-management relations. Tel. 937-255-6565, x4324 (DSN 785-6565, x4324), email = jpcain@afit.af.mil

CALICO, ROBERT, A., JR., Professor of Aerospace Engineering and Dean of Graduate School Engineering (AFIT/EN), B.S., University of Cincinnati, 1966; M.S., University of Cincinnati, 1968; Ph.D., 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 vibrations analysis. Tel. 937-255-3025 (DSN 785-3025) email = rcalico@afit.af.mil

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

Pohl, Edward A., ASCQ Certified Reliability Engineer, Cert. No. 03857

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

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

3.6 DOCTORAL DISSERTATIONS

Capt Douglas Blake, "Advances in Time-Domain Electromagnetic Simulation Capabilities through the Use of Overset Grids and Massively Parallel Computing," (AFIT/DS/ENY/97-02), Faculty Advisor: Buter, Sponsor: WL/FIM

Maj Robert T. Brigantic, "Optimization Considerations for Adaptive Optics Digital Imagery Systems," (AFIT/DS/ENS/97-02), Faculty Advisor: Bauer, Sponsor: PL/OY-YY

Capt Randy P. Broussard, "Physiologically-Based Vision Modeling Applications and Gradient Descent-Based Parameter Adaptation of Pulse Coupled Neural Networks," (AFIT/DS/ENG/97-02), Faculty Advisor: Rogers, Sponsor: PL/LIMI

Maj Gary D. Barmore, "A 2-D Numerical Simulation and Analysis of a Simple Band Model for the Priz Spatial Light Modulator," (AFIT/DS/ENP/96-05), Faculty Advisor: Luke, Sponsor: AFIT

Maj Jeffrey A. Beck, "Relative Equilibria of a Rigid Satellite in a Central Gravitational Field," (AFIT/DS/ENY/97-6), Faculty Advisor: Hall, Sponsor: AFOSR/NM

Douglas L. Davis, "Numerical Analysis of Two and Three Dimensional Recessed Flame Holders for Scramjet Applications," (AFIT/DS/ENY/96-12), Faculty Advisor: Bowersox, Sponsor: WL/POPS

Maj Kevin Ford, "Reorientation of Flexible Spacecraft Using Momentum Exchange Devices," (AFIT/DS/ENY/97-07), Faculty Advisor: Hall, Sponsor: AFOSR/NM

Capt Robert E. Franklin, "Spectroscopic and Kinetic Studies of Bismuth Dimers," (AFIT/DS/ENP/97-04), Faculty Advisor: Perram, Sponsor: AFOSR/NC

Capt Patrick E. Godfrey, "Kinetics and Spectroscopy of BrNO," (AFIT/DS/ENP/97-06), Faculty Advisor: Perram, Sponsor: AFOSR/NL

Capt Robert P. Graham, "Algebraic Algorithm Design and Local Search," (AFIT/DS/ENG/96-10), Faculty Advisor: Bailor, Sponsor: NSA/Y21

Capt Michael R. Gregg, "Optical Detection Properties of Silicon Germanium Quantum Well Structures," (AFIT/DS/ENP/96-07), Faculty Advisor: Hengehold, Sponsor: AFOSR/NE

Capt Kelly D. Hammett, "Control of Nonlinear Systems Via State Feedback State-Dependent Riccati Equation Techniques," (AFIT/DS/ENY/97-3), Faculty Advisor: Ridgely, Sponsor: AFOSR/NM

Capt Gordon T. Hengst, "Experimental Investigation of Nonlinear Dynamics in Single Mode Semiconductor Laser Diodes with Phase Conjugate Feedback," (AFIT/DS/ENP/97-07), Faculty Advisor: Roh, Sponsor: PL/LIDD

Capt David J. Lee, "Evaluation and Application of Space Telescope Aberration Sensing Using Phase Diversity," (AFIT/DS/ENP/97-05), Faculty Advisor: Roggemann, Sponsor: PL/LI

Capt Curtis E. Martin, "Perceptual Fidelity for Digital Color Imagery," (AFIT/DS/ENG/96-14), Faculty Advisor: Rogers, Sponsor: NIMA/SUADE

Capt Stephen M. Matechik, "Using Kriging to Interpolate Distributed Volumetric Medical Data", (AFIT/DS/ENG/96-15), Faculty Advisor: Stytz, Sponsor: RL/IRD

GRADUATE SCHOOL OF ENGINEERING

Capt Kenneth McClellan, "A Crosstalk Correcting Router That Uses Online Noise Simulation to Route High-Speed Multichip Modules," (AFIT/DS/ENG/97-16), Faculty Advisor: Wailes, Sponsor: WL/AADI

Capt Laurence D. Merkle, "Analysis of Linkage-Friendly Genetic Algorithms," (AFIT/DS/ENG/96-11), Faculty Advisor: Lamont, Sponsor: AFMC/Materials Directorate

Capt Russel B. Miller, "Manual Tracking Flight Control with Amplitude and Rate Constrained Dynamic Actuators," (AFIT/DS/ENG/96-15), Faculty Advisor: Pachter, Sponsor: WL/FIGS

Maj Matthew P. Pepin, "Maximum Likelihood Estimation of Exponentials in Unknown Colored Noise for Target Identification in Synthetic Aperture Radar Images," (AFIT/DS/ENG/96-09), Faculty Advisor: Sacchini, Sponsor: WL/AARA

Capt Thomas F. Rathbun, "Autonomous Construction of Multi-Layer Perception Neural Networks," (AFIT/DS/ENG/97-01), Faculty Advisor: Rogers, Sponsor: WL/AACS

Capt James R. Reid, "Microelectromechanical Isolation of Acoustic Wave Resonators," (AFIT/DS/ENG/96-12), Faculty Advisor: Bright, Sponsor: AMSEL-RD-IE-TI

Capt Odell Reynolds, "Countering the Effects of Measurement Noise During the Identification of Dynamical Systems," (AFIT/DS/ENG/96-13), Faculty Advisor: Pachter, Sponsor: WL/FIGS

Capt Joel J. Schubbe, "Thickness Effects on a Cracked Aluminum Plate with Composite Repair," (AFIT/DS/ENG/97-04), Faculty Advisor: Mall, Sponsor: WL/FIB

James D. Scofield, "Electrical Characterization of Intrinsic and Induced Deep Level Defects in Hexagonal SiC," (AFIT/DS/ENG/96-08), Faculty Advisor: Yeo, Sponsor: WL/POO

Capt Eric Silkowski, "Luminescence Study of Ion-Implanted Gallium Nitride," (AFIT/DS/ENG/96-09), Faculty Advisor: Yeo, Sponsor: AFOSR/NE

Maj Ricky E. Sward, "Extracting Functionally Equivalent Object-Oriented Designs from Legacy Imperative Code," (AFIT/DS/ENG/97-04), Faculty Advisor: Hartrum, Sponsor: RL/C3CB

Maj Donald W. Thompson, "Stepped Tip Gap Effects on a Transonic Axial-Flow Compressor Rotor," (AFIT/DS/ENG/97-05), Faculty Advisor: King, Sponsor: WL/POTX

Carl P. Tilman, "Numerical and Experimental Investigation of the Flowfield Near a Wrap-Around Fin," (AFIT/DS/ENG/95-06), Faculty Advisor: Buter, Sponsor: WL/MNA

Capt Monte D. Turner, "Degenerate Four-Wave Mixing of Cr, Tm, Ho:YAG Laser Output at 2.1 μm in Semiconductor Compounds," Faculty Advisor: Roh, Sponsor: WL/AAJL

Maj Gregory Vansuch, "Four-Wave Mixing and Optical Phase Conjugation in Vertical Cavity Surface Emitting Lasers," (AFIT/DS/ENG/97-01), Faculty Advisor: Roh, Sponsor: WL/AAJL

Maj Edward M. Williams, "Modeling Intelligent Control of Distributed Cooperative Inferencing," (AFIT/DS/ENG/97-03), Faculty Advisor: Santos, Sponsor: AFOSR/NM

Maj Craig J. Willits, "Nested Fork-Join Queuing Networks and Their Application to Mobility Airfield Operations Analysis," (AFIT/DS/ENG/96-01), Faculty Advisor: Dietz, Sponsor: AMCSAF/XPYA

Capt William D. Wood, "Electromagnetic Scattering from a Cavity in a Ground Plane: Theory and Experiment," (AFIT/DS/ENG/96-04), Faculty Advisor: Pyati, Sponsor: WL/AACT

GRADUATE SCHOOL OF ENGINEERING

3.7 MASTERS' THESES BY PROGRAM

ASTRONAUTICAL ENGINEERING

Capt G. E. Johnson, "Supersonic Flutter Analysis for F-16 Store Configuration Clearance," (AFIT/GA/ENY/97M-01), Faculty Advisor: Beran, Sponsor: 46OG/OGS

AERONAUTICAL ENGINEERING

Capt M. C. Cherry, "Investigation of Residual Strength and Fatigue Life of Unstiffened Aluminum Panels with Multiple Site Damage," (AFIT/GAE/ENY/95D-06), Faculty Advisor: Mall, Sponsor: WL/FIBEC

Capt T. J. Dickinson, "Performance Analysis of a Liquid Metal Heat Pipe Space Shuttle Experiment," (AFIT/GAE/ENY/96D-02), Faculty Advisor: Bowman, Sponsor: PL/BTPT

Capt D. W. Ebdon, "Model Predictive Control of Aerospace," (AFIT/GAE/ENY/96D-03), Faculty Advisor: Heise, Sponsor: WL/FIGC

Maj S. M. Lee, "Residual Strength and Fatigue Characterization of SCS-b/Ti-b-x," (AFIT/GAE/ENY/96D-07), Faculty Advisor: Robertson, Sponsor: WL/MLLN

Capt R. J. McMullan, "Influence of Tip Clearance on the Flowfield in a Compressor Cascade with a Moving Endwall," (AFIT/GAE/ENY/96D-05), Faculty Advisor: King, Sponsor: WL/POTF

Capt L. J. Nadon, "Multidisciplinary and Multiobjective Optimization in Conceptual Design for Mixed-Stream Turbofan Engines," (AFIT/GAE/ENY/96D-6), Faculty Advisor: Kramer, Sponsor: WL/POTA

Capt R. C. Wier, "Experimental investigation of Supersonic Turbulent Boundary layer with Pressure Gradient Effects," (AFIT/GAE/ENY/96D-04), Faculty Advisor: Bowersox, Sponsor: AFOSR/NA

Capt M. P. Wilson, "Experimental Investigation of Transverse Supersonic Gaseous Injection Enhancement into Supersonic Flow," (AFIT/GAE/ENY/96D-8), Faculty Advisor: Bowersox, Sponsor: WL/POPT

Capt P. T. Edwards, "Modern Flight Control Design, Implementation, and Flight Test," (AFIT/GAE/ENY/97M-01), Faculty Advisor: Liebst, Sponsor: WL/FIGC

Capt P. J. Peters, "The Effects of Elevator Rate Limiting and Stick Dynamics on Longitudinal Pilot Induced Oscillations," (AFIT/GAE/ENY/97M-02), Faculty Advisor: Liebst, Sponsor: WL/FIGC

Capt A. N. Ruiz, "Residual Strength after Fatigue of a Cross-Ply Metal Matrix Composite at Elevated Temperatures," (AFIT/GAE/ENY/97J-01), Faculty Advisor: Mall, Sponsor: AFOSR/NA

S. C. Coghlan, "Fiber Volume Fraction Effects on Fatigue Response of a SCS-6/Ti-15-3 Metal Matrix Composite at Elevated Temperature," (AFIT/GAE/ENY/97S-01), Faculty Advisor: Mall, Sponsor: WL/POTC

APPLIED PHYSICS

1st Lt G. C. Bainum, "Characteristics of Nonstar-Global Positioning System (GPS) Scintillation in the Polar Cap During Cycle 22 Solar Maximum," (AFIT/GAP/ENP/96D-01), Faculty Advisor: Goldizen, Sponsor: PL/GPIA

Capt L. M. Berman, "Laser-Induced Breakdown Spectroscopy on Solution Samples Using Surface Excitation," (AFIT/GAP/ENP/96D-03), Faculty Advisor: Wolf, Sponsor: CEWES-EE-S

GRADUATE SCHOOL OF ENGINEERING

Capt D. L. Byers, "Investigation of Ba, BaO, Sr, and SrO Pulsed Laser-Induced Vapor Plumes in N(2)O(2), Microwave Discharged O(2), and Vacuum at Low Laser Fluency," (AFIT/GAP/ENP/96D-04), Faculty Advisor: Wolf, Sponsor: AFOSR/NL

Capt R. D. Coxwell, "Validation of the Parameterized Real-Time Inospheric Specification Model (PRISM) Version 1.66, Using TOPEX Electron Content (TEC) Data," (AFIT/GAP/ENP/96D-05), Faculty Advisor: Goldizen, Sponsor: PL/GPIM

Capt K. D. Greene, "Modeling of Linear Absorption Coefficients in Si/Si(1-x)G(x) Multiple Quantum Well Photodectors," (AFIT/GAP/ENP/96D-06), Faculty Advisor: Weeks, Sponsor: RL/ERE

Capt S. R. Hick, "Demonstrating Optical Abberation Correction with a MEMS Micro-Mirror Device," (AFIT/GAP/ENP/96D-07), Faculty Advisor: Roggemann, Sponsor: AFOSR/NE

Capt B. D. McKellar, "Unfolding the High Energy Electron Flux from CCRES Fluxmeter Measurements," (AFIT/GAP/ENP/96D-08), Faculty Advisor: Mathews, Sponsor: PL/GPSP

Capt P. C. Roberts, "Modeling and Simulation of Optical Characteristics of Microelectromechanical Mirror Arrays," (AFIT/GAP/ENP/96D-09), Faculty Advisor: Roggeman, Sponsor: FOSR/NE

COMPUTER ENGINEERING

Capt D. M. Conrad, "Data-Driven Process Discovery: A Discrete Time Algebra for Relational Signal," (AFIT/GCE/ENG/96D-01), Faculty Advisor: Santos, Sponsor: WL/MLIM

Capt K. W. Stauffer, "An Object-Oriented Discrete-Event Simulation System for Hierarchical Parallel Simulations," (AFIT/GCE/ENG/96D-02), Faculty Advisor: Hartum, Sponsor: WL/AASE

COMPUTER SCIENCE

1st Lt S. L. Abrahamson, "Pulse Coupled Neural Networks for the Segmentation of Magnetic Resonance Brain Images," (AFIT/GCS/ENG/96D-01), Faculty Advisor: Rogers, Sponsor: AFIT

Capt T. A. Adams, "Requirements, Design and Development of a Rapidly Reconfigurable, Photorealistic Virtual Cockpit Prototype," (AFIT/GCS/ENG/96D-02), Faculty Advisor: Stytz, Sponsor: AFIT

1st Lt M. C. Baker, "Evaluation of Segmentation for Bone Structures in 3D Rendering of Ultrasound Residual Limb Images," (AFIT/GCS/ENG/96D-03), Faculty Advisor: Stytz, Sponsor: Computerized Anthropometric Research and Design Lab

1st Lt James L. Benslay, "A Domain Independent Framework for Developing Knowledge Based Computer Generated Forces," (AFIT/GCS/ENG/96D-04), Faculty Advisor: Santos, Sponsor: ESC/AVM

Capt B. J. Borghetti, "Inference Algorithm Performance and Selection Under Constrained Resources," (AFIT/GCS/ENG/96D-05), Faculty Advisor: Santos, Sponsor: AFOSR/NM

Capt G. C. Dalton, "Artificial Cochlea Design Using Micro-Electro-Mechanical Systems," (AFIT/GCS/ENG/96D-06), Faculty Advisor: Bright, Sponsor: PL/VTEE

Capt G. B. Garcia, "Design and Prototype of the AFIT Virtual Emergency Room: A Distributed Virtual Environment for Emergency Medical Simulation," (AFIT/GCS/ENG/96D-07), Faculty Advisor: Stytz, Sponsor: DARPA

GRADUATE SCHOOL OF ENGINEERING

1st Lt R. A. Harrington, "Utilizing Bayesian Techniques for User Interface Intelligence," (AFIT/GCS/ENG/96D-08), Faculty Advisor: Banks, Sponsor: AFOSR/NM

Capt D. T. Hightower, "Dynamic Relevence Filtering in ATM-Based Exercises," (AFIT/GCS/ENG/96D-09), Faculty Advisor: Shomper, Sponsor: AFIT

Capt E. P. Hobson, "Simulation-Based Performance Evaluation of Resource Allocation Algorithms for Implementation in the SHF-DAMA Satellite Network," (AFIT/GCS/ENG/96D-10), Faculty Advisor: Raines, Sponsor: DISA

Capt G. G. Jacquot, "A Common Architecture for Simulation Viewing Over Multiple Protocol Environments," (AFIT/GCS/ENG/96D-11), Faculty Advisor: Hartrum, Sponsor: WL/AASE

Capt M. L. June, "Analysis and Design of Standard Telerobotic Control Software," (AFIT/GCS/ENG/96D-12), Faculty Advisor: Schneider, Sponsor: SA-ALC/TIER

1st Lt C. E. Kaiser, "Refined Genetic Algorithms for Polypeptide Structure Prediction," (AFIT/GCS/ENG/96D-13), Faculty Advisor: Lamont, Sponsor: WL/MLPJ

Capt T. Karagias, "Elicitation of Formal Systems Specifications from an Object Oriented Damain Model," (AFIT/GCS/ENG/96D-14), Faculty Advisor: Hartrum, Sponsor: RL/C3C

Capt T. R. Kellett, "Molecular Articulation in Response to Interactive Atomic Forces in DOCKER," (AFIT/GCS/ENG/96D-15), Faculty Advisor: Shomper, Sponsor: WL/MLPJ

Capt K. M. Lemley, "Toward a Standard Interface for Telerobotics Applications Using ADA," (AFIT/GCS/ENG/96D-16), Faculty Advisor: Kanko, Sponsor: DISA/CFSW/JEXSV

Capt L. J. Lyle, "A Test-Case based Approach to Bayesian Knowledge Base Incompleteness Detection and Correction," (AFIT/GCS/ENG/96D-17), Faculty Advisor: Santos, Sponsor: AFOSR/NM

Capt J. Marti, "A Size and Power Efficient High Performance Multiplier for Real-Time DSP Applications," (AFIT/GCS/ENG/96D-18), Faculty Advisor: Wailes, Sponsor: WL/AAMW

Capt M. B. Messamore, "Integrating the Capability Maturity Model for Software and the Quality Air Force Criteria," (AFIT/GCS/ENG/96D-19), Faculty Advisor: Kanko, Sponsor: HQ SSG/FM

1st Lt J. E. Moritz, "Graphical Display of a Missile Endgame Scenario," (AFIT/GCS/ENG/96D-20), Faculty Advisor: Shomper, Sponsor: WL/MNMF

Capt G. K. Moy, "A Specific Network Link and Path Likelihood Prediction Tool," (AFIT/GCS/ENG/96D-21), Faculty Advisor: Raines, Sponsor: NSA

Capt H. G. Park, "The Development of a Scenario Translator for Distributed Simulations," (AFIT/GCS/ENG/96D-22), Faculty Advisor: Shomper, Sponsor: AFIT

Capt E. C. Pilloud, "SimWorx: An ADA 95 Distributed Simulation Application Framework Supporting HLA and DI," (AFIT/GCS/ENG/96D-23), Faculty Advisor: Kanko, Sponsor: DISA/DVSW/JEXSV

Capt T. J. Schalick, "An Approach to Evaluate Software Effectiveness," (AFIT/GCS/ENG/96D-24), Faculty Advisor: Kanko, Sponsor: HQ AFOTEC/SAS

Capt D. J. Stein, "Utilizing Data and Knowledge Mining for Probabilistic Knowledge Bases," (AFIT/GCS/ENG/96D-25), Faculty Advisor: Banks, Sponsor: AFOSR/NM

GRADUATE SCHOOL OF ENGINEERING

Capt D. K. Stenger, "Survivability Analysis of the Iridium Low Earth Orbit Satellite Network," (AFIT/GCS/ENG/96D-26), Faculty Advisor: Raines, Sponsor: HQ SWC/AE

Capt J. E. Thompson, "Student Modeling in an Intelligent Tutoring System," (AFIT/GCS/ENG/96D-27), Faculty Advisor: Rogers, Sponsor: AL/HRTI

Capt W. D. Wells, "Collaborative Workspaces within Distributed Virtual Environments," (AFIT/GCS/ENG/96D-28), Faculty Advisor: Stytz, Sponsor: AFIT

Capt G. E. Williams, "Solar System Modeler: A Distributed Virtual Environment for Space Visualization and GPS Navigation," (AFIT/GCS/ENG/96D-29), Faculty Advisor: Stytz, Sponsor: PL

Capt J. D. Young, "Probabilistic Temporal Reasoning," (AFIT/GCS/ENG/96D-30), Faculty Advisor: Santos, Sponsor: AFOSR/NM

Capt E. J. Zeek, "Speaker Recognition by Hidden Markov and Neural Networks," (AFIT/GCS/ENG/96D-31), Faculty Advisor: Rogers, Sponsor: AL/CFBA

Capt V. B. Zurita, "An Architecture for Computer Generated Forces in Complex Distributed Virtual Environments," (AFIT/GCS/ENG/96D-32), Faculty Advisor: Stytz, Sponsor: ESC/AVM

Capt D. Y. Sheu, "An Incremental Language Conversion Method to Convert C++ to Ada 95," (AFIT/GCS/ENG/96D-33), Faculty Advisor: Kanko, Sponsor: DISA/DVSW/JEXSV

1st Lt O. J. Dona, "Response Surface Methodology: An Analytical Method for Locating Migrated Contaminant Sources," (AFIT/GCS/ENG/97M-01), Faculty Advisor: Quinn, Sponsor: OO-ALC/EMR

ELECTRICAL ENGINEERING

Capt H. Cho, "Development of Object-Based Teleoperator Control for Unstructured Applications," (AFIT/GE/ENG/96D-01), Faculty Advisor: Schneider, Sponsor: SA-ALC/TIER

Capt H. A. Arb, "A Two-Phase Damped Exponential Model for Speech Synthesis," (AFIT/GE/ENG/96D-02), Faculty Advisor: DeSimio, Sponsor: AL/CFBA

Capt A. B. Ghordlo, "Analysis of Multimode Low-Probability-of-Intercept (LPI) Communications with Atmospheric Effects," (AFIT/GE/ENG/96D-03), Faculty Advisor: Gerace, Sponsor: WL/AAAI-2

Capt E. C. Gumbs, "Performance Analysis of Preemption Algorithms in an IDNX Circuit Switch Communications Network," (AFIT/GE/ENG/96D-05), Faculty Advisor: Raines, Sponsor: DoD

Capt F. G. Harmon, "Application of a Finite-Volume Time-Domain Maxwell Equation Solver to Three-Dimensional Objects," (AFIT/GE/ENG/96D-06), Faculty Advisor: Terzuoli, Sponsor: WL/FIM

Capt R. Janoso, "Performance Analysis of Dynamic Routing Protocols in a Low Earth Orbit Satellite Data Network," (AFIT/GE/ENG/96D-08), Faculty Advisor: Raines, Sponsor: SWC/AES

Capt J. E. Larson, "Adaptive Neural Network Controller for ATM Traffic," (AFIT/GE/ENG/96D-09), Faculty Advisor: Rogers, Sponsor: RL/C3B

Capt M. C. Laxton, "Analysis and Simulation of a New Code Tracking Loop for GPS Multipath Mitigation," (AFIT/GE/ENG/96D-10), Faculty Advisor: DeVilbiss, Sponsor: WL/AACN

GRADUATE SCHOOL OF ENGINEERING

Capt R. W. Lewis, "Multiple Model Adaptive Estimation and Control Redistribution for the VISTA F-16," (AFIT/GE/ENG/96D-11), Faculty Advisor: Maybeck, Sponsor: WL/FIGS-2

2d Lt J. B. McKay, "Optimization of a GPS-Based Navigation Reference System," (AFIT/GE/ENG/96D-12), Faculty Advisor: Pachter, Sponsor: 746TS/TGGED

Capt E. M. Ochoa, "Clustered Microcalcification Detection Using Optimized Difference of Gaussians," (AFIT/GE/ENG/96D-13), Faculty Advisor: Rogers, Sponsor: AL/CFAL

Capt W. J. Park, "Interference Suppression for Spread Spectrum Signals Using Adaptive Beamforming and Adaptive Temporal Filter," (AFIT/GE/ENG/96D-14), Faculty Advisor: Gerace, Sponsor: WL/AAAI-2

Capt R. S. Parks, "An Intelligent Spread Spectrum Jammer," (AFIT/GE/ENG/96D-15), Faculty Advisor: Gerace, Sponsor: WL/AAMW

Capt R. A. Radcliffe, "Design and Simulation of a Transform Domain Communication System," (AFIT/GE/ENG/96D-16), Faculty Advisor: Gerace, Sponsor: WL/AAMW

Capt T. D. Reeves, "Performance Analysis of a Hartman Wavefront Sensor Used for Sensing Atmospheric Turbulence Statistics," (AFIT/GE/ENG/96D-17), Faculty Advisor: Welsh, Sponsor: PL/LIG

1st Lt J. C. Savage, "Evaluation of Design Tools for Rapid Photocopying Signal Processing Algorithms," (AFIT/GE/ENG/96D-18), Faculty Advisor: Lamont, Sponsor: WL/AASH

2d Lt J. D. Shannon, "Experimental Investigation of Radar Cross Section Spatial Correlation Properties for a Point Scattering Target," (AFIT/GE/ENG/96D-19), Faculty Advisor: Welsh, Sponsor: WL/XPN

Capt J. M. Taylor, "Evaluation of Near Field Electromagnetic Scattering Codes for Use in Anti-Aircraft Missile Endgame Simulations," (AFIT/GE/ENG/96D-20), Faculty Advisor: Terzuoli, Sponsor: USSTRATCOM/J534

2d Lt N. A. White, "MMAE Detection of Interference/Jamming and Spoofing in a DGPS-Aided Inertial System," (AFIT/GE/ENG/96D-21), Faculty Advisor: DeVilbiss/Maybeck, Sponsor: WL/AACN

Capt K. S. Younis, "Weighted Mahalanobis Distance for Hyper-Ellipsoidal Clustering," (AFIT/GE/ENG/96D-22), Faculty Advisor: Rogers, Sponsor: WL/AARA

Capt Y. C. Jang, "Diffraction Analysis and Tactical Applications of Signal Propagation over Rough Terrain," (AFIT/GE/ENG/97J-01), Faculty Advisor: Gerace, Sponsor: RL/ERCS

2d Lt G. Roelke, "A Framework for an Automated Compilation System for Reconfigurable Architectures," (AFIT/GE/ENG/97M-01), Faculty Advisor: Potoczny, Sponsor: NAIC/TACC

Capt T. R. Schmoyer, "Net-Centric Design and Analysis of Information Systems," (AFIT/GE/ENG/97M-03), Faculty Advisor: Raines, Sponsor: Information Systems for C4

Capt R. M. Vincent, "Three-Dimensional Sound Enhancement of a Radar Warning Receiver," (AFIT/GE/ENG/97M-04), Faculty Advisor: DeSimio, Sponsor: AL/CFBA

Capt A. L. Mortensen, "Improved Load Alleviation Capability for a KC-135," (AFIT/GE/ENG/97S-01), Faculty Advisor: Spenny, Sponsor: KC-135 SPO (ASC/GRR)

GRADUATE SCHOOL OF ENGINEERING

ENGINEERING AND ENVIRONMENTAL MANAGEMENT

Capt P. F. Sand, "A Modeling Study Investigation Instantaneous Plume Rise of Rocket Exhaust," (AFIT/GEE/ENC/96D-01), Faculty Advisor: Quinn, Sponsor: SMC/CLNM

1st Lt J. L. Blackmon, "Neural Network Classification of Environmental Samples," (AFIT/GEE/ENG/96D-04), Faculty Advisor: Rogers, Sponsor: AFTAC (TMNE)

Capt T. S. Choi, "Independent Verification and Validation of the HAZMAT CTAT Developed by the Human Systems center at Brooks AFB," (AFIT/GEE/ENS/96D-01), Faculty Advisor: Kloeber, Sponsor: HSC/EMP

1st Lt A. Hinojos, "Applying Probabilistic Risk Assessment and Decision Analysis Techniques to Avoid Excessive Remedial Investigation Cost," (AFIT/GEE/ENS/96D-02), Faculty Advisor: Kloeber, Sponsor: AL/OEMH

Capt C. M. Still, "Determining the Optimum Strategy of Techniques from the Municipal Solid Waste Management Hierarchy to Maximize Social Value," (AFIT/GEE/ENS/96D-03), Faculty Advisor: Kloeber, Sponsor: 88 ABW/EMC

Capt G. A. Williams, "A Decision Support Zmodel for Municipal Solid Waste Recycling at United States Air Force Installations," (AFIT/GEE/ENS/96D-04), Faculty Advisor: Kloeber, Sponsor: AFCEA/CEM

1st Lt T. A. Baudendistel, "A Multivariate Analysis of USAF Sanitary Landfills," (AFIT/GEE/ENV/96D-01), Faculty Advisor: Nixon, Sponsor: AL/EQW-OL

Capt T. P. deVenoge, "Development of Synthetic Soils for Sorption Mass Transfer Model Validation," (AFIT/GEE/ ENV/96D-02), Faculty Advisor: Heyse, Sponsor: AFOSR/NA

Capt A. A. Ference, "Habitat Suitability Mapping through Integration of Multicriteria Evaluation Techniques with a Geographic Information System (GIS)," (AFIT/GEE/ENV/96D-03), Faculty Advisor: Shelley, Sponsor: AC/S Envirn, Caspers, Marine Corps/Envr Dept Comp

Capt B. K George, "Local Effects of Solid Rocket Exhaust on Stratospheric Ozone Concentrations," (AFIT/GEE/ENV/96D-04), Faculty Advisor: Bleckmann, Sponsor: AFIT

Capt M. S. Harner, "Mass Transport of Volatile Organic Compounds Between the Saturated and Vadose Zones," (AFIT/GEE/ENV/96D-05), Faculty Advisor: Heyse, Sponsor: HQ AFMC/CEVR

Capt T. P. Haynie, "Economic Valuation of Air Force Environmental Resources: A Contingent Valuation Case Study", (AFIT/GEE/ENV/96D-06), Faculty Advisor: Lofgren, Sponsor: AFIT

Capt J. L. Heiderscheidt, "Development of Site Characterization Simulator Specifications," (AFIT/GEE/ENV/96D-07), Faculty Advisor: Heyse, Sponsor: AL/EQ

Lt Col K. F. Hwang, "Study of Desorption of Contaminant from Synthetic Soil," (AFIT/GEE/ENV/96D-08), Faculty Advisor: Heyse, Sponsor: AFOSR/NA

1st Lt W. E. Iseman, "Evaluating the Hazardous Materials (HAZMAT) Pharmacy Among Air Force MAJCOMS Using Waste Reductions and Activity Indicators," (AFIT/GEE/ENV/ 96D-09), Faculty Advisor: Nixon, Sponsor: HQ USAF/ILC

1st Lt G. P. Joyce, "A Comparative Analysis of Two Alternatives to Chemical Aircraft Paint Stripping," (AFIT/GEE/ ENV/96D-10), Faculty Advisor: Nixon, Sponsor: AFIT

GRADUATE SCHOOL OF ENGINEERING

1st Lt M. S. Laudenslager, "Environmental Attitudes and Behaviors: An Examination of the Antecedents of Behavior Among Air Force Members at Work," (AFIT/GEE/ENV/96D-11), Faculty Advisor: Lofgren, Sponsor: AFIT

C. Meshako, "The Biodegradation Characteristics of Proposed Fuel System Icing Inhibitors (FSII)," (AFIT/GEE/ENV/96D-12), Faculty Advisor: Bleckmann, Sponsor: WL/POS

Capt K. K. Mika, "Investigation of Sorption Mass Transfer Models Using Synthetic Soil," (AFIT/GEE/ENV/96D-13), Faculty Advisor: Heyse, Sponsor: AFOSR/NA

Capt B. E. Owens, "Analysis of Air Force Environmental Justice Methodology," (AFIT/GEE/ENV/96D-14), Faculty Advisor: Lofgren, Sponsor: AFCEE/ECP

1st Lt M. B. Peake, "Modeling Plant Uptake of Metal in Constructed Wetlands Supported by Experimentally Derived Uptake Rates," (AFIT/GEE/ENV/96D-15), Faculty Advisor: Shelley, Sponsor: AFIT

Capt C. D. Perham, "An Activity Driver Based Analysis of Hazardous Materials Usage at Wright-Patterson AFB," (AFIT/GEE/ENV/96D-16), Faculty Advisor: Lofgren, Sponsor: AFIT

Capt R. J. Resler, "Evaluation of Hazardous Materials Life Cycle Cost Tools for Use in Air Force Hazardous Materials Pharmacies," (AFIT/GEE/ENV/96D-17), Faculty Advisor: Nixon, Sponsor: AFIT

Capt P. A. Schantz, "Environmental Restoration Project Peer Review Assessment," (AFIT/GEE/ENV/96D-18), Faculty Advisor: Lofgren, Sponsor: AFCEE/ERC

Capt J. D. Thomas, "Surfactant Enhanced Microbial Degradation of JP-8 Contaminated Soil," (AFIT/GEE/ENV/96D-19), Faculty Advisor: Bleckmann, Sponsor: WL Flues Directorate

Capt C. N. Wendt, "Modeling Marine Exposure to Polychlorinated Biphenyls from Sunken Ships," (AFIT/GEE/ENV/96D-20), Faculty Advisor: Shelley, Sponsor: AL (Occupational & Environmental Health Dir., Toxicology Div.)

Capt C. J. West, "Development of a Basis for a Hazardous Materials and Waste Management System for Air Force Contingency Deployments," (AFIT/GEE/ENV/96D-21), Faculty Advisor: Nixon, Sponsor: HQ ACC/ENV/PP

Capt C. D. Wolf, "Limitations in the Use of Partitioning Tracers for Estimating the Volume and Distributions of NAPLS," (AFIT/GEE/ENV/96D-22), Faculty Advisor: Heyse, Sponsor: OC-ALC/EMR

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Capt A. C. Goodnite, "Adaptation of the Air Weather Service Fog Model to Forecast Radiation Fog Events in the Southeast United States," (AFIT/GM/ENP/97M-06), Faculty Advisor: Dungey, Sponsor: HQ AWS/XOX

2d Lt E. C. Harris, "Validation of the Air Force Global Weather Center Relocatable Window Model Total Cloud Forecast," (AFIT/GM/ENP/97M-07), Faculty Advisor: Walters, Sponsor: HQ AFGWC/SYSM

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Capt C. D. Stargardt, "Quantification of Weather Effects on Imaging Laser Radar," (AFIT/GM/ENP/97M-09), Faculty Advisor: Dungey, Sponsor: WL/MNGS

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1st Lt T. E. Combs, "Statistical Modeling and Optimization of Nuclear Waste Vitrification," (AFIT/GOA/ENS/97M-02), Faculty Advisor: Kloeber, Sponsor: DOE/WP1

Capt S. M. Cox, "Ranking and Geneating Alternatives for the National Air Intelligence Center's (NAIC) Resource Allocation Strategy," (AFIT/GOA/ENS/97M-03), Faculty Advisor: Kloeber, Sponsor: NAIC/XP

Maj E. T. Fair, "Modeling MIRV Footprint Constraints in the Weapons Assignment Model," (AFIT/GOA/ENS/97M-04), Faculty Advisor: Moore, Sponsor: USSTRATCOM J533

Maj D. E. Fuller, "Optimizing Airborne Area Surveillance Asset Placement," (AFIT/GOA/ENS/97M-05), Faculty Advisor: Moore, Sponsor: HQ AF/XOOC

Capt T. M. Gesling, "Modeling a Battlefield and the Resulting Effects in a Theater-Level Combat Model," (AFIT/GOA/ENS/97M-06), Faculty Advisor: Kloeber, Sponsor: Naval Post Graduate School

Maj J. B. Grier, "Linking Enhancement Dollars to an Alternative Force Structures' Combat Capability Using RSM," (AFIT/GOA/ENS/97M-07), Faculty Advisor: Jackson, Sponsor: HQ USAF/XPY

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Maj A. J. Hutfles, "Simulation Model of Fighter Pilot Assignment Process," (AFIT/GOA/ENS/97M-10), Faculty Advisor: Bailey, Sponsor: HQ AFPC/DPAOY1

Maj N. H. Pallister, "Selecting a Health Care Option for Military Beneficiaries that Minimizes Health Care Costs While Maintaining Personal Desires for Choice," (AFIT/GOA/ENS/97M-11), Faculty Advisor: Jackson, Sponsor: AFIT

Maj J. E. Parker, "Experiments on Aggregating Air Ordinance Effectiveness Data for the TACWAR Model," (AFIT/GOA/ENS/97M-12), Faculty Advisor: Jackson, Sponsor: USCENTCOM/CCCA

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Maj W. S. Kim, "Personnel Airdrop Risk Assessment Using Bootstrap Sampling," (AFIT/GOR/ENS/96D-01), Faculty Advisor: Bailey, Sponsor: W-P C-17 SPO

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2d Lt A. E. Catlin, "System Comparison Procedures for Automatic Target Recognition Systems," (AFIT/GOR/ENS/97M-03), Faculty Advisor: Bauer, Sponsor: WL/AACA

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May D. P. Durkee, "Sensitivity of Availability Estimates To Input data Characterization," (AFIT/GOR/ENS/97M-06), Faculty Advisor: Mykytka, Sponsor: HQ AFOTEC/SAL

2d Lt C. L. Evans, "Determining the Economic Plausibility of Dual Manifesting Reuseable Launch Vehicles and Resueable Orbital Transfer Vehicles for the Replenishment of Military Satellites," (AFIT/GOR/ENS/97M-07), Faculty Advisor: Bailey, Sponsor: AFOTEC/OAS

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2d Lt B. J. Grell, "A CERCLA-Based Decision Support System for Environmental Remediation Strategy Selection," (AFIT/GOR/ENS/97M-10), Faculty Advisor: Jackson, Sponsor: DOE/EM-50

Maj D. V. Hackman, "Analysis of Aircraft Sortie Generation with Concurrent maintenance and General Service Times," (AFIT/GOR/ENS/97M-11), Faculty Advisor: Dietz, Sponsor: AL/HRCF

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Capt S. E. Leach, "Transportation Modeling of Remote Radar Sites and Support Depots," (AFIT/GOR/ENS/97M-13), Faculty Advisor: Deckro, Sponsor: Programming Sq

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Capt D. L. Lyle, "Optimizing Network Security," (AFIT/GOR/ENS/97M-15), Faculty Advisor: Chan, Sponsor: NSA/R55

Capt A. F. Papatyi, "Analyzing Remediation Technologies for Department of Energy Sites Contaminated with DNAPL Pollutants," (AFIT/GOR/ENS/97M-17), Faculty Advisor: Deckro, Sponsor: DoE

1st Lt W. H. Rushing, "Modeling and Analyzing the Effect of Ground Refueling Capacity on Airfield Throughput," (AFIT/GOR/ENS/97M-19), Faculty Advisor: Dietz, Sponsor: AMC SAF/XPUA

Maj M. R. Sisson, "Applying TABU Heuristic to Wind Influenced Minimum Risk and Maximum Expected Coverage Routes," (AFIT/GOR/ENS/97M-20), Faculty Advisor: Bailey, Sponsor: HQ ACC/XP-SAS

1st Lt Huseyin Topcuoglu, "Turkish Air Mobility Modeling," (AFIT/GOR/ENS/97M-21), Faculty Advisor: Deckro/Moore, Sponsor: Turkish Air Force

1st Lt J. L. Dulin, "Decision Support Model to Select the Optimal Municipal Solid Waste Management Policy at United States Air Force Installations," (AFIT/GOR/ENS/97M-22), Faculty Advisor: Kloeber, Sponsor: AFIT

Capt D. A. Mumford, "Robust Parameter Estimation for the Mixed Weibull (seven parameter) Including the Method of Maximum Likelihood and the Method of Minimum Distance," (AFIT/GOR/ENY/97M-01), Faculty Advisor: Pohl, Sponsor: AFOTEC/SAL

2d Lt M. J. Rummer, "A Reliability Study of a Teleoperational Robotic System with Application to the Next Generation Munitions Handling System," (AFIT/GOR/ENY/97M-02), Faculty Advisor: Pohl, Sponsor: MMHE AFSEO/SKZ

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1st Lt T. Cokuysal, "A Preliminary Design of a Standardized Spacecraft Bus for Small Tactical Satellites," (AFIT/GSE/GSO/ENY/96D-01), Faculty Advisor: Kramer, Sponsor: PL/WSM

1st Lt A. Donmez, "A Preliminary Design of a Standardized Spacecraft Bus for Small Tactical Satellites," (AFIT/GSE/GSO/ENY/96D-01), Faculty Advisor: Kramer, Sponsor: PL/WSM

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Capt T. C. Krueger, "A Preliminary Design of a Standardized Spacecraft Bus for Small Tactical Satellites," (AFIT/GSE/GSO/ENY/96D-01), Faculty Advisor: Kramer, Sponsor: PL/WSM

1st Lt B. I. Robinson, "A Preliminary Design of a Standardized Spacecraft Bus for Small Tactical Satellites," (AFIT/GSE/GSO/ENY/96D-01), Faculty Advisor: Kramer, Sponsor: PL/WSM

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1st Lt G. E. Wood, "Estimation of Satellite Orientation from Space Surveillance Imagery Measured with an Adaptive Optics Telescope," (AFIT/GSO/ENP/96D-02), Faculty Advisor: Roggemann, Sponsor: PL/OL-YY

Capt K. Jang, "The Capacity of the Air Force Satellite Control Network," (AFIT/GSO/ENS/96D-01), Faculty Advisor: Moore, Sponsor: HQ AFSPC/XPA

Capt J. W. Wong, "Analysis of Tethers in Sampling Near Earth Objects," (AFIT/GSO/ENY/97J-01), Faculty Advisor: Mall, Sponsor: NASA

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Capt S. E. Leach, "Transportation Modeling of Remote Radar Sites and Support Depots," (AFIT/GOR/ENS/97M-13), Faculty Advisor: Deckro, Sponsor: ACC Programming Sq

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1st Lt W. E. Iseman, "Evaluating the Hazardous Materials (HAZMAT) Pharmacy Among Air Force MAJCOMS Using Waste Reductions and Activity Indicators," (AFIT/GEE/ENV/96D-09), Faculty Advisor: Nixon, Sponsor: HQ USAF/ILE

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Capt A. L. Mortensen, "Improved Load Alleviation Capability for a KC-135," (AFIT/GE/ENY/97S-01), Faculty Advisor: Spenny, Sponsor: KC-135 SPO (ASC/GRR)

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Capt T. P. deVenoge, "Development of Synthetic Soils for Sorption Mass Transfer Model Validation," (AFIT/GEE/ENV/96D-02), Advisor: Heyse, Sponsor: AFOSR/NA

1st Lt R. A. Harrington, "Utilizing Bayesian Techniques for User Interface Intelligence," (AFIT/GCS/ENG/96D-08), Faculty Advisor: Banks, Sponsor: AFOSR/NM

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1st Lt T. A. Baudendistel, "A Multivariate Analysis of USAF Sanitary Landfills," (AFIT/GEE/ENV/96D-01), Advisor: Maj Nixon, Sponsor: AL/EQW-OL

Capt D. W. Gregg, "Decision Boundary Analysis Feature Selection for Breast Cancer Diagnosis," (AFIT/GOR/ENG/97M-043), Faculty Advisor: Rogers, Sponsor: AL/CFHD

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1st Lt A. Hinojos, "Applying Probabilistic Risk Assessment and Decision Analysis Techniques to Avoid Excessive Remedial Investigation Cost," (AFIT/GEE/ENS/96D-02), Faculty Advisor: Kloeber, Sponsor: AL/OEMH

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Capt J. E. Thompson, "Student Modeling in an Intelligent Tutoring System," (AFIT/GCS/ENG/96D-27), Faculty Advisor: Rogers, Sponsor: AL/HRTI

Capt R. M. Vincent, "Three-Dimensional Sound Enhancement of a Radar Warning Receiver," (AFIT/GE/ENF/97M-04), Faculty Advisor: DeSimio, Sponsor: AL/CFBA

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Capt E. J. Zeek, "Speaker Recognition by Hidden Markov and Neural Networks," (AFIT/GCS/ENG/96D-31), Faculty Advisor: Rogers, Sponsor: AL/CFBA

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1st Lt G. C. Bainum, "Characteristics of Nonstar-Global Positioning System (GPS) Scintillation in the Polar Cap During Cycle 22 Solar Maximum," (AFIT/GAP/ENP/96D-01), Faculty Advisor: Goldizen, Sponsor: PL/GPIA

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Capt T. J. Dickinson, "Performance Analysis of a Liquid Metal Heat Pipe Space Shuttle Experiment", (AFIT/GAE/ENY/96D-02), Faculty Advisor: Bowman, Sponsor: PL/BTPT

1st Lt A. Donmez, "A Preliminary Design of a Standardized Spacecraft Bus for Small Tactical Satellites," (AFIT/GSE/GSO/ENY/96D-01), Faculty Advisor: Kramer, Sponsor: PL/WSM

Capt J. A. From, "A Preliminary Design of a Standardized Spacecraft Bus for Small Tactical Satellites," (AFIT/GSE/GSO/ENY/96D-01), Faculty Advisor: Kramer, Sponsor: PL/WSM

Capt T. C. Krueger, "A Preliminary Design of a Standardized Spacecraft Bus for Small Tactical Satellites," (AFIT/GSE/GSO/ENY/96D-01), Faculty Advisor: Kramer, Sponsor: PL/WSM

Capt S. R. Maethner, "Deconvolution from Wavefront Sensing Using Optimal Wavefront Estimators," (AFIT/GSO/ENP/96D-01), Faculty Advisor: Roggemann, Sponsor: PL/OL-YY

Capt B. D. McKellar, "Unfolding the High Energy Electron Flux from CCRES Fluxmeter Measurements," (AFIT/GAP/ENP/96D-08), Faculty Advisor: Mathews, Sponsor: PL/GPSP

Capt T. D. Reeves, "Performance Analysis of a Hartman wavefront Sensor Used for Sensing Atmospheric Turbulence Statistics," (AFIT/GE/ENG/96D-17), Faculty Advisor: Welsh, Sponsor: PL/LIG

1st Lt B. I. Robinson, "A Preliminary Design of a Standardized Spacecraft Bus for Small Tactical Satellites," (AFIT/GSE/GSO/ENY/96D-01), Faculty Advisor: Kramer, Sponsor: PL/WSM

Capt G. E. Williams, "Solar System Modeler: A Distributed Virtual Environment for Space Visualization and GPS Navigation," (AFIT/GCS/ENG/96D-29), Faculty Advisor: Stytz, Sponsor: PL

1st Lt G. E. Wood, "Estimation of Satellite Orientation from Space Surveillance Imagery Measured with an Adaptive Optics Telescope," (AFIT/GSO/ENP/96D-02), Faculty Advisor: Roggemann, Sponsor: PL/OL-YY

ROME LABORATORY

Capt K. D. Greene, "Modeling of Linear Absorption Coefficients in Si/Si(1-x)G(x) Multiple Quantum Well Photodectors," (AFIT/ENP/96D-06), Faculty Advisor: Weeks, RL/ERE

Capt Y. C. Jang, "Diffraction Analysis and Tactical Applications of Signal Propagation over Rough Terrain," (AFIT/GE/ENG/97J-01), Faculty Advisor: Gerace, Sponsor: RL/ERCS

GRADUATE SCHOOL OF ENGINEERING

Capt T. Karagias, "Elicitation of Formal Systems Specifications from an Object Oriented Domain Model," (AFIT/GCS/ENG/96D-14), Faculty Advisor: Hartrum, Sponsor: RL/C3C

Capt J. E. Larson, "Adaptive Neural Network Controller for ATM Traffic," (AFIT/GE/ENG/96D-09), Faculty Advisor: Rogers, Sponsor: RL/C3B

WRIGHT LABORATORY

1st Lt M. C. Baker, "Evaluation of Segmentation for Bone Structures in 3D Rendering of Ultrasound Residual Limb Images," (AFIT/GCS/ENG/96D-03), Faculty Advisor: Stytz, Sponsor: Computerized Anthropometric Research and Design Lab

2d Lt A. E. Catlin, "System Comparison Procedures for Automatic Target Recognition Systems," (AFIT/GOR/ENS/97M-03), Faculty Advisor: Bauer, Sponsor: WL/AACA

Capt M. C. Cherry, "Investigation of Residual Strength and Fatigue Life of Unstiffened Aluminum Panels with Multiple Site Damage," (AFIT/GAE/ENY/95D-06), Faculty Advisor: Mall, Sponsor: WL/FIBEC

S. C. Coghlan, "Fiber Volume Fraction Effects on Fatigue Response of a SCS-6/Ti-15-3 Metal Matrix Composite at Elevated Temperature," (AFIT/GAE/ENY/97S-01), Faculty Advisor: Mall, Sponsor: WL/POTC

Capt D. M. Conrad, "Data-Driven Process Discovery: A Discrete Time Algebra for Relational Signal," (AFIT/GCE/ENG/96D-01), Faculty Advisor: Santos, Sponsor: WL/MLIM

Capt D. W. Ebdon, "Model Predictive Control of Aerospace," (AFIT/GAE/ENY/96D-03), Faculty Advisor: Heise, Sponsor: WL/FIGC

Capt P. T. Edwards, "Modern Flight Control Design, Implementation, and Flight Test," (AFIT/GAE/ENY/97M-01), Faculty advisor: Liebst, Sponsor: WL/FIGC

Capt A. B. Ghordlo, "Analysis of Multimode Low-Probability-of-Intercept (LPI) Communications with Atmospheric Effects," (AFIT/GE/ENG/96D-03), Faculty Advisor: Gerace, Sponsor: WL/AAAI-2

Capt F. G. Harmon, "Application of a Finite-Volume Time-Domain Maxwell Equation Solver to Three-Dimensional Objects," (AFIT/GE/ENG/96D-06), Faculty Advisor: Terzuoli, Sponsor: WL/FIM

Capt G. G. Jacquot, "A Common Architecture for Simulation Viewing Over Multiple Protocol Environments," (AFIT/GCS/ENG/96D-11), Faculty Advisor: Hartrum, Sponsor: WL/AASE

1st Lt C. E. Kaiser, "Refined Genetic Algorithms for Polypeptide Structure Prediction," (AFIT/GCS/ENG/96D-13), Faculty Advisor: Lamont, Sponsor: WL/MLPJ

Capt T. R. Kellett, "Molecular Articulation in Response to Interactive Atomic Forces in DOCKER," (AFIT/GCS/ENG/96D-15), Faculty Advisor: Shomper, Sponsor: WL/MLPJ

Capt J. Marti, "A Size and Power Efficient High Performance Multiplier for Real-Time DSP Applications," (AFIT/GCS/ENG/96D-18), Faculty Advisor: Wailes, Sponsor: WL/AAMW

Capt M. C. Laxton, "Analysis and Simulation of a New Code Tracking Loop for GPS Multipath Mitigation," (AFIT/GE/ENG/96D-10), Faculty Advisor: DeVilbiss, Sponsor: WL/AACN

Capt S. M. Lee, "Residual Strength and Fatigue Characterization of SCS-b/Ti-b-x," (AFIT/GAE/ENY/96D-07), Faculty Advisor: Robertson, Sponsor: WL/MLLN

GRADUATE SCHOOL OF ENGINEERING

Capt R. W. Lewis, "Multiple Model Adaptive Estimation and Control Redistribution for the VISTA F-16," (AFIT/GE/ENG/96D-27), Faculty Advisor: Maybeck, Sponsor: WL/FIGS-2

Capt R. J. McMullan, "Influence of Tip Clearance on the Flowfield in a Compressor Cascade with a Moving Endwall," (AFIT/GAE/ENV/96D-05), Faculty Advisor: King, Sponsor: WL/POTF

C. Meshako, "The Biodegradation Characteristics of Proposed Fuel System Icing Inhibitors (FSII)," (AFIT/GEE/ENV/96D-12), Faculty Advisor: Bleckmann, Sponsor: WL/POS

1st Lt J. E. Moritz, "Graphical Display of a Missile Endgame Scenario," (AFIT/GCS/ENG/96D-20), Faculty Advisor: Shomper, Sponsor: WL/MNMF

Capt L. J. Nadon, "Multidisciplinary and Multiobjective Optimization in Conceptual Design for Mixed-Stream Turbofan Engines," (AFIT/GAE/ENV/96D-6), Faculty Advisor: Kramer, Sponsor: WL/POTA

Capt W. J. Park, "Interference Suppression for Spread Spectrum Signals Using Adaptive Beamforming and Adaptive Temporal Filter," (AFIT/GE/ENG/96D-14), Faculty Advisor: Gerace, Sponsor: WL/AAAI-2

Capt R. S. Parks, "An Intelligent Spread Spectrum Jammer," (AFIT/GE/ENG/96D-15), Faculty Advisor: Gerace, Sponsor: WL/AAMW

Capt P. J. Peters, "The Effects of Elevator Rate Limiting and Stick Dynamics on Longitudinal Pilot Induced Oscillations," (AFIT/GAE/ENV/97M-02), Faculty Advisor: Liebst, Sponsor: WL/FIGC

Capt R. A. Radcliffe, "Design and Simulation of a Transform Domain Communication System," (AFIT/GE/ENG/96D-16), Faculty Advisor: Gerace, Sponsor: WL/AAMW

1st Lt J. C. Savage, "Evaluation of Design Tools for Rapid Photocopying Signal Processing Algorithms," (AFIT/GE/ENG/96D-18), Faculty Advisor: Lamont, Sponsor: WL/AASH

2d Lt J. D. Shannon, "Experimental Investigation of Radar Cross Section Spatial Correlation Properties for a Point Scattering Target," (AFIT/GE/ENG/96D-19), Faculty Advisor: Welsh, Sponsor: WL/XPN

Capt K. W. Stauffer, "An Object-Oriented Discrete-Event Simulation System for Hierarchical Parallel Simulations," (AFIT/GCE/ENG/96D-02), Faculty Advisor: Hartrum, Sponsor: WL/AASE

Capt C. D. Stargardt, "Quantification of Weather Effects on Imaging Laser Radar," (AFIT/GM/ENP/97M-09), Faculty Advisor: Dungey, Sponsor: WL/MNGS

Capt J. D. Thomas, "Surfactant Enhanced Microbial Degradation of JP-8 Contaminated Soil," (AFIT/GEE/ENV/96D-19), Advisor: Bleckmann, Sponsor: WL Flues Directorate

2d Lt N. A. White, "MMAE Detection of Interference/Jamming and Spoofing in a DGPS-Aided Inertial System," (AFIT/GE/ENG/96D-21), Faculty Advisor: DeVilbiss/Maybeck, Sponsor: WL/AACN

Capt M. P. Wilson, "Experimental Investigation of Transverse Supersonic Gaseous Injection Enhancement into Supersonic Flow," (AFIT/GAE/ENV/96D-8), Faculty Advisor: Bowersox, Sponsor: WL/POPT

Capt K. S. Younis, "Weighted Mahalanobis Distance for Hyper-Ellipsoidal Clustering," (AFIT/GE/ENG/96D-22), Faculty Advisor: Rogers, Sponsor: WL/AARA

GRADUATE SCHOOL OF ENGINEERING

AIR FORCE SEEK EAGLE OFFICE

2d Lt M. J. Rummer, "A Reliability Study of a Teleoperational Robotic System with Application to the Next Generation Munitions Handling System," (AFIT/GOR/ENY/97M-02), Faculty Advisor: Pohl, Sponsor: MMHE AFSEO/SKZ

OGDEN AIR LOGISTICS CENTER

1st Lt O. J. Dona, "Response Surface Methodology: An Analytical Method for Locating Migrated Contaminant Sources," (AFIT/GCS/ENC/97M-01), Faculty Advisor: Quinn, Sponsor: OO-ALC/EMR

OKLAHOMA CITY AIR LOGISTICS CENTER

Capt C. D. Wolf, "Limitations in the Use of Partitioning Tracers for Estimating the Volume and Distributions of NAPLS," (AFIT/GEE/ENV/96D-22), Faculty Advisor: Heyse, Sponsor: OC-ALC/EMR

SACRAMENTO AIR LOGISTICS CENTER

Capt H. Cho, "Development of Object-Based Teleoperator Control for Unstructured Applications," (AFIT/GE/ENG/96D-01), Faculty Advisor: Schneider, Sponsor: SA-ALC/TIER

Capt M. L. June, "Analysis and Design of Standard Telerobotic Control Software," (AFIT/GCS/ENG/96D-12), Faculty Advisor: Schneider, Sponsor: SA-ALC/TIER

C-17 SPO

Maj W. S. Kim, "Personnel Airdrop Risk Assessment Using Bootstrap Sampling," (AFIT/GOR/ENS/96D-01), Faculty Advisor: Bailey, Sponsor: W-P C-17 SPO

CIVIL ENGINEERING RESTORATION BRANCH

Capt M. S. Harner, "Mass Transport of Volatile Organic Compounds Between the Saturated and Vadose Zones," (AFIT/GEE/ENV/96D-05), Faculty Advisor: Heyse, Sponsor: HQ AFMC/CEVR

ELECTRONIC SYSTEMS CENTER

1st Lt James L. Benslay, "A Domain Independent Framework for Developing Knowledge Based Computer Generated Forces," (AFIT/GCS/ENG/96D-04), Faculty Advisor: Santos, Sponsor: ESC/AVM

Capt V. B. Zurita, "An Architecture for Computer Generated Forces in Complex Distributed Virtual Environments," (AFIT/GCS/ENG/96D-32), Faculty Advisor: Stytz, Sponsor: ESC/AVM

STANDARD SYSTEMS GROUP

Capt M. B. Messamore, "Integrating the Capability Maturity Model for Software and the Quality Air Force Criteria," (AFIT/GCS/ENG/96D-19), Faculty Advisor: Kanko, Sponsor: HQ SSG/FM

HUMAN SYSTEMS CENTER

Capt T. S. Choi, "Independent Verification and Validation of the HAZMAT CTAT Developed by the Human Systems center at Brooks AFB," (AFIT/GEE/ENS/96D-01), Faculty Advisor: Kloeber, Sponsor: HSC/EMP

GRADUATE SCHOOL OF ENGINEERING

46th OPERATIONS GROUP

Capt G. E. Johnson, "Supersonic Flutter Analysis for F-16 Store Configuration Clearance," (AFIT/GA/ENY/97M-01), Faculty Advisor: Beran, Sponsor: 46OG/OGS

SPACE & MISSILE SYSTEMS CENTER

Capt P. F. Sand, "A Modeling Study Investigation Instantaneous Plume Rise of Rocket Exhaust," (AFIT/GEE/ENC/96D-01), Faculty Advisor: Quinn, Sponsor: SMC/CLNM

746th TEST SQUADRON

2nd Lt J. B. McKay, "Optimization of a GPS-Based Navigation Reference System," (AFIT/GE/ENG/96D-12), Faculty Advisor: Pachter, Sponsor: 746TS/TGGED

88TH WEATHER SQUADRON

Capt R. P. Asbury, "An Examination of the Hanson Contrail Forecast Algorithm Under Low Relative Humidity Conditions," (AFIT/GM/ENP/97M-01), Faculty Advisor: Walters, Sponsor: 88th Weather Sq

Capt M. K. Doggett, "An Atmospheric and Sensitivity Study of the Variable Terrain Radio Parabolic Equation Model," (AFIT/GM/ENP/97M-04), Faculty Advisor: Sponsor: 88th Weather Sq

Capt A. C. Rabayda, "Moisture Sensitivity of Contrail Forecast Algorithms", (AFIT/GM/ENP/97M-08), Faculty Advisor: Walters, Sponsor: 88th Weather Sq

AIR FORCE OPERATIONAL TEST AND EVALUATION CENTER

Capt T. J. Schalick, "An Approach to Evaluate Software Effectiveness," (AFIT/GCS/ENG/96D-24), Faculty Advisor: Kanko, Sponsor: HQ AFOTEC/SAS

May D. P. Durkee, "Sensitivity of Availability Estimates To Input data Characterization," (AFIT/GOR/ENS/97M-06), Faculty Advisor: Mykytka, Sponsor: HQ AFOTEC/SAL

2d Lt C. L. Evans, "Determining the Economic Plausibility of Dual Manifesting Reuseable Launch Vehicles and Resueable Orbital Transfer Vehicles for the Replenishment of Military Satellites," (AFIT/GOR/ENS/97M-07), Faculty Advisor: Bailey, Sponsor: AFOTEC/OAS

Capt D. A. Mumford, "Robust Parameter Estimation for the Mixed Weibull (seven parameter) Including the Method of Maximum Likelihood and the Method of Minimum Distance," (AFIT/GOR/ENY/97M-01), Faculty Advisor: Pohl, Sponsor: AFOTEC/SAL

AIR FORCE PERSONNEL COMMUNICATIONS AGENCY

Maj A. J. Hutfles, "Simulation Model of Fighter Pilot Assignment Process," (AFIT/GOA/ENS/97M-10), Faculty Advisor: Bailey, Sponsor: HQ AFPC/DPAOY1

AIR FORCE SPACE COMMAND

Capt K. Jang, "The Capacity of the Air Force Satellite Control Network," (AFIT/GSO/ENS/96D-01), Faculty Advisor: Moore, Sponsor: HQ AFSPC/XPA

Capt C. E. Williams, "A Comparison Study of Circular Error Probable Estimators for Small Samples," (AFIT/GOA/ENS/97M-14), Faculty Advisor: Mykytka, Sponsor: HQ AFSPC/DOMN

GRADUATE SCHOOL OF ENGINEERING

AIR FORCE TECHNICAL APPLICATIONS CENTER

1st Lt J. L. Blackmon, "Neural Network Classification of Environmental Samples," (AFIT/GEE/ENG/96D-04), Faculty Advisor: Rogers, Sponsor: AFTAC (TMNE)

AIR FORCE WEATHER AGENCY

AIR FORCE GLOBAL WEATHER CENTRAL

Capt R. L. Comoglio, "A Validation Study of the SSM/I Temperature Algorithm and Comparison with the CAL/VAL Land Surface Temperatures," (AFIT/GM/ENP/97M-02), Faculty Advisor: Dungey, Sponsor: HQ AFGWC/SYSM

Capt J. B. DesJardins, "Development and Implementation of an Isentropic Potential Vorticity Algorithm for Use at Air Force Global Weather Center," (AFIT/GM/ENP/97M-03), Faculty Advisor: Sponsor: AFGWC/SYS

2d Lt E. C. Harris, "Validation of the Air Force Global Weather Center Relocatable Window Model Total Cloud Forecast," (AFIT/GM/ENP/97M-07), Faculty Advisor: Walters, Sponsor: HQ AFGWC/SYSM

AIR WEATHER SERVICE

Capt A. C. Goodnite, "Adaptation of the Air Weather Service Fog Model to Forecast Radiation Fog Events in the Southeast United States," (AFIT/GM/ENP/97M-06), Faculty Advisor: , Sponsor: HQ AWS/XOX

AIR INTELLIGENCE AGENCY

AIR FORCE INFORMATION WARFARE CENTER

Capt K. P. Haertling, "Implementing Information Warfare in the Weapon Targeting Process," (AFIT/GOA/ENS/97M-08), Faculty Advisor: Deckro, Sponsor: AFIWC/SAV

NATIONAL AIR INTELLIGENCE CENTER

Capt S. M. Cox, "Ranking and Geneating Alternatives for the National Air Intelligence Center's (NAIC) Resource Allocation Strategy," (AFIT/GOA/ENS/97M-03), Faculty Advisor: Kloeber, Sponsor: NAIC/XP

Capt D. D. Keating, "Automatic Digital Processing for Calibration Data of Open Skies Treaty Sensors," (AFIT/GOR/ENP/97M-01), Faculty Advisor: Roggemann, Sponsor: NAIC/DXHX (AIA)

2d Lt G. Roelke, "A Framework for an Automated Compilation System for Reconfigurable Architectures," (AFIT/GE/ENG/97M-01), Faculty Advisor: Potoczny, Sponsor: NAIC/TACC

AIR MOBILITY COMMAND

Capt C. Jeong, "Analysis of Methodology for Linear Programming Optimality Analysis," (AFIT/GOR/ENS/97J-01), Faculty Advisor: Bauer/Moore, Sponsor: HQ AMC/XPY

Capt W. C. Liu, "The Application of Statistical Process Control to Departure Reliability Improvement," (AFIT/GOR/ENS/97M-14), Faculty Advisor: Mykytka, Sponsor: HQ AMC/DO (MRO)

1st Lt W. H. Rushing, "Modeling and Analyzing the Effect of Ground Refueling Capacity on Airfield Throughput," (AFIT/GOR/ENS/97M-19), Faculty Advisor: Dietz, Sponsor: AMC SAF/XPUA

GRADUATE SCHOOL OF ENGINEERING

ARMY

ARMY CORPS OF ENGINEERS, WATERWAYS EQUIPMENT STATION

Capt L. M. Berman, "Laser-Induced Breakdown Spectroscopy on Solution Samples Using Surface Excitation," (AFIT/GAP/ENP/96D-03), Faculty Advisor: Wolf, Sponsor: CEWES-EE-S

COMMAND, CONTROL, COMMUNICATIONS, AND COMPUTERS

Capt T. R. Schmoyer, "Net-Centric Design and Analysis of Information Systems," (AFIT/GE/ENG/97M-03), Faculty Advisor: Raines, Sponsor: Information Systems for C4, (Army, Pentagon)

DEPARTMENT OF DEFENSE

Capt E. C. Gumbs, "Performance Analysis of Preemption Algorithms in an IDNX Circuit Switch Communications Network," (AFIT/GE/ENG/96D-05), Faculty Advisor: Raines, Sponsor: DoD

Maj Y. S. Ke, "Alternative Implementation of Expanding Algorithm for Multi-Commodity Spatial Price Equilibrium," (AFIT/GOR/ENS/97M-12), Faculty Advisor: Chan, Sponsor: DoD

DEFENSE INFORMATION SYSTEMS AGENCY

Capt E. P. Hobson, "Simulation-Based Performance Evaluation of Resource Allocation Algorithms for Implementation in the SHF-DAMA Satellite Network," (AFIT/GCS/ENG/96D-10), Faculty Advisor: Raines, Sponsor: DISA

Capt K. M. Lemley, "Toward a Standard Interface for Telerobotics Applications Using ADA," (AFIT/GCS/ENG/96D-16), Faculty Advisor: Kanko, Sponsor: DISA/CFSW/JEXSV

Capt E. C. Pilloud, "SimWorx: An ADA 95 Distributed Simulation Application Framework Supporting HLA and DIS," (AFIT/GCS/ENG/96D-23), Faculty Advisor: Kanko, Sponsor: DISA/DVSW/JEXSV

Capt D. Y. Sheu, "An Incremental Language Conversion Method to Convert C++ to Ada 95," (AFIT/GCS/ENG/96D-33), Faculty Advisor: Kanko, Sponsor: DISA/DVSW/JEXSV

NATIONAL SECURITY AGENCY

Capt D. L. Lyle, "Optimizing Network Security," (AFIT/GOR/ENS/97M-15), Faculty Advisor: Chan, Sponsor: NSA/R55

Capt G. K. Moy, "A Specific Network Link and Path Likelihood Prediction Tool," (AFIT/GCS/ENG/96D-21), Faculty Advisor: Raines, Sponsor: NSA

DEPARTMENT OF ENERGY

1st Lt T. E. Combs, "Statistical Modeling and Optimization of Nuclear Waste Vitrification," (AFIT/GOA/ENS/97M-02), Faculty Advisor: Kloeber, Sponsor: DOE/WP1

2d Lt B. J. Grelk, "A CERCLA-Based Decision Support System for Environmental Remediation Strategy Selection," (AFIT/GOR/ENS/97M-10), Faculty Advisor: Jackson, Sponsor: DOE/EM-50

Capt A. F. Papatyi, "Analyzing Remediation Technologies for Department of Energy Sites Contaminated with DNAPL Pollutants," (AFIT/GOR/ENS/97M-17), Faculty Advisor: Deckro, Sponsor: DoE

GRADUATE SCHOOL OF ENGINEERING

MARINE CORPS

Capt A. A. Ference, "Habitat Suitability Mapping through Integration of Multicriteria Evaluation Techniques with a Geographic Information System (GIS)," (AFIT/GEE/ENV/96D-03), Faculty Advisor: Shelley, Sponsor: AC/S Envirn, Caspers, Marine Corps/Envr Dept Comp

NATIONAL AIR AND SPACE ADMINISTRATION

Capt J. W. Wong, "Analysis of Tethers in Sampling Near Earth Objects," (AFIT/GSO/ENY/97J-01), Faculty Advisor: Mall, Sponsor: NASA

NAVAL POSTGRADUATE SCHOOL

Capt T. M. Gesling, "Modeling a Battlefield and the Resulting Effects in a Theater-Level Combat Model," (AFIT/GOA/ENS/97M-06), Faculty Advisor: Kloeber, Sponsor: Naval Post Graduate School

PEPSICO, INC.

1st Lt A. P. Giddings, "A Cost Impact Assessment Tool for PFS Logistics Consulting Inc," (AFIT/GOR/ENS/97M-08), Faculty Advisor: Bailey, Sponsor: Pepsico Inc

SECRETARY OF DEFENSE

DEFENSE ADVANCED RESEARCH PROJECT AGENCY

Capt G. B. Garcia, "Design and Prototype of the AFIT Virtual Emergency Room: A Distributed Virtual Environment for Emergency Medical Simulation," (AFIT/GCS/ENG/96D-07), Faculty Advisor: Stytz, Sponsor: DARPA

STRATEGIC COMMAND

Maj E. T. Fair, "Modeling MIRV Footprint Constraints in the Weapons Assignment Model," (AFIT/GOA/ENS/97M-04), Faculty Advisor: Moore, Sponsor: USSTRATCOM/J533

Capt J. M. Taylor, "Evaluation of Near Field Electromagnetic Scattering Codes for Use in Anti-Aircraft Missile Endgame Simulations," (AFIT/GE/ENG/96D-20), Faculty Advisor: Terzuoli, Sponsor: USSTRATCOM/J534

TRI-SERVICE FACILITY: AF, DEPARTMENT OF COMMERCE, FAA

NEXRAD OPERATIONAL SUPPORT FACILITY

Capt D. R. Farris, "Optimization of the Velocity Azimuth Display (VAD) Algorithm's Adaptable Parameters in the WSR-88D System," (AFIT/GM/ENP/97M-05), Faculty Advisor: Tuell, Sponsor: NEXRAD OSF

TURKISH AIR FORCE (ALLIED ARMED SERVICES)

1st Lt Huseyin Topcuoglu, "Turkish Air Mobility Modeling," (AFIT/GOR/ENS/97M-21), Faculty Advisor: Deckro/Moore, Sponsor: Turkish Air Force

GRADUATE SCHOOL OF ENGINEERING

US CENTRAL COMMAND

Maj W. J. Berg, "Sensitivity Analysis of a Combat Simulation Using Response Surface Methodology," (AFIT/GOA/ENS/97M-01), Faculty Advisor: Bauer, Sponsor: USCENCOM/CCA

Maj J. E. Parker, "Experiments on Aggregating Air Ordinance Effectiveness Data for the TACWAR Model," (AFIT/GOA/ENS/97M-12), Faculty Advisor: Jackson, Sponsor: USCENCOM/CCA

3.9 FUNDED RESEARCH PROJECTS

[* Denotes duplicate entry, multiple faculty authors.]

BAILEY, Lt Col T. GLENN (ENS)

Bailey, "Tabu Search Methods for Airlift Loading Problems Using Java," ENS, Sponsor: Air Force Studies and Analyses Agency

Bailey, "Object-Oriented Simulation of the C-17 Airdrop Mission," ENS, Sponsor: C-17 Systems Program Office

BERAN, PHILIP S. (ENY)

Beran, "Computational Analysis of Aerodynamic Difurcation," ENY, Sponsor: AFOSR/NA

BAUER, KENNETH W. (ENS)

Bauer, "Evaluation Methodologies for the MSTAR (Moving and Stationary Target Acquisition and Recognition) Program," ENS, Sponsor: WL/ACAA

Bauer & Miller, "SIMAF Scenario Methodology and Support," ENS, Sponsor: ASC/SM

*Kloeber, Bauer, and Miller, "Modeling and Simulating the Recruiting Process for the Army Recruiting Command," ENS, Sponsor: HQ USAREC/RCPAE

BRIGHT, VICTOR M. (ENG)

Bright, "Micro-electro-mechanical Systems Research," ENG, Sponsor: AL/CFPR

Bright, "Microelectromechanical Isolation of Surface Acoustic Wave Resonators," ENG, Sponsor: ARL/AMSRL

Bright, "Micro-mirror Devices for Agile Beam Steering and Beam Forming," ENG, Sponsor: WL/AAJT

Bright, "Microelectromechanical Systems (MEMS) Technologies for Potential Applications in Space Systems," ENG, Sponsor: PL/VTEE

Bright, "Microelectromechanical Systems," ENG, Sponsor: PL/VTEE

Bright, "Micro-Mirror Scanner Development," ENG, Sponsor: WL/MNG

BURGGRAF, LARRY W. (ENP)

Burggraf, L.W. and Li, G., "Optic Chemical Sensors Based on Sol-Gel Derived Oxide Semiconductor Films," ENP, Sponsor: AFOSR/AFIT

Burggraf, L.W. and Bleckmann, C., "Metal Toxicity in Biodegradation," ENP, Sponsor: AFOSR

BUTER, Maj THOMAS A. (ENY)

Buter, Bowersox, "Measurements and Modeling of Compressible Turbulence in Supersonic and Hypersonic Boundary Layer Flows Including Pressure Gradient Effects," ENY, Sponsor: AFOSR/NI

GRADUATE SCHOOL OF ENGINEERING

Buter, Bowersox, "Measurements and Modeling of Compressible Turbulence in Supersonic and Hypersonic Boundary Layer Flows Including Pressure Gradient Effects", ENY, Sponsor: AFOSR/NI

Buter/Bowersox, "Wind Tunnel Support," ENY, Sponsor: WL/MNAV

CANFIELD, ROBERT A. (ENY)

Ridgely, Canfield, "Techniques and Applications of Multivariable Nonlinear Control," ENY, Sponsor: AFOSR/NM

Ridgely, Canfield, "Techniques and Applications of Multivariable Mixed Objective Optimal Control," ENY, Sponsor: AFOSR/NI

CHAN, YUPO (ENS)

Chan, "Modeling Communication Networks," ENS, Sponsor: National Security Agency

CHRISSIS, JAMES W. (ENS)

Chrissis, Jackson, and Kloeber, "Development of a Video Teleconferencing Capability for USAF Education and Training," ENS, Sponsor: AETC

Chrissis, Jackson, and Kloeber, "Combat Modeling and Simulation," ENS, Sponsor: AETC

DECKRO, RICHARD F. (ENS)

Deckro, Jackson, and Kloeber, "Development of Decision Analysis Tools for the Subsurface Contaminants Focus Area," ENS, Sponsor: Department of Energy

DEVILBISS, Capt STEWART L. (ENG)

DeVilbiss, "CIGTF Submeter Accuracy (Navigation) Reference System," ENG, Sponsor: 46 TG/XPRF

DUNGEY, Maj CLIFTON E. (ENP)

Dungey, "Analysis of Weather Effects on Laser Radar," ENP, Sponsor: WL/MNGS

KANKO, Maj MARK A. (ENG)

Kanko, "High Order Language Control Facility ADA 95 Architecture Framework," ENG, Sponsor: DISA/CPA

GALLAGHER, Lt Col DAVID M. (ENG)

Gallagher, "Signal/Image Processing (SIP) Computational Technology Area Under the High Performance Computing Modernization Office (HPCMO) CHSSI Program," ENG, Sponsor: RL/OCS

GOLDIZEN, Maj DERRILL T. (ENP)

Hall, Spenny, Goldizen, "Satellite Applications Laboratory," ENY/ENP, Sponsor: AETC

GOLTZ, MARK N. (ENV)

Goltz, M. N., "Follow-on Studies to Full-scale Evaluation of In Situ Bioremediation of Chlorinated Solvent Groundwater Contamination," ENV, Sponsor: AL/EQW-OL

GRADUATE SCHOOL OF ENGINEERING

Goltz, M. N., "Bioenhanced In-well Vapor Stripping to Treat Trichloroethylene," ENV, Sponsor: DoD/DOE/EPA SERDP

Goltz, M. N., "A Model of *In Situ* Bioremediation which Includes the Effect of Rate-limited Sorption and Bioavailability," ENV, Sponsor: AFOSR

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Hall, "Space Warfare Research Program," ENV, Sponsor: NPS

HARTLEY, Lt Col RICHARD S. (ENP)

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HEYSE, Maj EDWARD C. (ENV)

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LARGENT, Capt CRAIG C. (ENP)

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LAWSON, KEVEN (ENC)

Lawson, "Statistical Study on AMRAAM Production Reliability Data Base," ENC, Sponsor: ASC/YAF

MALL, SHANKAR (ENY)

Mall, "Thermomechanical Fatigue Behavior of MMC Under Strain Controlled Loading Mode," ENY, Sponsor: AFOSR/NI

Mall, "Bonded Composite Repair of Aluminum Panels," ENY, Sponsor: WL/FIBA

Mall, "Adaptive Flexible Structures Wind Tunnel Test," ENY, Sponsor: WL/FIBGE

Mall, "Adaptive Flexible Structures Wind Tunnel Test," ENY, Sponsor: WL/FIBGQ

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MARTIN, Maj JEFFREY B. (ENP)

Martin, "Imaging with backscattered gamma rays for three dimensional non-destructive inspection," ENP, Sponsor: WL/MLLP

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MATHEWS, KIRK A. (ENP)

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OXLEY, MARK E., (ENC)

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PACHTER, MEIR N. (ENG)

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PALAZOTTO, ANTHONY N.

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Rogers, "Investigate the Application of Neural and Statistical Pattern Recognition Techniques for Environmental Monitoring," ENG, Sponsor: AFTAC/TMN

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ROGGEMANN, Maj MICHAEL C. (ENP)

Roggemann, "Optical Wave Front Control Using Micro-Electro-Mechanical Systems (MEMS)," ENP, Sponsor: AFOSR

ROH, WON B. (ENP)

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RUCK, DENESE (ENG)

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SANTOS, EUGENE JR.

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SCHNEIDER, Maj DEAN L. (ENG)

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WAILES, Lt Col TOM S. (ENG)

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Reynolds, O. and M. Pachter, "System Identification Algorithm Using Phasors," European Control Conference, Paper TH-E F2, Brussels, Belgium, 1-4 July 1997.

Lin, Z., M. Pachter, and S. Banda, "Toward Tracking Performance Improvement - Nonlinear Feedback for Linear Systems," Proceedings of the 2nd Asian Control Conference, Vol. 2, pp. 527-530, Seoul, Korea, 1997.

McKay, J., M. Pachter, and J. D'Azzo, "Optimization of a GPS-Based Navigation Reference System," Proceedings of the 1997 AIAA Guidance, Navigation and Control Conference, pp. 667-685, AIAA Paper No. 97-3598, New Orleans LA, 11-13 August 1997.

Miller, R. B. and M. Pachter, "Manual Tracking Control with Amplitude and Rate Constrained Actuators," Proceedings of the 1996 Conference on Decision and Control, pp. 3159-3164, Kobe, Japan, 12 December 1996.

PERRAM, Lt Col GLEN P. (ENP)

Stager, M.P., A. Fares, B.T. Kindt, P. LaPuma, and G.P. Perram, "Multiplexed Optical Detection for the Long-Term Desorption of Trichloroethylene from Powdered Soils," Optical and Remote Sensing for Environmental and Process Monitoring, VIP-67, p 315-325, Air & Waste Management Association (1997).

*Pope, R.S., P.J. Wolf, J.J. Cornecilli, and G.P. Perram, "The Collisional Broadening of Spectral Lines in the $X \rightarrow b$ system of O_2 Measured by Fourier Transform Spectroscopy," to be published in Proceedings of the 11th International Conference on Fourier Transform Spectroscopy, AIP 1997

POHL, Maj EDWARD A. (ENY)

Pohl, E.A. and Mykytko, E., "Simulation Modeling for Reliability Analysis," IEEE Tutorial Notes, 43rd Reliability and Maintainability Symposium, Philadelphia PA, pp. 1-36, 13-16 January 1997. Non-Refereed.

Kramer, S.C., From, J. and Pohl, E.A., "A Small Satellite System Design Process," Proceedings of the 1997 IEEE National Aerospace and Electronics Conference (NAECON 1997), Vol. 1, pp. 423-429, 15-17 July 1997. Non-Refereed.

RAINES, Maj RICHARD A. (ENG)

Raines, R. A., R. Janoso, D. Stenger, "Performance Studies of Low Earth Orbit Satellite (LEOS) Communication Networks for Global Communications," Space Technology & Applications International Forum (STAIF-97), pp. 939-944, January 1997.

*Gerace, G. C., R. F. Mills, R. A. Raines, B. W. Suter, A. J. Terzuoli, and B. M. Welsh, "Military Communications Graduate Education Curriculum," 1996 ASEE Annual Conference Proceedings, October 1996.

GRADUATE SCHOOL OF ENGINEERING

ROBERTSON, Maj DAVID D. (ENY)

Solti, J.P., Robertson, D.D. and Mall, S., "Micromechanics Based Analysis of Fatigue in Ceramic Matrix Composites," Proceedings of the American Society for Composites, Eleventh Technical Conference, W.S. Johnson (ed.) Atlanta GA, pp. 390-395, October 1996. Non-Refereed.

Robertson, D.D., Solti, J.P. and Mall, S., "A Systematic Shear-Lag Approach for Analyzing the Failure Mechanisms in Ceramic Matrix Composites," Proceedings of the ASME Aerospace and Materials Divisions, AD-Vol. 51 / MD-Vol. 73, edited by Chan et. al., pp. 265-270, November 1996. Non-Refereed.

ROGERS, STEVEN K. (ENG)

Rathbun, T. F., S. K. Rogers, M. P. DeSimio, and M. E. Oxley, "MLP Iterative Construction Algorithm," Proceedings of SPIE Applications and Science of Artificial Neural Networks III, 3077-01, pp. 2-10, Orlando FL, April 1997. Invited paper.

ROH, WON B. (ENP)

Turner, M. D., W. B. Roh, and K. Schepler, "Degenerate Four-wave Mixing at 2.1 μ m in Gallium Antimonide with Cr, Tm, Ho:YAG Laser," Trends in Optics and Photonics (TOPS) Vol. X, 360-363 (1997)

SANTOS, EUGENE (ENG)

Brown, S. M., E. Santos, Jr., and S. B. Banks, "A Dynamic Bayesian Intelligent Interface Agent," Proceedings of Interfaces '97 - Man-Machine Interaction, pp. 118-121, Montpellier, France, 28-30 May 1997.

Edwards, M., E. Santos, Jr., S. B. Banks, and M. R. Stytz, "Computer Generated Intelligent Companions for Distributed Virtual Environments," Proceedings of the 8th International Conference on Tools with Artificial Intelligence, pp. 450-452, Toulouse, France, 16-19 November 1996.

*Harrington, R. A., S. B. Banks, and E. Santos, Jr., "GESIA: Uncertainty-Based Reasoning for a Generic Expert System Intelligent User Interface," Proceedings of the 8th International Conference on Tools with Artificial Intelligence, pp. 52-55, Toulouse, France, 16-19 November 1996.

*Banks, S. B., R. A. Harrington, E. Santos, Jr., and S. M. Brown, "Usability Testing of an Intelligent Interface Agent," Proceedings of Interfaces '97 - Man-Machine Interaction, pp. 121-124, Montpellier, France, 28-30 May 1997.

*Banks, S. B., M. R. Stytz, E. Santos, Jr., V. Zurita, and J. L. Benslay, Jr., "Achieving Realistic Performance and Decision-Making Capabilities in Computer-Generated Air Forces," Proceedings of the SPIE 11th Annual International Symposium on Aerospace/Defense Sensing and Controls: AeroSense '97, Modeling and Simulating Sensory Response for Real and Virtual Environments, pp. 195-205, Orlando FL, 21-25 April 1997.

*Stytz, M. R., S. B. Banks, and E. Santos, Jr., "Requirements for Intelligent Aircraft Entities in Distributed Environments," 18th Interservice/Industry Training Systems and Education Conference, CD-ROM, Orlando FL, 3-5 December 1996.

*Stein, D. J., III, S. B. Banks, E. Santos, Jr., and M. L. Talbert, "Utilizing Goal-Directed Data Mining for Incompleteness Repair in Knowledge Bases," Proceedings of the Eighth Midwest Artificial Intelligence and Cognitive Science conference, pp. 82-85, Dayton OH, 30 May-1 June 1997.

SHOMPER, Maj KEITH A. (ENG)

Shomper, K. A., "Haptic Rendering," IEEE/AESS 14th Annual Symposium, Synthetic Visualization: Systems and Applications, pp. 1-4, 1997.

Moritz, J. E. and K. A. Shomper, "Graphical Simulation of a Missile Endgame Scenario," 1997 Simulation Multiconference, Military Government, and Aerospace Simulation, Vol. 29, No. 4, pp. 37-41, 1997.

Kellett, T. R., K. A. Shomper, and J. A. Lupo, "Molecular Articulation in Response to Interactive Atomic Forces in DOCKER," 1997 Simulation Multiconference, Military Government, and Aerospace Simulation, Vol. 29, No. 4, pp. 127-132, 1997.

SPENNY, CURTIS H. (ENY)

Spenny, C.H., and Schneider, D.L., "Object Resolved Teleoperation," Proceedings of the 1997 IEEE International Conference on Robotics and Automation Conference, Albuquerque NM, pp. 1105-1111, May 1997. Non-Refereed.

STYTZ, Lt Col MARTIN R. (ENG)

Stytz, M. R., "Virtual Reality Uses, Research, and Development by the United States Department of Defense," Designing the Future, Sandra K. Helsel (ed.), Meckler Press, 1997.

Stytz, M. R., "Solar System Modeler Makes Star Gazing Easier," *Silicon Graphics World*, Callie Jones, Vol. 6, No. 8, pp. 35-36, October 1996.

Stytz, M. R. and S. B. Banks, "Experience and Lessons Learned in Developing Systems and Applications for Distributed Virtual Environments," *Proceedings of The SCS 1997 Summer Computer Simulation Conference*, pp. 824-829, Arlington VA, 13-17 July 1997.

Stytz, M. R., S. B. Banks, and T. Adams, "Issues and Solutions in the Development of Rapidly Reconfigurable Immersive Human-Operated Systems for Distributed Virtual Environments," *Proceedings of the SPIE 11th Annual International Symposium on Aerospace/Defense Sensing and Controls: AeroSense '97, Modeling and Simulating Sensory Response for Real and Virtual Environments*, Vol. 3085, pp. 162-173, Orlando FL, 21-25 April 1997.

Stytz, M. R., S. B. Banks, and T. Adams, "Rapidly Reconfigurable Human-Operated Systems for Distributed Virtual Environments: Requirements and Implementation," *Proceedings of SimTecT '97: Advanced Simulation Technology and Training*, pp. 359-366, Canberra, Australia, 17-20 March 1997.

Stytz, M. R.; T. Adams, and S. B. Banks, "A Rapidly Reconfigurable Photorealistic Virtual Cockpit," *The SCS 1997 SMC Simulation Multiconference: 1997 Military, Government, & Aerospace Simulation Conference*, Atlanta GA, pp. 211-216, 6-10 April 1997.

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Stytz, M. R., S. B. Banks, and W. D. Wells, "Tools to Enable Collaboration Within Distributed Virtual Environments: Design, Implementation, and Future Requirements," *Proceedings of SimTecT '97: Advanced Simulation Technology and Training*, pp. 393-400, Canberra, Australia, 17-20 March 1997.

Stytz, M. R., S. B. Banks, and W. D. Wells, "Requirements and Implementation for Enabling Multiple Modes of Collaboration and Cooperation Within Distributed Virtual Environments," *Proceedings of the SCS 1997 SMC Simulation Multiconference: 1997 Military, Government, & Aerospace Simulation Conference*, pp. 175-180, Atlanta GA, April 1997.

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Stytz, M. R., S. B. Banks, and G. Williams, "A Virtual Global Positioning Broadcast and Receiver System for Use in Military Distributed Virtual Environments, Proceedings of the SCS 1997 SMC Simulation Multiconference: 1997 Military, Government, & Aerospace Simulation Conference, pp. 169-174, Atlanta GA, April 1997.

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Stytz, M. R., S. B. Banks, G. Williams, and J. C. Vanderburgh, "The Solar System Modeler: An Immersive Virtual Environment For Exploring The Solar System," Interfaces '97 - Man-Machine Interaction, pp. 72-75, Montpellier, France, 28-30 May 1997.

Stytz, M. R., S. B. Banks, W. D. Wells, and S. S. Sheasby, "Collaborative Workspaces for Distributed Virtual Environments: Issues and Implementation Results," Proceedings of the SPIE 11th Annual International Symposium on Aerospace/Defense Sensing and Controls: AeroSense '97, Modeling and Simulating Sensory Response for Real and Virtual Environments, pp. 185-194, Orlando FL, 21-25 April 1997.

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Stytz, Martin R., Banks, Sheila B., Kesterman, James J., Rohrer, Jimmie J., and Vanderburgh, John C. "The Information Pod: An Interface for Immersed Control in a Virtual Environment," Interfaces '97 - Man-Machine Interaction, Montpellier, France, pp. 24-27, 28-30 May 1997.

Baker, M. C. and M. R. Stytz, "Experience Using Bayesian Segmentation on Low-Noise Ultrasound Images of Residual Limbs," Proceedings of the 18th International Conference of the IEEE Engineering in Medicine and Biology Society, publication on CD-ROM, Amsterdam, The Netherlands, 31 October-3 November 1996.

*Banks, S. B. and M. R. Stytz, "An Airbase Logistics System for Accurately Modeling Sortie Generation Within Distributed Interactive Simulations," Proceedings of the SCS 1997 SMC Simulation Multiconference: Military, Government, & Aerospace Simulation Conference, pp. 163-168, Atlanta GA, 6-10 April 1997.

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*Banks, S. B. and M. R. Stytz, "Architecture and Implementation of an Airbase Logistics System for Use Within Distributed Interactive Simulations," Proceedings of SimTecT '97: Advanced Simulation Technology and Training, pp. 185-190, 17-20 March 1997.

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*Banks, S. B., M. R. Stytz, and W. D. Wells, "Enabling Computer Supported Collaborative Work Within Distributed Virtual Environments," *Interfaces '97 - Man-Machine Interaction*, pp. 4-6, Montpellier, France, 28-30 May 1997.

*Banks, S. B., M. R. Stytz, E. Santos, Jr., V. Zurita, and J. L. Benslay, Jr., "Achieving Realistic Performance and Decision-Making Capabilities in Computer-Generated Air Forces," *Proceedings of the SPIE 11th Annual International Symposium on Aerospace/Defense Sensing and Controls: AeroSense '97, Modeling and Simulating Sensory Response for Real and Virtual Environments*, pp. 195-205, Orlando FL, 21-25 April 1997.

*Williams, G., M. R. Stytz, and S. B. Banks, "A Virtual Global Positioning System for Distributed Interactive Simulation Environments," *SPIE 11th Annual International Symposium on Aerospace/Defense Sensing and Controls: AeroSense '97, Modeling and Simulating Sensory Response for Real and Virtual Environments*, Vol. 3085, pp. 150-161, Orlando FL, 21-25 April 1997.

Williams, G., M. R. Stytz, and S. B. Banks, "A Virtual Global Positioning Broadcast and Receiver System for Use in Military Distributed Virtual Environments," *The SCS 1997 SMC Simulation Multiconference: 1997 Military, Government, & Aerospace Simulation Conference*, pp. 169-174, Atlanta GA, 6-10 April 1997.

*Wells, W. D., S. B. Banks, and M. R. Stytz, "Requirements and Implementation for Enabling Multiple Modes of Collaboration and Cooperation Within Distributed Virtual Environments," *The SCS 1997 SMC Simulation Multiconference: 1997 Military, Government, & Aerospace Simulation Conference*, pp. 175-182, Atlanta GA, 6-10 April 1997.

*Edwards, M., E. Santos, Jr., S. B. Banks, and M. R. Stytz, "Computer Generated Intelligent Companions for Distributed Virtual Environments," *Proceedings of the 8th International Conference on Tools with Artificial Intelligence*, pp. 450-452, Toulouse, France, 16-19 November 1996.

SUTER, BRUCE W. (ENG)

Suter, B. W., *Multirate and Wavelet Signal Processing*, Academic Press, San Diego CA, September 1997.

Suter, B. W. and K. S. Stevens, "Low Power, High Performance FFT Design," A. Sydow (editor), *Proceedings of IMACS World Congress on Scientific Computation, Modeling, and Applied Mathematics*, 1, pp. 99-104, Berlin, Germany, August 1997.

Huang, Y. and B. W. Suter, "Fractional Wavelet Packet Transforms," *Proceedings of IEEE Signal Processing Workshop*, pp. 413-415, Leon, Norway, October 1996.

*Gerace, G. C., R. F. Mills, R. A. Raines, B. W. Suter, A. J. Terzuoli, and B. M. Welsh, "Military Communications Graduate Education Curriculum," *1996 ASEE Annual Conference Proceedings*, October 1996.

TALBERT, Maj MICHAEL L. (ENG)

*Stein, D. J., III, S. B. Banks, E. Santos, Jr., and M. L. Talbert, "Utilizing Goal-Directed Data Mining for Incompleteness Repair in Knowledge Bases," *Proceedings of the Eighth Midwest Artificial Intelligence and Cognitive Science Conference*, pp. 82-85, Dayton OH, 30 May-1 June 1997.

TERZUOLI, A. J., Jr. (ENG)

Harmon, F. G. and A. J. Terzuoli, Jr., "Application of a Finite Volume Time Domain Technique to Three Dimensional Objects," *Proceedings of the Thirteenth Annual Review of Progress in Applied Computational Electromagnetics*, pp. 374-381, Monterey CA, 17-21 March 97.

GRADUATE SCHOOL OF ENGINEERING

Harmon, F. G. and A. J. Terzuoli, Jr., "Application of a Finite Volume Time Domain Maxwell Equation Solver to Three Dimensional Objects," Proceedings of the AIAA 28th Plasmadynamics and Laqueers Conference, AIAA 97-2357, Atlanta GA, 23-25 June 97.

Harmon, F. G. and A. J. Terzuoli, Jr., "Application of a Finite Volume Time Domain Technique to Three Dimensional Objects," Digest of the 1996 IEEE/APS International Symposium, pp. 102-105, Montreal, Canada, 13-18 July 97.

Harmon, F. G. and A. J. Terzuoli, Jr., "Application of a Finite Volume Time Domain Method to Three Dimensional Objects," PIERS: Progress in Electromagnetics Research Symposium Proceedings, p. 184, Cambridge MA, 7-11 July 97.

Sandlin, B. S. and A. J. Terzuoli, Jr., "A Genetic Antenna Design for Improved Radiation Over Earth," Proceedings of the 21st Annual Antenna Applications Symposium, Monticello IL, 17-18 September 97.

Taylor, J. M. and A. J. Terzuoli, Jr., "Evaluation of Near Field Electromagnetic Scattering Codes for Airborne Application," Proceedings of the Thirteenth Annual Review of Progress in Applied Computational Electromagnetics, pp. 852-858, Monterey CA, 17-21 March 97.

Taylor, J. M. and A. J. Terzuoli, Jr., "On the Concept of Near Field Radar Cross Section," Digest of the 1996 IEEE/APS International Symposium, pp. 1172-1175, Montreal, Canada, 13-18 July 97.

*Gerace, G. C., R. F. Mills, R. A. Raines, B. W. Suter, A. J. Terzuoli, and B. M. Welsh, "Military Communications Graduate Education Curriculum," 1996 ASEE Annual Conference Proceedings, October 1996.

WEEKS, DAVID E. (ENP)

Calfas, R.S., and D.E. Weeks, "A New Application of Absorbing Boundary Conditions for Computing Two-Dimensional Collinear Quantum Reactive Scattering Matrix Elements," Proceedings of the High Energy Density Matter (HEDM) Contractors' Conference Held 5-7 June 1996 in Boulder CO, PL - TR - 96 - 3037, March 1997.

WIESEL, WILLIAM E. (ENY)

Wiesel, W.E., Spaceflight Dynamics, 2nd Edition, McGraw-Hill, 1997.

WOLF, Lt Col PAUL J. (ENP)

Pope, R.S., P.J. Wolf, J.J. Cornecilli, and G.P. Perram, "The Collisional Broadening of Spectral Lines in the $X \rightarrow b$ system of O_2 Measured by Fourier Transform Spectroscopy," to be published in Proceedings of the 11th International Conference on Fourier Transform Spectroscopy, AIP 1997.

3.12 SUBSTANTIAL CONSULTATIONS

[* Denotes duplicate entry, multiple faculties authors.]

ALDRICH, Maj JAMES R. (ENV)

Aldrich, J. R., DOE: Source Review/Selection committee for Energy Efficiency Projects, 6 firms selected for funding.

Aldrich, J. R., Environmental Security Technology Certification Program for the National Defense Center for Environmental Excellence

Aldrich, J. R., USEPA Environmental Accounting Network: Reviewer for Valuing Potential Environmental Liabilities for Managerial Decision-Making, EPA 742-R-96-003.

BANKS, Maj SHEILA B. (ENG)

Banks, S. B., Consultant for the Army's Rotorcraft Pilot's Association (RPA) Program. Maj Banks attends program status reviews, serves on the RPA Program Software Working Group, writes detailed technical reports addressing the status of AI software design and development, and delivers these reports to Army program management. This is an \$83M Army advanced development program.

Banks, S. B., Consultant for Rome Laboratory Intelligence Data Handling Technology Development Branch for the Joint Air Force Laboratory Infrastructure for Testing Global Awareness Concepts: Global Awareness Virtual Testbed Program, providing technical guidance and program direction in the concept development of a joint AFRL distributed virtual engineering testbed.

Banks, S. B. and M. R. Stytz, award of \$207,000 from SAF/ST for "Cognitive Sciences Investigations."

Santos, E., Jr. and S. B. Banks, award of \$60,000 from Phillips Laboratory for "Intelligent Tutoring Systems."

*Stytz, M. R. and S. B. Banks, award of \$253,000 from ASC for "Development of a Distributed Mission Training Integrated Test Environment (DMTITE) for ASC and ACC."

*Stytz, M. R. and S. B. Banks, award of \$272,000 from Phillips Laboratory for "Development of a Virtual Spaceplane Demonstrator."

*Stytz, M. R. and S. B. Banks, award of \$50,000 from Armstrong Laboratory for "Development of Human-Computer Interaction Design Criteria for Virtual Environments."

BOWERSOX, RODNEY D.W. (ENY)

Dr. Bowersox consulted with WL/POPR concerning SCRAMjet wind tunnel experiments.

BROWN, WILLIAM M. (ENG)

*Terzuoli, A. J., Jr., G. C. Gerace, and W. M. Brown, consulting on computer simulation studies in support of Missile Fusing Upon LO Vehicles. Sponsor: US/STRATCOM

*Terzuoli, A. J., Jr., P. J. Collins, M. A. Temple, and W. M. Brown, consultants for computer model simulation studies in support of Synthetic Aperture Radar and Infrared Vision. Sponsor: WL

GRADUATE SCHOOL OF ENGINEERING

CHAN, YUPO (ENS)

Chan, Y., Low-Observable Inflight Replanning System, Sponsor: Flight Control Division, Wright Laboratory (Flight Dynamics Directorate).

Chan, Y., Transportation Education and Research, Sponsor: US Transportation Command (TRANSCOM).

Chan, Y., Joint Mobility Modeling, Sponsor: Office of the Secretary of Defense (OSD/PAE).

COLLINS, Maj PETER J. (ENG)

*Terzuoli, A. J., Jr., P. J. Collins, and B. M. Welsh, consulting on the Effects of Aircraft Flex on RCS. Sponsor: ASC/EN

*Terzuoli, A. J., Jr., P. J. Collins, Thiele, and G.B. Lamont, consulting on the Genetic Antenna Designs for Remote Sensing. Sponsor: AFTAC

*Terzuoli, A. J., Jr., P. J. Collins, M. A. Temple, and W. M. Brown, consultants for computer model simulation studies in support of Synthetic Aperture Radar and Infrared Vision. Sponsor: WL

D'AZZO, JOHN J. (ENG)

D'Azzo, J. J., consultant for Wright Laboratory Flight Dynamics Directorate

FRANKE, MILTON E. (ENY)

Dr. Franke consulted and taught a short course on conventional weapons at Hill AFB UT from 10-18 December 1996.

Dr. Franke and consulted with ASME on the Global Technologies Committee on 9 June 1997.

Dr. Franke consulted with Dr. Ronald N. Kostoff of the Office of Naval Research, Arlington VA two days during June regarding an ONR IN-House Laboratory Independent Research Program related to circulation control.

Dr. Franke consulted with Howard Emsley of Wright Laboratory, regarding wind tunnel testing during July.

Dr. Franke consulted with Liwei Lin of the University of Michigan, regarding microelectromechanical systems during July.

Dr. Franke consulted with ASME regarding strategic planning during July.

Dr. Franke consulted with Larry Hottot of DoD Washington Headquarters Services, regarding funding for testing in the AFIT wind tunnel during July.

Dr. Franke consulted with Dr. Peter Hanlon of Wright Laboratory, Eglin AFB FL in August 1997 regarding aerodynamic testing of a unique wing at low speeds in the AFIT 5-ft Wind Tunnel.

Dr. Franke consulted with Capt Thomas Layne of Wright Laboratory, Eglin AFB FL, several times during the year.

Dr. Franke consulted with Dr. Harry Crisp of the Naval Surface Warfare Center Dahlgren Division, several times this year regarding engineering systems.

Dr. Franke consulted with ASME as a member of the Committee on Planning and Organization, 18-21 November 1996, 13-14 March 1997, 9-11 June 1997, and 18-19 September 1997.

GRADUATE SCHOOL OF ENGINEERING

Dr. Franke consulted with Marc Masquelier of Veda, Inc. several times this year regarding aerodynamics related to the installation of a dome on the T-39 aircraft. This also included personnel from Avionics Directorate of Wright Laboratory.

Dr. Franke consulted with WL/FIVE regarding joint research opportunities in heat transfer.

Dr. Franke consulted with Dr. Richard Walker of Miami University, Oxford OH in June 1997 regarding aerodynamics.

Dr. Franke consulted with Keith Salmon of Hill AFB UT in March 1997 regarding conventional weapons.

Dr. Franke consulted with Paul Reimann, of Hill AFB UT in December 1996 and March 1997 regarding conventional weapons.

Dr. Franke consulted with Dona Lee and Jim Francis of Strategic Insight, Washington DC, several times during the year regarding engineering systems.

Dr. Franke consulted with Richard Hartke of the National Center for Advanced Technologies, Washington DC, several times during the year regarding the workshops on engineering systems.

Dr. Franke consulted with the American Institute of Aeronautics and Astronautics in July 1997 regarding pressure oscillations in cavity flow.

Dr. Franke consulted with the American Institute of Aeronautics and Astronautics in December 1996 regarding Coanda jet attachment around an airfoil.

Dr. Franke consulted with Ryan Sievers of the University of Michigan, on 2 September 1997 regarding aerodynamics.

Dr. Franke consulted with the ASME Computers in Engineering Division Executive Committee and the ASME Engineering Information Management Executive Committee on 15 September 1997.

Dr. Franke consulted with Dr. Najaraja, formerly of Wright Laboratory, regarding ejector technology on 5 September 1997.

GERACE, Maj GERALD C. (ENG)

*Terzuoli, A. J., Jr., G. C. Gerace, and W. M. Brown, consulting on computer simulation studies in support of Missile Fusing Upon LO Vehicles. Sponsor: US/STRATCOM

*Terzuoli, A. J., Jr., G. C. Gerace, and W. P. Baker, consulting on computer model simulation studies in support of transfer of Finite Volume Time Domain Methods from Computational Fluid Dynamics to Computational EM. Sponsor: WL

GOLDIZEN, Maj DERRILL T. (ENP)

Goldizen, D., Characterization and error analysis of middle atmosphere ozone profiles obtained by the Millimeter-wave Atmospheric Sounder (MAS) on space shuttle missions ATLAS I-III, consulting with Dr. Mark Daehler, Middle Atmosphere Physics branch, NRL, Washington DC.

Filby, S., and D. Goldizen, Validating the use of GPS total electron content (TEC) measurements as real-time input to the Parameterized Real-time Ionospheric Specification Model (PRISM) Version 1.7B, consulting with Dr. Dave Anderson, PL/GPI (Hanscom AFB) and the 55th Space Weather Squadron (Falcon AFB).

GRADUATE SCHOOL OF ENGINEERING

GOLTZ, MARK N. (ENV)

Goltz, M. N. and Heyse, E. C., consulted with environmental management personnel at Edwards AFB on environmental restoration. Also taught a short course entitled "Groundwater Hydrology and Contaminant Transport".

HALL, CHRISTOPHER D. (ENV)

Consulted for Phillips Laboratory on the use of flywheels for simultaneous energy storage and attitude control.

HARTRUM, THOMAS C. (ENG)

Hartrum, T. C., consultant to Mr. Douglas White, RL/C3CA in the area of Knowledge-Based Software Engineering (KBSE). The research involves both computer-aided synthesis of software and reverse-engineering of legacy code. The work has resulted in two PhD dissertations, two master's theses, and four conference papers and presentations.

HEYSE, Maj EDWARD C. (ENV)

*Heyse, E. C., and Nixon, W. B., as members of AFMC Site Restoration Peer Review Committee reviewed AFMC's \$120M annual hazardous waste site restoration program, including projects from Brooks, Edwards, Eglin, Hill, and Tinker AFBs and AF Plants 4 and 6.

Heyse, E. C., conducted peer review of manuscripts submitted for publication in: AGU Water Resources Research, ASCE Journal of Environmental Engineering, Soil Science Society of America Journal, and Journal of Contaminant Hydrology. Also peer reviewed abstracts submitted for presentation at: *In Situ* and On-Site Bioreclamation international symposium, 1997.

Heyse, E. C., taught 2 hr. lesson on "Site Investigations" for three continuing education courses ENV 021: Installation Restoration Program Course, AFIT/CEV, Wright-Patterson AFB OH.

Heyse, E. C., chaired the Geochemical Modeling and Hydrological Evaluations Sessions, 19th Midwest Environmental Chemistry Workshop, Purdue University, West Lafayette IN, 12-13 Oct 96.

HOUPIS, CONSTANTINE H. (ENG)

Houpis, C. H., consultant to Dr. Robert Ewing, WL/AASH, on QFT design for OP-AMPS.

Houpis, C. H., QFT consultant to AFRL/FIGS on the MIMO QFT CAD package developed by Mr. Richard Sating and turned over to the University of Strathclyde for upgrading and maintaining.

JACKSON, Lt Col JACK A. (ENS)

Jackson, J. A., T. G. Bailey, and K. W. Bauer. Design of experiment work in support of contractor lawsuit. This lawsuit could save the U.S. Government \$12 million. Sponsor: AFMC/JAG.

Deckro, R. F., J. A. Jackson, J. M. Kloeber, and G. S Parnell. Decision and Risk Analysis Applied to Remediation Technologies. Sponsor: Department of Energy.

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

Kloeber, J. M. Jr. and Reynolds, D., High-resolution Modeling for Heads-up Display Equipment. Sponsor: AFMC/ASC.

GRADUATE SCHOOL OF ENGINEERING

LAMONT, GARY B. (ENG)

Lamont, G. B., Consulting with Dr. Robert Ewing of WL/Avionics Directorate on "Computational Circuit Simulation."

Lamont, G. B., Consulting with Dr. Ruth Pachter of WL/Materials Directorate on "Computational Micro-Biology."

Lamont, G. B., Consulting with Dr. Richard Linderman of Rome Laboratory on "High Performance Computational Digital Signal Processing."

*Terzuoli, A. J., Jr., P. J. Collins, Thiele, and G.B. Lamont, consulting on the Genetic Antenna Designs for Remote Sensing. Sponsor: AFTAC

LIEBST, BRADLEY S. (ENY)

Dr. Liebst consulted with Mr. Skip Hickey of the F-22 SPO concerning the equations of motion for aircraft with possibly large c.g. offsets.

LITTLE, Maj JEFFERY K. (ENY)

Wright Laboratory TATLAB (Transparency and Thermal Lab), Electrohydrodynamic heat transfer

Wright Laboratory TATLAB (Transparency and Thermal Lab), Helical enhanced two-phase heat transfer

Wright Laboratory HyTech (Hypersonic Technology Program), Verification of new performance code for SCRAMJET propulsion.

MYKYTKA, EDWARD F. (ENS)

Mykytko, E. F., Evaluation of M&S Staff Officer Course. Sponsor: Defense Modeling and Simulation Office.

Mykytko, E. F., Assessment of GTSIMS for Common Missile Warning System Operational Test and Evaluation. Sponsor: Det 2 AFOTEC/CSF

NIXON, Maj W. BRENT (ENS)

Nixon, W. B. and Heyse, E. C., as members of AFMC Site Restoration Peer Review Committee reviewed AFMC's \$120M annual hazardous waste site restoration program, including projects from Brooks, Edwards, Eglin, Hill, and Tinker AFBs and AF Plants 4 and 6.

Nixon, W. B., conducted peer review of abstracts and manuscripts submitted for presentation at the Air & Waste Management Association's 90th Annual Meeting & Exhibition, Toronto ON, Canada, June 8-13, 1997. Also chaired the Landfill and Composting Technical Coordinating Committee, chaired two conference technical sessions, peer reviewed an engineering handbook, and edited an educational brochure, all for the Air & Waste Management Association.

Nixon, W. B., taught 2 hr. lesson on "Project Peer Review/Validation" for three continuing education course offerings of ENV 417: Environmental Restoration Project Management, AFIT/CEV, Wright-Patterson AFB OH.

Nixon, W. B., consulted with environmental management personnel at Headquarters AFMC and Edwards AFB on hazard assessment and an environmental restoration strategy for a potential chemical/biological warfare material disposal site.

GRADUATE SCHOOL OF ENGINEERING

Nixon, W. B., consulted with personnel at the AF Center for Environmental Excellence and the AF Base Conversion Agency on the remediation and reuse of a landfill at the former Lowry AFB CO.

PACHTER, MEIR (ENG)

Pachter, M., Consulting with WL/FIGC on Flight Control.

Pachter, M., Consulting with Phillips Lab on the ABL project.

Pachter, M., Consulting with WL/AAM on Estimation for EW.

Pachter, M., Consulting with CIGTF at Holloman AFB on Improved Estimation for GPS.

PALAZOTTO, ANTHONY N. (ENY)

Dr. Palazotto consulted with WL/FIB from 25-29 February 1997 on the Hydrodynamic Ram.

Dr. Palazotto consulted with WL/FIB from 25-28 August 1997 on the Hydrodynamic Ram.

Dr. Palazotto consulted with WL/FIB from 24-25 September 1997 on the Hydrodynamic Ram.

PERRAM, Lt Col GLEN P. (ENP)

Evaluated (and participated in panel review) of laser cooling of solids for space-based infrared detectors. Delivered written critique of Los Alamos past research and proposal for AF funding.

POHL, Maj EDWARD A. (ENY)

Major Pohl met with Mike Eviston from the F-22 SPO on 13 September 1996 to discuss some consulting opportunities in the probabilistic analysis and design of experiments area. Maj Pohl is submitting the necessary security paperwork to get access to the F-22 program.

Major Pohl has been consulting with the F-22 System Program office on verification and validation of probabilistic requirements. Major Pohl met several times with Mr. Mike Eviston.

Major Pohl has supported DARPA's High Altitude Endurance Unmanned Aerial Vehicle (HAE UAV) program office. He has served as a member of an Independent Review Team for the Tier III minus program and the Tier II plus program.

Major Pohl continues to support the AMRAAM JSPO in the reliability analysis area.

QUINN, DENNIS W. (ENC)

Quinn, D. and McDougal, J., Armstrong Laboratory, Wright-Patterson AFB OH

SANTOS, EUGENE, JR. (ENG)

*Santos, E., Jr. and S. B. Banks, award of \$60,000 from Phillips Laboratory for "Intelligent Tutoring Systems."

SCHNEIDER, Maj DEAN L (ENG)

Schneider, D. L., consultant on Next Generation Munitions Handling System for Oak Ridge National Laboratory Process and Robotic System.

GRADUATE SCHOOL OF ENGINEERING

SHOMPER, Maj KEITH A. (ENG)

Shomper, K. A., awarded \$5,000 for "Visualization of a Missile Endgame Scenario," by Wright Laboratory, Armament Directorate, Fuzes Branch, 1997.

Shomper, K. A. and T. G. Bailey, awarded \$260,000 for "Modeling and Visualization of C-17 Vortices and Their Affect on Paratrooper Drops," by Aeronautical Systems Center, C-17 Systems Program Office.

STYTZ, Lt Col MARTIN R. (ENG)

*Banks, S. B. and M. R. Stytz, award of \$207,000 from SAF/ST for "Cognitive Sciences Investigations."

Stytz, M. R. and S. B. Banks, award of \$253,000 from ASC for "Development of a Distributed Mission Training Integrated Test Environment (DMTITE) for ASC and ACC."

Stytz, M. R. and S. B. Banks, award of \$272,000 from Phillips Laboratory for "Development of a Virtual Spaceplane Demonstrator."

Stytz, M. R. and S. B. Banks, award of \$50,000 from Armstrong Lab for "Development of Human-Computer Interaction Design Criteria for Virtual Environments."

TALBERT, Maj MICHAEL L. (ENG)

Talbert, M. L., consultant for Maj Steve Matechik at RL/IRDL regarding content-based indexing of multimedia objects.

Talbert, M. L., consultant for WL/AA regarding application of object-oriented databases as a tool for retro-mapping flat-file inputs to certain battle/scenario models.

Talbert, M. L., AFIT P.O.C. for DoD-wide networking for the sake of advertising AFIT's Research Engineer/Research Assistant program. This involves coordinating our advertising with all the Air Force's major civilian and military recruiting functions, as well as physically placing ads in major engineering and engineering recruitment journals.

TEMPLE, Maj MICHAEL A. (ENG)

*Terzuoli, A. J., Jr., P. J. Collins, M. A. Temple, and W. M. Brown, consultants for computer model simulation studies in support of Synthetic Aperture Radar and Infrared Vision. Sponsor: WL

TERZUOLI, ANDREW J., JR. (ENG)

Terzuoli, A. J., Jr., P. J. Collins, and B. M. Welsh, consulting on the Effects of Aircraft Flex on RCS. Sponsor: ASC/EN

Terzuoli, A. J., Jr., P. J. Collins, Thiele, and G.B. Lamont, consulting on the Genetic Antenna Designs for Remote Sensing. Sponsor: AFTAC

Terzuoli, A. J., Jr., G. C. Gerace, and W. M. Brown, consulting on computer simulation studies in support of Missile Fusing Upon LO Vehicles. Sponsor: US/STRATCOM

Terzuoli, A. J., Jr., G. C. Gerace, and W. P. Baker, consulting on computer model simulation studies in support of transfer of Finite Volume Time Domain Methods from Computational Fluid Dynamics to Computational EM. Sponsor: WL

GRADUATE SCHOOL OF ENGINEERING

Terzuoli, A. J., Jr., P. J. Collins, M. A. Temple, and W. M. Brown, consultants for computer model simulation studies in support of Synthetic Aperture Radar and Infrared Vision. Sponsor: WL

TURCOTTE, Maj JEFFREY S. (ENY)

Major Turcotte has been consulting with the Flight Dynamics Branch on bladed disk models and the prediction of forced response of moderately damped bladed disks.

WELSH, BYRON M. (ENG)

*Terzuoli, A. J., Jr., P. J. Collins, and B. M. Welsh, consulting on the Effects of Aircraft Flex on RCS.
Sponsor: ASC/EN

3.13 PRESENTATIONS

[* Denotes duplicate entry, multiple faculty authors.]

ALDRICH, Maj JAMES R. (ENV)

Aldrich, J. R., American Institute of Pollution Prevention: May 97, Environmental Cost Accounting

Aldrich, J. R., State of Michigan, Presented to the Waste Reduction '97 - Tools to Improve Efficiency and Productivity 5th Annual Workshop, Nov 97.

BAILEY, WILLIAM F. (ENP)

Hilbun, W.M., and W.F. Bailey, "Baseline of Thermal Effects on Shock Propagation in Glow Discharges," Workshop on Ionized Gases, United States Air Force Academy, 9-13 June 97.

Bennett, E.J., and W.F. Bailey, "Self-Consistent Treatment of the Neon Positive Column based on the Nonlocal Approximation," 50th Gaseous Electronics Conference, Madison WI, Oct 97.

BANKS, Maj SHEILA B. (ENG)

Banks, S. B. and M. R. Stytz, "An Airbase Logistics System for Accurately Modeling Sortie Generation Within Distributed Interactive Simulations," SCS 1997 SMC Simulation Multiconference: Military, Government, & Aerospace Simulation Conference, Atlanta GA, 6-10- April 1997.

Banks, S. B. and M. R. Stytz, "Accurately Simulating Aircraft Sortie Generation Within Distributed Interactive Simulations Using an Airbase Logistics Model," SPIE 11th Annual International Symposium on Aerospace/Defense Sensing and Controls: AeroSense '97, Modeling and Simulating Sensory Response for Real and Virtual Environments, Orlando FL, 21-25 April 1997.

Banks, S. B. and M. R. Stytz, "Architecture and Implementation of an Airbase Logistics System for Use Within Distributed Interactive Simulations," SimTecT '97: Advanced Simulation Technology and Training, 17-20 Mar 97.

Banks, S. B., M. R. Stytz, and W. D. Wells, "Enabling Computer Supported Collaborative Work Within Distributed Virtual Environments," Interfaces '97 - Man-Machine Interaction, Montpellier, France, 28-30 May 1997. Presented by S. M. Brown.

Banks, S. B., R. A. Harrington, E. Santos, Jr., and S. M. Brown, "Usability Testing of an Intelligent Interface Agent," Proceedings of Interfaces '97 - Man-Machine Interaction, Montpellier, France, 28-30 May 1997.

Banks, S. B., M. R. Stytz, E. Santos, Jr., V. Zurita, and J. L. Benslay, Jr., "Achieving Realistic Performance and Decision-Making Capabilities in Computer-Generated Air Forces," SPIE 11th Annual International Symposium on Aerospace/Defense Sensing and Controls: AeroSense '97, Modeling and Simulating Sensory Response for Real and Virtual Environments, Orlando FL, 21-25 April 1997.

Harrington, R. A., S. B. Banks, and E. Santos, Jr., "GESIA: Uncertainty-Based Reasoning for a Generic Expert System Intelligent User Interface," 8th International Conference on Tools with Artificial Intelligence, Toulouse, France, 16-19 Nov 96.

Stein, D. J., III, S. B. Banks, E. Santos, Jr., and M. L. Talbert, "Utilizing Goal-Directed Data Mining for Incompleteness Repair in Knowledge Bases," Eighth Midwest Artificial Intelligence and Cognitive Science Conference, Dayton OH, 30 May-1 June 1997.

GRADUATE SCHOOL OF ENGINEERING

*Stytz, M. R. and S. B. Banks, "Experience and Lessons Learned in Developing Systems and Applications for Distributed Virtual Environments," SCS 1997 Summer Computer Simulation Conference, Arlington VA, 13-17 July 1997.

*Stytz, M. R., S. B. Banks, and T. Adams, "Issues and Solutions in the Development of Rapidly Reconfigurable Immersive Human-Operated Systems for Distributed Virtual Environments," SPIE 11th Annual International Symposium on Aerospace/Defense Sensing and Controls: AeroSense '97, Modeling and Simulating Sensory Response for Real and Virtual Environments, Orlando FL, 21-25 April 1997.

*Stytz, M. R., S. B. Banks, and T. Adams, "Rapidly Reconfigurable Human-Operated Systems for Distributed Virtual Environments: Requirements and Implementation," SimTecT '97: Advanced Simulation Technology and Training, Canberra, Australia, 17-20 March 1997.

*Stytz, M. R., S. B. Banks, and W. D. Wells, "Tools to Enable Collaboration Within Distributed Virtual Environments: Design, Implementation, and Future Requirements," SimTecT '97: Advanced Simulation Technology and Training, Canberra, Australia, 17-20 March 1997.

*Stytz, M. R., T. Adams, and S. B. Banks, "A Rapidly Reconfigurable Photorealistic Virtual Cockpit," The SCS 1997 SMC Simulation Multiconference: 1997 Military, Government, & Aerospace Simulation Conference, Atlanta GA, 6-10 April 1997.

*Stytz, M. R., S. B. Banks, and E. Santos, "Requirements for Intelligent Aircraft Entities in Distributed Environments," 18th Interservice/Industry Training Systems and Education Conference, Orlando FL, 3-5 Dec 96.

*Stytz, M. R., S. B. Banks, and W. D. Wells, "Requirements and Implementation for Enabling Multiple Modes of Collaboration and Cooperation Within Distributed Virtual Environments," SCS 1997 SMC Simulation Multiconference: 1997 Military, Government, & Aerospace Simulation Conference, Atlanta GA, April 1997.

*Stytz, M. R., S. B. Banks, and G. Williams, "A Virtual Global Positioning Broadcast and Receiver System for Use in Military Distributed Virtual Environments," SCS 1997 SMC Simulation Multiconference: 1997 Military, Government, & Aerospace Simulation Conference, Atlanta GA, April 1997.

*Stytz, M. R., S. B. Banks, and G. Williams, "Design and Implementation of a Virtual Global Positioning System for Use in Distributed Interactive Simulations," SimTecT '97: Simulation Technology and Training, Canberra, Australia, 17-20 Mar 97.

*Stytz, M. R., S. B. Banks, B. W. Garcia, and G. M. Godsell-Stytz, "A Virtual Environment for Emergency Medical Training," Interfaces '97 - Man-Machine Interaction, Montpellier, France, 28-30 May 1997. Presented by Scott Brown.

*Stytz, M. R., S. B. Banks, B. W. Garcia, and G. M. Godsell-Stytz, "The Virtual Emergency Room: A Virtual Environment for Simulating Emergency Medical Triage and Treatment," SimTecT '97: Advanced Simulation Technology and Training, Canberra, Australia, 17-20 March 1997.

*Stytz, M. R., S. B. Banks, B. W. Garcia, and G. M. Godsell-Stytz, "Developing a Distributed Virtual Environment for Emergency Medical Training," SPIE 11th Annual International Symposium on Aerospace/Defense Sensing and Controls: AeroSense '97, Modeling and Simulating Sensory Response for Real and Virtual Environments, Orlando FL, 21-25 April 1997.

*Stytz, M. R., S. B. Banks, W. D. Wells, and S. S. Sheasby, "Collaborative Workspaces for Distributed Virtual Environments: Issues and Implementation Results," SPIE 11th Annual International Symposium on Aerospace/Defense Sensing and Controls: AeroSense '97, Modeling and Simulating Sensory Response for Real and Virtual Environments, Orlando FL, 21-25 April 1997.

GRADUATE SCHOOL OF ENGINEERING

*Stytz, M. R., S. B. Banks, G. Williams, and J. C. Vanderburgh, "The Solar System Modeler: An Immersive Virtual Environment For Exploring The Solar System," Interfaces '97-Man-Machine Interaction, Montpellier, France, 28-30 May 97.

*Stytz, M. R., S. B. Banks, J. J. Kesterman, J. J. Rohrer, and J. C. Vanderburgh, "The Information Pod: An Interface for Immersed Control in a Virtual Environment," Proceedings of Interfaces '97 - Man-Machine Interaction, Montpellier, France, 28-30 May 1997. Presented by Scott Brown.

*Stytz, M. R., S. B. Banks, J. J. Kesterman, and J. C. Vanderburgh, "Requirements and Design of the Information Pod Interface," Seventh International Conference on Human-Computer Interaction, San Francisco CA, 24-29 August 1997.

Wells, W. D., S. B. Banks, and M. R. Stytz, "Requirements and Implementation for Enabling Multiple Modes of Collaboration and Cooperation Within Distributed Virtual Environments," The SCS 1997 SMC Simulation Multiconference: 1997 Military, Government, & Aerospace Simulation Conference, Atlanta GA, 6-10 April 1997.

*Stytz, M. R., S. B. Banks, and E. Santos, Jr., "The Virtual Environments Laboratory at the Air Force Institute of Technology," The Air Force Association AF50: 50th Anniversary of the Air Force Conference and Exposition, Las Vegas NV, 22-26 April 1997.

*Stytz, M. R., S. B. Banks, and E. Santos, Jr., "The Virtual Environments Laboratory at the Air Force Institute of Technology," ACM 50th Anniversary of Computing Conference and Exposition, San Jose CA, 1-5 March 1997.

*Brown, S. M., E. Santos, Jr., and S. B. Banks, "A Dynamic Bayesian Intelligent Interface Agent," Interfaces '97 - Man-Machine Interaction, Montpellier, France, 28-30 May 1997.

*Edwards, M., E. Santos, Jr., S. B. Banks, and M. R. Stytz, "Computer Generated Intelligent Companions for Distributed Virtual Environments," 8th International Conference on Tools with Artificial Intelligence, Toulouse, France, 16-19 Nov 96. Presented by Bob Harrington.

*Williams, G., M. R. Stytz, and S. B. Banks, "A Virtual Global Positioning Broadcast and Receiver System for Use in Military Distributed Virtual Environments," The SCS 1997 SMC Simulation Multiconference: 1997 Military, Government, & Aerospace Simulation Conference, Atlanta GA, 6-10 April 1997.

*Williams, Gary; M. R. Stytz, and S. B. Banks, "A Virtual Global Positioning System for Distributed Interactive Simulation Environments," SPIE 11th Annual International Symposium on Aerospace/Defense Sensing and Controls: AeroSense '97, Modeling and Simulating Sensory Response for Real and Virtual Environments, Orlando FL, 21-25 April 1997.

BERAN, PHILIP S. (ENY)

Beran, P.S. and Morton, S.A., "A Continuation Method for the Calculation of Airfoil Flutter Boundaries," Nonlinear Dynamics Symposium, 35th AIAA Aerospace Sciences Meeting, Reno NV, 6-9 January 1997.

Buxton, B.J. and Beran, P.S., "Validation of Two Shock-Capturing Methods for Calculation of Transonic Airfoil Flutter," 35th AIAA Aerospace Sciences Meeting, Reno NV, 6-9 January 1997.

Beran, P.S. "A Domain-Decomposition Method for Bifurcation Analysis," 35th AIAA Aerospace Sciences Meeting, Reno NV, 6-9 January 1997

Morton, S.A. and Beran, P.S., "Hopf Bifurcation Analysis Applied to Deforming Airfoils at Transonic Speeds," 13th AIAA CFD Conference, Snowmass CO, 29 June-2 July 1997.

GRADUATE SCHOOL OF ENGINEERING

BLECKMANN, CHARLES A. (ENV)

Bleckmann, C. A., Baker III, J. A., Totten, C. T., Hovey, P. W., and McGowin, A.; Biodegradation of JP-8: Effects of Soil Type and Nutrients, Ohio Academy of Science Meeting, 4-6 April 1997, Bowling Green University.

BOWERSOX, RODNEY D.W. (ENV)

*Meyer, M.J., Buter, T.A. and Bowersox, R.D.W., "Compressible Turbulence Measurements in a Supersonic Boundary Layer with Impinging Shock Wave Interaction," AIAA's 35th Aerospace Sciences Meeting and Exhibit, Reno NV, 6-9 Jan 97.

BOWMAN, Lt Col W. JERRY (ENV)

Bowman, W.J., McNeely, C.M. and Stoecker, M.G., "Experimental Study to Determine the Aerodynamic Characteristics of the Modified Rasmussen-Style Wing Sprint Kayak Paddle," 1997 AIAA Applied Aerodynamics Conference, Atlanta GA, 23-25 June 1997.

Bowman, W. J., Himes, M.E., McMullan, M.J., Wier, R.C. and Wilson, M.P., "A Review of Transpiration Cooling in Pipes," AIAA 32nd Thermophysics Conference, Atlanta GA, 23-25 June 1997.

Dickinson, T. J. and Bowman, W.J., "Performance of Three Liquid Metal Heat Pipes During a Space Shuttle Flight," AIAA 32nd Thermophysics Conference, Atlanta GA, 23-25 June 1997.

Dickinson, T. J., Bowman, W.J. and Woloshun, K., "Microgravity Experiment of Three Liquid Metal Heat Pipes," 10th International Heat Pipe Conference, Stuttgart, Germany, 22-25 September 1997.

BRIGHT, VICTOR M. (ENG)

Burns, D. M. and V. M. Bright, "Non-linear Flexures for Stable Deflection of an Electrostatically Actuated Micromirror," SPIE: Microelectronic Structures and MEMS for Optical Processing III, 1997.

Burns, D. M. and V. M. Bright, "Design and Performance of a Double Hot Arm Polysilicon Thermal Actuator," SPIE: Micromachined Devices and Components III, 1997.

Burns, D. M. and V. M. Bright, "Investigation of the Maximum Optical Power Rating for a Micro-electro-mechanical Device," International Conference on Solid-State Sensors and Actuators (Transducers '97), Chicago IL, 16-19 June 1997.

Burns, D. M. and V. M. Bright, "Designs to Improve Polysilicon Micromirror Surface Topology," SPIE: Miniaturized Systems with Micro-Optics and Micromechanics II, 1997.

Burns, D. M. and V. M. Bright, "Micro-Electro-Mechanical Variable Blaze Gratings," Tenth Annual International IEEE Workshop on Micro Electro Mechanical Systems, 1997.

Cowan, W. D. and V. M. Bright, "Vertical Thermal Actuators for Micro-Opto-Electro-Mechanical Systems," SPIE: Microelectronic Structures and MEMS for Optical Processing III, 1997.

Cowan, W. D. and V. M. Bright, "Thermally Actuated Piston Micromirror Arrays," SPIE: Optical Scanning Systems, San Diego CA, 30-31 July 1997.

Butler, J. T., V. M. Bright, and W. D. Cowan, "SPICE Modeling of Polysilicon Thermal Actuators," SPIE: Micromachined Devices and Components III, 1997.

GRADUATE SCHOOL OF ENGINEERING

Butler, J. T., V. M. Bright, and J. H. Comtois, "Advanced Multichip Module Packaging of Microelectromechanical Systems," International Conference on Solid-State Sensors and Actuators (Transducers '97), Chicago IL, 16-19 June 1997.

Butler, J. T., V. M. Bright, and J. R. Reid, "Scanning and Rotating Micromirrors Using Thermal Actuators," SPIE: Optical Scanning Systems, San Diego CA, 30-31 July 1997.

Cowan, W. D., V. M. Bright, and G. C. Dalton, "Measuring Frequency Response of Surface-Micromachined Resonators," SPIE: Microlithography and Metrology in Micromachining III, 1997.

Reid, J. R., V. M. Bright, and J. A. Kosinski, "A Micromachined Vibration Isolation System for a 1GHz STW Resonator," 1997 IEEE International Frequency Control Symposium, Orlando FL, 28-30 May 1997.

Reid, J. R., V. M. Bright, and J. H. Comtois, "Automated Assembly of Flip-Up Micromirrors," International Conference on Solid-State Sensors and Actuators (Transducers '97), Chicago IL, 16-19 June 1997.

Burns, D. M., V. M. Bright, S. C. Gustafson, and E. A. Watson, "Optical Beam Steering Using Surface Micromachined Gratings and Optical Phased Arrays," SPIE: Optical Scanning Systems, San Diego CA, 30-31 July 1997.

Butler, J. T., V. M. Bright, R. J. Saia, and J. H. Comtois, "Extension of High Density Interconnect Multichip Module Technology for MEMS Packaging," SPIE: Micromachined Devices and Components III, 1997.

Cowan, W. D., V. M. Bright, A. A. Elvin, and D. A. Koester, "Modeling of Stress-Induced Curvature in Surface-Micromachined Devices," SPIE: Microlithography and Metrology in Micromachining III, 1997. Invited paper.

Gustafson, S. C., G. R. Little, D. M. Burns, V. M. Bright, and E. A. Watson, "Micro-Actuated Mirrors for Beam Steering," SPIE: Miniaturized Systems with Micro-Optics and Micromechanics II, 1997.

BURGGRAF, LARRY W. (ENP)

Metal Toxicity in Biodegradation, at Wright State University, Geology Department, Hydrogeology Seminar, 29 April 1997.

"Photothermal Interferometric NIR Detection using Sol-gel Materials," AeroSense Meeting, Society of Photo-Optical Instrumentation Engineers, Orlando FL, 21 April 1997.

"Metal Toxicity in Biodegradation," at Air Force Environmental Quality Meeting sponsored by Directorate of Aerospace and Materials Science, AFOSR on 17 Jan 97.

"Materials Modeling", at Wright State University in DAGSI Seminar Series, 4 Dec 96.

Li, G. and L.W. Burgggraf, "Laser processing of sol-gel coatings for infrared applications", SPIE 3136, 257 (1997).

Li, G., and L.W. Burgggraf, "Stability of Anthracene and Stilbene on Nanoporous Sol-Gel Surfaces", MRS Spring '97, March 31- April 4, 1997, San Francisco CA.

BUTER, Maj THOMAS A. (ENY)

Meyer, M.J., Buter, T.A. and Bowersox, R.D.W., "Compressible Turbulence Measurements in a Supersonic Boundary Layer with Impinging Shock Wave Interaction," AIAA's 35th Aerospace Sciences Meeting and Exhibit, Reno NV, 6-9 Jan 97.

GRADUATE SCHOOL OF ENGINEERING

Tilman, C.P., Buter, T.A. and Bowersox, R.D.W., "Characterization of the Flowfield Near a Wrap-Around Fin at Mach 2.8," AIAA 35th Aerospace Sciences Meeting and Exhibit, Reno NV, 6-9 January 1997.

Blake, D. C. and Buter, T. A., "Electromagnetic Scattering Simulations Using Overset Grids on Massively Parallel Computing Platforms," 1997 IEEE AP-S International Symposium, Montreal, Canada, 13-18 July 1997.

CHAN, YUPO (ENS)

Staats, R and Chan, Y., "Approximating a Group-utility-function Between System and Local Decision Makers: a Consolidation of Space-launch Decisions," 13th International Conference on Multiple Criteria Decision, University of Cape Town, South Africa, January 1997.

Chan, Y., "Toward an Intelligent Air Transportation System: the Role of Technology Transfer," Panel Discussion, 76th Annual Transportation Research Board Meeting, Washington, DC, 15 Jan 97.

Lyle, D., Chan, Y., and Chrissis, J., "Improving Information Network Performance: Reliability vs. Invulnerability" National INFORMS Meeting, May 1997.

CHILTON, Maj LAWRENCE K. (ENC)

Chilton, L. and Suri, M., "Mixed HP Elements for Nonlinear Elasticity Finite Element Circus," Courant Institute, New York, April 1997

CHRISSIS, JAMES W. (ENS)

*Lyle, D., Chan, Y., and Chrissis, J., "Improving Information Network Performance: Reliability vs. Invulnerability" National INFORMS Meeting, May 1997.

COLLINS, Maj PETER J. (ENG)

Hermes, D. J. and P. J. Collins, "Optimized Design Methodology of Cavity-Backed Microstrip Antennas with Dielectric Overlays," Antenna Applications Symposium, September 1997.

D'AZZO, JOHN J. (ENG)

*McKay, J., M. Pachter, and J. D'Azzo, "Optimization of a GPS-Based Navigation Reference System," 1997 AIAA Guidance, Navigation and Control Conference, New Orleans LA, 11-13 August 1997.

DECKRO, RICHARD F. (ENS)

Doyle, M. P., Richard F. Deckro, R. F., Jackson, J. A., and Kloeber, J. M., Jr., "A Value Function Approach to Information Operations MOEs: A Preliminary Study," 65th MORS Symposium, June 1997.

Haertling, K. P., Deckro, R. F., Jackson, J. A., and Gunsch, G. H. "Implementing Information Warfare in the Weapon Targeting Process," 65th MORS Symposium, June 1997.

*Grelk, B. J., Jackson, J. A., Kloeber, J. M., Jr., and Deckro, R. F. "A Modified Decision Support System for Remediation Technology Selection Strategies," National INFORMS Meeting, May 1997.

Papatyi, A. F., Deckro, R. F., Kloeber, J. M., Jr. and Jackson, J. A., "A Prototype DNAPL Decision Model," National INFORMS Meeting, May 1997.

GRADUATE SCHOOL OF ENGINEERING

Timmerman, T. J., Deckro, R. F., Kloeber, J. M., Jr. and Jackson, J. A., "Elements of Risk in Emerging Soil Remediation Techniques," National INFORMS Meeting, November 1996.

Deckro, R. F., Jackson, J. A., Lehmkuhl, L. J., and Moore, J. T., "Using Parametric Programming in Air Force Modeling," Third Air Force Operations Research Symposium, USAFA, October, 1996.

DESIMIO, MARTIN P. (ENG)

*Rathbun, T. F., S. K. Rogers, M. P. DeSimio, and M. E. Oxley, "MLP Iterative Construction Algorithm," SPIE Applications and Science of Artificial Neural Networks III, Orlando FL, April 1997. Invited paper.

DEVILBISS, Capt STEWART L (ENG)

DeVilbiss, S. L., "The Global Positioning System and You," Invited lecture for the Great Lakes Region Civil Air Patrol Conference, 1 March 1997.

DeVilbiss, S. L., "The Global Positioning System," NAECON tutorial, Dayton OH, 14 July 1997.

Laxton, M. and S. L. DeVilbiss, "GPS Multipath Mitigation During Code Tracking," American Control Conference, Jun 97

FRANKE, MILTON E. (ENY)

Crisp, H.E. and Franke, M.E., "Engineering of Complex Systems in the 21st Century," ASME 1996 International Mechanical Engineering Congress and Exposition, Atlanta Hilton, Atlanta GA, 18-21 November 1996.

Bradley, L.C. and Franke, M.E., "An Experimental Investigation of a Sting-Mounted Circulation Control Wing," AIAA 35th Aerospace Sciences Meeting, Reno NV, 6-9 January 1997.

Crisp, H.E. and Franke, M.E., "Engineering Systems in the 21st Century," 1997 National Design Engineering Conference, National Manufacturing Week, McCormick Place, Chicago IL, 10-12 March 1997.

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LITTLE, Maj JEFFERY K. (ENY)

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MALL, SHANKAR (ENY)

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QUINN, DENNIS W. (ENC)

Quinn, D. W., "The relationship Between Sensitivity as Biologists Use the Term, and Sensitivity as Calculated in the Computer Program Simusolve," Armstrong Lab (AL), Monday Morning Modelers Meeting, AL, WPAFB OH, February 1997

GRADUATE SCHOOL OF ENGINEERING

RAINES, Maj RICHARD A. (ENG)

Raines, R. A., R. Janoso, D. Stenger, "Performance Studies of Low Earth Orbit Satellite (LEOS) Communication Networks for Global Communications," Space Technology & Applications International Forum (STAIF-97), January 1997.

*Gerace, G. C., R. F. Mills, R. A. Raines, B. W. Suter, A. J. Terzuoli, and B. M. Welsh, "Military Communications Graduate Education Curriculum," 1996 ASEE Annual Conference, October 1996.

REID, Maj THOMAS F. (ENC)

Reid, T. F., "Admission Control Strategies for Transient Source Systems," INFORMS, Atlanta, GA, Nov 97.

RIDGELY, BRETT D. (ENY)

Jacques, D. R., Canfield, R. A., Ridgely, D. B. and Spillman, M. S., "A MATLAB Toolbox for Fixed-Order, Mixed-Norm Control Synthesis," IEEE Control Systems Magazine, Vol. 16, No. 5, pp. 36-44, October 1996.

Smith, L., Ridgely, D. B., Walker, D. and Luke, J., "Application of a Mixed H-2/H-inf Approach with a Singular H-inf constraint," International Journal of Systems Science, Vol. 28, No. 1, pp. 55-64, 1997.

Spillman, M. and Ridgely, D. B., "Flight Control Applications of l-1 Optimization," Journal of Guidance, Control, and Dynamics, Vol. 20, No. 1, pp. 49-56, January-February 1997.

ROBERTSON, Maj DAVID D. (ENY)

Robertson, D.D. and Mall, S., "Incorporating Fiber Damage in a Micromechanical Analysis of Metal Matrix Composite Laminates," Journal of Composites Technology and Research, Vol. 18, No. 4, pp. 265-273, October 1996. Refereed.

Solti, J.P., Robertson, D.D. and Mall, S., "Micromechanics Based Analysis of Fatigue in Ceramic Matrix Composites," Proceedings of the American Society for Composites. Eleventh Technical Conference, W.S. Johnson (ed.) Atlanta GA, pp. 390-395, October 1996. Non-Refereed.

Robertson, D.D., Solti, J.P. and Mall, S., "A Systematic Shear-Lag Approach for Analyzing the Failure Mechanisms in Ceramic Matrix Composites," Proceedings of the ASME Aerospace and Materials Divisions, AD-Vol. 51/MD-Vol. 73, edited by Chan et. al., pp. 265-270, November 1996. Non-Refereed.

*Solti, J.P., Mall, S. and Robertson, D.D., "Modeling of Matrix Failure in Ceramic Matrix Composites," ASTM Journal of Composites Technology and Research, Vol. 19, No. 1, pp. 29-40, 1997. Refereed.

ROGERS, STEVEN K. (ENG)

Rathbun, T. F., S. K. Rogers, M. P. DeSimio, and M. E. Oxley, "MLP Iterative Construction Algorithm," SPIE Applications and Science of Artificial Neural Networks III, Orlando FL, April 1997. Invited paper.

ROH, WON B. (ENP)

Hengst, G. T., and W. B. Roh, "Experimental Investigation of Chaotic dynamics in Single-mode Diode Lasers with Phase-conjugate Feedback," presented at 1996 Fall Meeting of APS/OS, Athens OH, 1-2 November 1996.

Turner, M. D., W. B. Roh, and K. Schepler, "Degenerate Four-wave Mixing at 2.1 μ m in Gallium Antimonide with Cr, Tm, Ho:YAG Laser," Presented at the 1997 Advanced Solid-state Lasers Topical Meeting, Orlando FL, 27-29 January 1997.

GRADUATE SCHOOL OF ENGINEERING

Hengst, G. T., W. B. Roh, and A. Gavrielides, "Experimental Investigation of Chaotic dynamics in Single-mode Semiconductor Laser Diodes with Phase-conjugate Feedback," presented at 1997 Spring Meeting of APS/OS, Bowling Green OH, 2-3 May 1997.

SANTOS, EUGENE, JR. (ENG)

*Banks, S. B., R. A. Harrington, E. Santos, Jr., and S. M. Brown, "Usability Testing of an Intelligent Interface Agent," *Interfaces '97 - Man-Machine Interaction*, Montpellier, France, 28-30 May 1997.

*Banks, S. B., M. R. Stytz, E. Santos, Jr., V. Zurita, and J. L. Benslay, Jr., "Achieving Realistic Performance and Decision-Making Capabilities in Computer-Generated Air Forces," *SPIE 11th Annual International Symposium on Aerospace/Defense Sensing and Controls: AeroSense '97, Modeling and Simulating Sensory Response for Real and Virtual Environments*, Orlando FL, 21-25 April 1997.

*Harrington, R. A., S. B. Banks, and E. Santos, Jr., "GESIA: Uncertainty-Based Reasoning for a Generic Expert System Intelligent User Interface," *8th International Conference on Tools with Artificial Intelligence*, Toulouse, France, 16-19 Nov 96.

*Stytz, M. R., S. B. Banks, and E. Santos, Jr., "The Virtual Environments Laboratory at the Air Force Institute of Technology," *The Air Force Association AF50: 50th Anniversary of the Air Force Conference and Exposition*, Las Vegas NV, 22-26 April 1997.

*Stytz, M. R., S. B. Banks, and E. Santos, Jr., "The Virtual Environments Laboratory at the Air Force Institute of Technology," *ACM 50th Anniversary of Computing Conference and Exposition*, San Jose CA, 1-5 March 1997.

SHOMPER, Maj KEITH A. (ENG)

Shomper, K. A., "Haptic Rendering," *IEEE/AESS 14th Annual Symposium, Synthetic Visualization: Systems and Applications*, 9 April 1997.

SPENNY, CURTIS H. (ENY)

Spenny, C.H., and Schneider, D.L., "Object Resolved Teleoperation," *Proceedings of the 1997 IEEE International Conference on Robotics and Automation Conference*, Albuquerque NM, pp. 1105-1111, May 1997. Non-Refereed.

STYTZ, Lt Col MARTIN R. (ENG)

Stytz, M. R., S. B. Banks, and E. Santos, Jr., "The Virtual Environments Laboratory at the Air Force Institute of Technology," *The Air Force Association AF50: 50th Anniversary of the Air Force Conference and Exposition*, Las Vegas NV, 22-26 April 1997.

Stytz, M. R., S. B. Banks, and E. Santos, Jr., "The Virtual Environments Laboratory at the Air Force Institute of Technology," *ACM 50th Anniversary of Computing Conference and Exposition*, San Jose CA, 1-5 March 1997.

Stytz, M. R. and S. B. Banks, "Experience and Lessons Learned in Developing Systems and Applications for Distributed Virtual Environments," *SCS 1997 Summer Computer Simulation Conference*, Arlington VA, 13-17 Jul 97.

Stytz, M. R., S. B. Banks, and T. Adams, "Issues and Solutions in the Development of Rapidly Reconfigurable Immersive Human-Operated Systems for Distributed Virtual Environments," *SPIE 11th Annual International Symposium on Aerospace/Defense Sensing and Controls: AeroSense '97, Modeling and Simulating Sensory Response for Real and Virtual Environments*, Orlando FL, 21-25 April 1997.

GRADUATE SCHOOL OF ENGINEERING

Stytz, M. R., S. B. Banks, and T. Adams, "Rapidly Reconfigurable Human-Operated Systems for Distributed Virtual Environments: Requirements and Implementation," SimTecT '97: Advanced Simulation Technology and Training, Canberra, Australia, 17-20 March 1997.

Stytz, M. R., S. B. Banks, and W. D. Wells, "Tools to Enable Collaboration Within Distributed Virtual Environments: Design, Implementation, and Future Requirements," SimTecT '97: Advanced Simulation Technology and Training, Canberra, Australia, 17-20 March 1997.

Stytz, Martin R.; T. Adams, and S. B. Banks, "A Rapidly Reconfigurable Photorealistic Virtual Cockpit," The SCS 1997 SMC Simulation Multiconference: 1997 Military, Government, & Aerospace Simulation Conference, Atlanta GA, 6-10 April 1997.

Stytz, M. R., S. B. Banks, and E. Santos, "Requirements for Intelligent Aircraft Entities in Distributed Environments," 18th Interservice/Industry Training Systems and Education Conference, Orlando FL, 3-5 Dec 96.

Stytz, M. R., S. B. Banks, and W. D. Wells, "Requirements and Implementation for Enabling Multiple Modes of Collaboration and Cooperation Within Distributed Virtual Environments," SCS 1997 SMC Simulation Multiconference: 1997 Military, Government, & Aerospace Simulation Conference, Atlanta GA, April 1997.

Stytz, M. R., S. B. Banks, and G. Williams, "A Virtual Global Positioning Broadcast and Receiver System for Use in Military Distributed Virtual Environments, SCS 1997 SMC Simulation Multiconference: 1997 Military, Government, & Aerospace Simulation Conference, Atlanta GA, April 1997.

Stytz, M. R., S. B. Banks, and G. Williams, "Design and Implementation of a Virtual Global Positioning System for Use in Distributed Interactive Simulations," SimTecT '97: Simulation Technology and Training, Canberra, Australia, 17-20 March 1997.

Stytz, M. R., S. B. Banks, B. W. Garcia, and G. M. Godsell-Stytz, "A Virtual Environment for Emergency Medical Training," Interfaces '97 - Man-Machine Interaction, Montpellier, France, 28-30 May 1997. Presented by Scott Brown.

Stytz, M. R., S. B. Banks, B. W. Garcia, and G. M. Godsell-Stytz, "The Virtual Emergency Room: A Virtual Environment for Simulating Emergency Medical Triage and Treatment," SimTecT '97: Advanced Simulation Technology and Training, Canberra, Australia, 17-20 March 1997.

Stytz, M. R., S. B. Banks, B. W. Garcia, and G. M. Godsell-Stytz, "Developing a Distributed Virtual Environment for Emergency Medical Training," SPIE 11th Annual International Symposium on Aerospace/Defense Sensing and Controls: AeroSense '97, Modeling and Simulating Sensory Response for Real and Virtual Environments, Orlando FL, 21-25 April 1997.

Stytz, M. R., S. B. Banks, W. D. Wells, and S. S. Sheasby, "Collaborative Workspaces for Distributed Virtual Environments: Issues and Implementation Results," SPIE 11th Annual International Symposium on Aerospace/Defense Sensing and Controls: AeroSense '97, Modeling and Simulating Sensory Response for Real and Virtual Environments, Orlando FL, 21-25 April 1997.

Stytz, M. R., S. B. Banks, G. Williams, and J. C. Vanderburgh, "The Solar System Modeler: An Immersive Virtual Environment For Exploring The Solar System," Interfaces '97 - Man-Machine Interaction, Montpellier, France, 28-30 May 1997.

Stytz, M. R., S. B. Banks, J. J. Kesterman, J. J. Rohrer, and J. C. Vanderburgh, "The Information Pod: An Interface for Immersed Control in a Virtual Environment," Interfaces '97 - Man-Machine Interaction, Montpellier, France, 28-30 May 97. Presented by Scott Brown.

GRADUATE SCHOOL OF ENGINEERING

Stytz, M. R., S. B. Banks, J. J. Kesterman, and J. C. Vanderburgh, "Requirements and Design of the Information Pod Interface," Seventh International Conference on Human-Computer Interaction, San Francisco CA, 24-29 August 1997.

Stytz, M. R., S. B. Banks, and W. D. Wells, "Requirements and Implementation for Enabling Multiple Modes of Collaboration and Cooperation Within Distributed Virtual Environments," SCS 1997 SMC Simulation Multiconference: 1997 Military, Government, & Aerospace Simulation Conference, Atlanta GA, April 1997.

Stytz, M. R., S. B. Banks, and G. Williams, "A Virtual Global Positioning Broadcast and Receiver System for Use in Military Distributed Virtual Environments, SCS 1997 SMC Simulation Multiconference: 1997 Military, Government, & Aerospace Simulation Conference, Atlanta GA, April 1997.

Stytz, M. R., S. B. Banks, and G. Williams, "Design and Implementation of a Virtual Global Positioning System for Use in Distributed Interactive Simulations," SimTecT '97: Simulation Technology and Training, Canberra, Australia, 17-20 Mar 97.

Stytz, M. R., S. B. Banks, B. W. Garcia, and G. M. Godsell-Stytz, "A Virtual Environment for Emergency Medical Training," Interfaces '97-Man-Machine Interaction, Montpellier, France, 28-30 May 97. Presented by Scott Brown.

Stytz, M. R., S. B. Banks, B. W. Garcia, and G. M. Godsell-Stytz, "The Virtual Emergency Room: A Virtual Environment for Simulating Emergency Medical Triage and Treatment," SimTecT '97: Advanced Simulation Technology and Training, Canberra, Australia, 17-20 March 1997.

Stytz, M. R., S. B. Banks, B. W. Garcia, and G. M. Godsell-Stytz, "Developing a Distributed Virtual Environment for Emergency Medical Training," SPIE 11th Annual International Symposium on Aerospace/Defense Sensing and Controls: AeroSense '97, Modeling and Simulating Sensory Response for Real and Virtual Environments, Orlando FL, 21-25 Apr 97.

Stytz, M. R., S. B. Banks, W. D. Wells, and S. S. Sheasby, "Collaborative Workspaces for Distributed Virtual Environments: Issues and Implementation Results," SPIE 11th Annual International Symposium on Aerospace/Defense Sensing and Controls: AeroSense '97, Modeling and Simulating Sensory Response for Real and Virtual Environments, Orlando FL, 21-25 April 1997.

Stytz, M. R., S. B. Banks, G. Williams, and J. C. Vanderburgh, "The Solar System Modeler: An Immersive Virtual Environment For Exploring The Solar System," Interfaces '97 - Man-Machine Interaction, Montpellier, France, 28-30 May 1997.

Stytz, M. R., S. B. Banks, J. J. Kesterman, J. J. Rohrer, and J. C. Vanderburgh, "The Information Pod: An Interface for Immersed Control in a Virtual Environment," Interfaces '97 - Man-Machine Interaction, Montpellier, France, 28-30 May 1997. Presented by Scott Brown.

Stytz, M. R., S. B. Banks, J. J. Kesterman, and J. C. Vanderburgh, "Requirements and Design of the Information Pod Interface," Seventh International Conference on Human-Computer Interaction, San Francisco CA, 24-29 August 1997.

*Banks, S. B. and M. R. Stytz, "An Airbase Logistics System for Accurately Modeling Sortie Generation Within Distributed Interactive Simulations," SCS 1997 SMC Simulation Multiconference: Military, Government, & Aerospace Simulation Conference, Atlanta GA, 6-10 April 1997.

*Banks, S. B. and M. R. Stytz, "Accurately Simulating Aircraft Sortie Generation Within Distributed Interactive Simulations Using an Airbase Logistics Model," SPIE 11th Annual International Symposium on Aerospace/Defense Sensing and Controls: AeroSense '97, Modeling and Simulating Sensory Response for Real and Virtual Environments, Orlando FL, 21-25 April 1997.

GRADUATE SCHOOL OF ENGINEERING

*Banks, S. B. and M. R. Stytz, "Architecture and Implementation of an Airbase Logistics System for Use Within Distributed Interactive Simulations," SimTecT '97: Advanced Simulation Technology and Training, 17-20 Mar 97.

*Banks, S. B., M. R. Stytz, and W. D. Wells, "Enabling Computer Supported Collaborative Work Within Distributed Virtual Environments," Interfaces '97-Man-Machine Interaction, Montpellier, France, 28-30 May 97.

*Banks, S. B., M. R. Stytz, E. Santos, Jr., V. Zurita, and J. L. Benslay, Jr., "Achieving Realistic Performance and Decision-Making Capabilities in Computer-Generated Air Forces," SPIE 11th Annual International Symposium on Aerospace/Defense Sensing and Controls: AeroSense '97, Modeling and Simulating Sensory Response for Real and Virtual Environments, Orlando FL, 21-25 April 1997.

*Wells, W. D., S. B. Banks, and M. R. Stytz, "Requirements and Implementation for Enabling Multiple Modes of Collaboration and Cooperation Within Distributed Virtual Environments," The SCS 1997 SMC Simulation Multiconference: 1997 Military, Government, & Aerospace Simulation Conference, Atlanta GA, 6-10 April 1997.

Williams, G., M. R. Stytz, and S. B. Banks, "A Virtual Global Positioning Broadcast and Receiver System for Use in Military Distributed Virtual Environments," The SCS 1997 SMC Simulation Multiconference: 1997 Military, Government, & Aerospace Simulation Conference, Atlanta GA, 6-10 April 1997.

Williams, Gary; M. R. Stytz, and S. B. Banks, "A Virtual Global Positioning System for Distributed Interactive Simulation Environments," SPIE 11th Annual International Symposium on Aerospace/Defense Sensing and Controls: AeroSense '97, Modeling and Simulating Sensory Response for Real and Virtual Environments, Orlando FL, 21-25 April 1997.

*Edwards, M., E. Santos, Jr., S. B. Banks, and M. R. Stytz, "Computer Generated Intelligent Companions for Distributed Virtual Environments," 8th International Conference on Tools with Artificial Intelligence, Toulouse, France, 16-19 November 1996. Presented by Bob Harrington.

SUTER, BRUCE W. (ENG)

Suter, B. W. and K. S. Stevens, "Low Power, High Performance FFT Design," A. Sydow (editor), IMACS World Congress on Scientific Computation, Modeling, and Applied Mathematics, Berlin, Germany, August 1997.

Huang, Y. and B. W. Suter, "Fractional Wavelet Packet Transforms," IEEE Signal Processing Workshop, Leon, Norway, October 1996.

*Gerace, G. C., R. F. Mills, R. A. Raines, B. W. Suter, A. J. Terzuoli, and B. M. Welsh, "Military Communications Graduate Education Curriculum," 1996 ASEE Annual Conference, October 1996.

TALBERT, Maj MICHAEL L. (ENG)

*Stein, D. J., III, S. B. Banks, E. Santos, Jr., and M. L. Talbert, "Utilizing Goal-Directed Data Mining for Incompleteness Repair in Knowledge Bases," Eighth Midwest Artificial Intelligence and Cognitive Science Conference, Dayton OH, 30 May-1 June 1997.

TERZUOLI, ANDREW J. (ENG)

Harmon, F. G. and A. J. Terzuoli, Jr., "Application of a Finite Volume Time Domain Technique to Three Dimensional Objects," Thirteenth Annual Review of Progress in Applied Computational Electromagnetics, Monterey CA, 17-21 March 1997.

Harmon, F. G. and A. J. Terzuoli, Jr., "Application of a Finite Volume Time Domain Maxwell Equation Solver to Three Dimensional Objects," AIAA 28th Plasmadynamics and Laqseers Conference, Atlanta GA, 23-25 June 1997.

GRADUATE SCHOOL OF ENGINEERING

Harmon, F. G. and A. J. Terzuoli, Jr., "Application of a Finite Volume Time Domain Technique to Three Dimensional Objects," 1996 IEEE/APS International Symposium, Montreal, Canada, 13-18 July 1997.

Harmon, F. G. and A. J. Terzuoli, Jr., "Application of a Finite Volume Time Domain Method to Three Dimensional Objects," PIERS: Progress in Electromagnetics Research Symposium, Cambridge MA, 7-11 July 97.

Sandlin, B. S. and A. J. Terzuoli, Jr., "A Genetic Antenna Design for Improved Radiation Over Earth," 21st Annual Antenna Applications Symposium, Monticello IL, 17-18 September 97.

Taylor, J. M. and A. J. Terzuoli, Jr., "Evaluation of Near Field Electromagnetic Scattering Codes for Airborne Application," Thirteenth Annual Review of Progress in Applied Computational Electromagnetics, Monterey CA, 17-21 March 97.

Taylor, J. M. and A. J. Terzuoli, Jr., "On the Concept of Near Field Radar Cross Section," 1996 IEEE/APS International Symposium, Montreal, Canada, 13-18 July 97.

*Gerace, G. C., R. F. Mills, R. A. Raines, B. W. Suter, A. J. Terzuoli, and B. M. Welsh, "Military Communications Graduate Education Curriculum," 1996 ASEE Annual Conference, October 1996.

TURCOTTE, Maj JEFFREY S. (ENY)

O'Reilly, O.M. and Turcotte, J.S., "Another Mode of Vibration in a Timoshenko Beam," Journal of Vibration, Vol. 198, No. 4, pp. 517-521

O'Reilly, O.M. and Turcotte, J.S., "Free Vibration of a Whirling Rod," Proceedings of 1997 Design Engineering Technical Conference, VIB-4072, 15-17 September 1997.

WEEKS, DAVID E. (ENP)

MacLachlan, M.J., (DS-96S) and D.E. Weeks, "An Application of the Interaction Picture to Calculate S-Matrix Elements for Reactive Scattering," AFOSR HEDM Contractors Meeting, Chantilly VA, 1-3 Jun 97.

Greene, K.D., (GAP-96D), D.E. Weeks, M.R. Gregg, and R.L. Hengehold, "A Theoretical Determination of the Linear Absorption Coefficient of Si[110]/Si_{1-x}Gex Multiple Quantum Well (MQW) Infrared Photodetectors," Fall OSAPS meeting, Athens OH, 1-2 Nov 96.

Weeks, D.E., and R.S. Calfas (DS-96D), "A New Application of Absorbing Boundary Conditions for Computing Two-Dimensional Collinear Quantum Reactive Scattering Matrix Elements," Fall OSAPS meeting, Athens OH, 1-2 Nov 96.

WELSH, BYRON M. (ENG)

*Gerace, G. C., R. F. Mills, R. A. Raines, B. W. Suter, A. J. Terzuoli, and B. M. Welsh, "Military Communications Graduate Education Curriculum," 1996 ASEE Annual Conference, October 1996.

WIESEL, WILLIAM E. (ENY)

Wiesel, W.E., Spaceflight Dynamics, 2nd Edition, McGraw-Hill, 1997.

WOOD, AIHUA (ENC)

Wood, A. W. and Wood, W. D., "Integral Equation Methods for Electromagnetic Scattering from Cavities", International Conference on Differential Equations and Dynamical Systems, University of Waterloo, Ontario, August 1997.

WOLF, Lt Col PAUL J. (ENP)

Pope, R.S., P.J. Wolf, J.J. Cornecelli, and G. P. Perram, "The Collisional Broadening of Spectral Lines in the $X \rightarrow b$ System of O_2 Measured by Fourier Transform Spectroscopy," 11th International Conference of Fourier Transform Spectroscopy, Athens GA, 11 Aug 97.

Byers, D.L. and P.J. Wolf, "Investigation of BaO and Ba Pulsed Laser Ablation in N_2 , O_2 , and Discharged O_2 at Low Laser Fluence," presented at the Fall 1996 Meeting of the Ohio Section of the American Physical Society, 1-2 Nov 96, Athens OH.

Berman, L.M., and P.J. Wolf, "Laser-Induced Breakdown Spectroscopy of Nickel in Solution Via Surface Excitation," presented at the Fall 1996 Meeting of the Ohio Section of the American Physical Society, 1-2 Nov 96, Athens OH.

YEO, YUNG KEE (ENP)

Scott, M.B., Y.K. Yeo, R.L. Hengehold, and J.D. Scofield, "Implantation Temperature and Anneal Temperature Effects on Deep Level Traps in Cr and Mg Implanted 6H-SiC," presented at the Fall 1996 Meeting of the Ohio Section of the American Physical Society, 1-2 Nov 96, Athens OH.

Yeo, Y.K., E. Silkowski, R.L. Hengehold, and MA Khan, "Photoluminescence Study of Ion-implanted GaN," presented at the 4th Wide Bandgap and Nitride Workshop, 11-14 Mar 97, St. Louis MO.

Scott, M.B., Y.K. Yeo, R.L. Hengehold, and J.D. Scofield, "Deep Level Trap Analysis of Ion-implanted n-type 6H-SiC by Double Correlated Deep Level Transient Spectroscopy," presented at the March 1996 Meeting of the American Physical Society, 17-21 Mar 97, Kansas City MO.

Silkowski, E., Y.K. Yeo, R.L. Hengehold, and L.R. Everitt, "Luminescence and Annealing Studies of Er-Implanted GaN with and without Oxygen Co-doping," presented at the 19th International Conference on Defects in Semiconductors (ICDS-19), 21-25 Jul 97, Aveiro, Portugal.

Scott, M.B., J.D. Scofield, Y.K. Yeo, and R.L. Hengehold "Deep Level Defect Study of Ion Implanted (Ar, Mg, Cr) n-Type 6H-SiC by Deep Level Transient Spectroscopy," presented at the International Conference on SiC, III-Nitrides and Related Materials (ICSC III-N'97), 31 Aug-5 Sep 97, Stockholm, Sweden.

3.14 OTHER SIGNIFICANT PROFESSIONAL ACTIVITIES

BROWN, WILLIAM M. (ENG)

Brown, W.M., member of the Institute of Electronic & Electrical Engineers Aerospace and Electronic Systems Society (IEEE AESS) was on the committee to select the best paper.

CHAN, YUPO (ENS)

Dr. Chan served as chair of Management Group C of the American Society of Civil Engineers.

Dr. Chan was elected to the Board of Directors of the Military Operations Research Society.

Dr. Chan served as the editor of Application of Advanced Operations Research Methods to Mobility Modeling, a special issue of Military Operations Research, Vol 1, No 4, Winter 1996.

Dr. Chan was elected as Secretary of the Omega Rho International Honor Society.

DECKRO, RICHARD F. (ENS)

Deckro, R. F. Outside reviewer of applicants file for promotion to Professor. Sponsor: Southern Illinois University at Carbondale.

Dr. Deckro was named to the Editorial Board of The JAI Press Publication Series Advances in Mathematical Programming and Financial Planning.

Dr Deckro was named to the International Program Committee for the The International Conference on Methods and Applications of Multicriteria Decision Making, held in Mons, Belgium in May 1997.

Dr Deckro and LTC Kloeber, in conjunction with Dr George Polak of Wright State University, organized and hosted the Winter Meeting of the Cincinnati/Dayton INFORMS chapter.

Dr Deckro chaired a session entitled "Resource Constrained Project Scheduling III" at the Fifth International Workshop on Project Management and Scheduling, Poznan, Poland, 1996.

GOLTZ, MARK N. (ENV)

Appointed to the Science Advisory Committee of U.S. EPA's Great Lakes/Mid-Atlantic Hazardous Substance Research Center

Appointed to the City of Beavercreek Environmental Advisory Committee

HOUPIS, CONSTANTINE H. (ENG)

Houpis, C.H., chapter "Design Methods for MIMO LTI Systems - Theory (QFT) Technique," CRC Press of The Control Handbook, W.S. Levine, editor.

JACKSON, Lt Col JACK A. (ENS)

Jackson, J. A. and L. J. Lehmkuhl. AF 2025 white paper assessment. Sponsor: Air University.

LTC Kloeber and Lt Col Jackson chaired a session, entitled "Decision Making Involving Cost, Technology, and Environmental Risk," at the INFORMS national conference in Washington DC in May 1996.

GRADUATE SCHOOL OF ENGINEERING

KANKO, Maj MARK A. (ENG)

Kanko, M.A., met with Jon Gross from the Software Engineering Institute (SEI) to discuss ways to improve cooperative efforts between SEI and AFIT. Mr. Gross offered direct access to any printed technical reports published by SEI.

KLOEBER, LTC JACK (ENS)

Deckro, R. F., J. A. Jackson, J. M. Kloeber, and G. S. Parnell. Decision and Risk Analysis Applied to Remediation Technologies. Sponsor: Department of Energy.

LAMONT, GARY B. (ENG)

Lamont, G.B., Session Chairman for the Parallel and Distributed Algorithms Track and a Genetic Algorithms Track at the ACM Symposium on Applied Computing, SAC'96, 17-20 February 1996.

Lamont, G.B., Chairperson of the ACM Special Interest Group of Applications (SIGAPP).

LEHMKUHL, Maj LEE J. (ENS)

*Jackson, J. A. and L. J. Lehmkuhl. AF 2025 white paper assessment. Sponsor: Air University.

MILLS, Maj ROBERT F. (ENG)

Mills, R.F., Session Chairman for Simulation and Modeling for the IEEE 1996 Tactical Communications Conference, 30 Apr-2 May 96, Ft Wayne IN.

MOORE, Lt Col JAMES T. (ENS)

Lt Col Moore was selected as an associate editor for the Military Operations Research journal.

ROGERS, STEVEN K. (ENG)

Rogers, S.K., reviewer for the International Conference on Pattern Recognition '96.

RUCK, Maj DENNIS W. (ENG)

Ruck, D.W., chairman of the SPIE International Conference on Application and Science of Artificial Neural Networks II, Orlando FL, 8-12 Apr 96.

SANTOS, EUGENE, JR. (ENG)

Santos, E., Jr., member of the Organizing and Programs Committee for the Symposium on Human Interaction with Complex Systems, Dayton OH, Jul 96.

Santos, E., Jr., co-guest Editor for Presence: Teleoperators and Virtual Environments, MIT Press, special issue on Virtual Environments for Medicine.

SCHNEIDER, Maj DEAN L. (ENG)

Schneider, D.L., Technical Committee for NAECON in charge of coordinating the Special Sessions.

GRADUATE SCHOOL OF ENGINEERING

STYTZ, Lt Col MARTIN R. (ENG)

Stytz, M.R., recipient of the Dr. J. Russ Engineering Award, IEEE Dayton Chapter, February 1996.

Stytz, M.R., co-guest Editor for Pressence: Teleoperators and Virtual Environments, MIT Press, special issue on Virtual Environments for Medicine.

Stytz, M.R., member of the Program Committee for the Medicine Meets Virtual Reality IV Conference, San Diego CA, 17-20, January 1996.

Stytz, M.R., on both the Air Combat Command and AETC Technical Advisory Boards for Modeling and Simulation.

Stytz, M.R., on the Defense Modeling and Simulation Office's Architecture Management Group for the High Level Architecture for DoD Modeling and Simulation.

SUTER, BRUCE W. (ENG)

Suter, B.W., associate editor of the IEEE Transactions on Signal Processing, 1994 through 1996.

Suter, B.W., reviewer for IEEE Transactions on Signal Processing, 1993 through 1996.

Suter, B.W., reviewer for IEEE Signal Processing Letters, 1994 through 1996.

Suter, B.W., served on the JASON Committee as they explored military applications of wavelets.

Suter, B.W., member of the Program Committee which organized the SPIE Conference on Digital Signal Processing Technology, Orlando FL, 1996.

Suter, B.W., Session Chairman for SPIE Conference on Digital Signal Processing Technology, Orlando FL, April 1996.

Suter, B.W., Session Chairman for IEEE Digital Signal Processing Workshop, Loen, Norway, September 1996.

SECTION 4

GRADUATE SCHOOL OF LOGISTICS AND ACQUISITION MANAGEMENT

4.0 OVERVIEW

The mission of the Graduate School of Logistics and Acquisition Management (AFIT/LA) is to provide uniquely defense-oriented graduate education in logistics management and acquisition management to Air Force and DoD leaders. Through high quality graduate instruction, research, and consultation, AFIT/LA provides management knowledge and tools to solve defense logistics and acquisition problems. AFIT/LA focuses its educational efforts in ten separate graduate programs: acquisition logistics, logistics management, contracting management, cost analysis, information management, information resource management, systems management, software systems management, transportation management, and air mobility. A total of 102 masters' degree students graduated from AFIT/LA programs this fiscal year; they generated 95 theses and graduate research papers addressing issues in logistics processes, improved business practices, technology transfer, software calibration, international logistics, human resources management, operational analysis, airlift and air refueling operations, modeling, and simulation. A total of eight international students attended AFIT/LA, representing the countries of South Korea, the Republic of China, Australia, and Brazil.

A part of AFIT/LA's program of instruction, the air mobility program, which was developed at the request of AMC to provide Air Mobility Warfare students with a graduate degree in mobility management, graduated its second and third classes of 16 students in November of 1996 and 12 students in May of 1997. The fourth class of Air Mobility students entered the program early in June of 1997. The selection process for the fifth class is under way. The Air Mobility program continued to feature a number of innovations, including the concept of a dual campus operation (Fort Dix NJ and Wright-Patterson AFB), satellite-based distance education, and adjustable course length. Research projects undertaken by the Mobility students included assessment of cargo and refueling doctrine, more effective scheduling of aircraft, more effective management of airlift resources, greater cargo visibility, and more effective use of information resources.

Leadership of the school was provided by Dean Jan Muczyk and Associate Dean Colonel Neal Ely. In July of 1997 Colonel Ely was reassigned as Dean of AFIT's School of Systems and Logistics (LS), and the position of Associate Dean was taken by Lt Col Karen Currie. Dr. Muczyk, Col Ely, and Lt Col Currie continued to pursue a number of initiatives to strengthen AFIT/LA's customer base and student supply mechanisms. Important faculty research this year included refereed publications in the areas of logistics planning, graduate education, dispute resolution, operations and productions management, contract management, software development, and training. Several consulting efforts were conducted with a variety of Air Force agencies in the areas of logistics planning, communications, and using computer networking in problem-solving scenarios.

Faculty were involved in research activities across a wide range of Air Force and DoD agencies, including the Air Logistics Centers, the Armstrong and Wright Laboratories, the Aeronautical Systems Center, the Space and Missile Center, Headquarters USAF, various offices of the Secretary of the Air Force, Headquarters Air Force Material Command, and other DoD agencies. LA faculty were heavily involved in education efforts regarding the use of the Internet to advance research and logistics activities.

Program continuity and improvement were achieved in spite of the loss of a number of valued military and civilian faculty, including Lt Colonels Terry Pohlen and Jake Simons, Dr. Richard Taliaferro, Dr. David Christensen, Dr. Kim Campbell, and Dr. Dan Guide. New military arrivals included Majors James Burger and Paul Thurston, and Captains Daryl Hauck, Marv Arostegui, and Steve Swartz. Although overall faculty strength declined slightly, research productivity remained at a high level.

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4.1 DEPARTMENT SYMBOLS AND LOCATIONS

Graduate School of Logistics and Acquisition Management (LA), Building 641, 2950 P Street, Wright-Patterson AFB OH 45433-7765

| <u>Symbol</u> | <u>School Office/Department</u> | <u>Room</u> | <u>Phone, Extension/DSN No.</u> |
|---------------|---|-------------|---------------------------------|
| LA | Office of the Dean | 328 | (937) 255-7777, x3302 (DSN 785) |
| | Dr. Jan P. Muczyk, Dean Col Neal M. Ely, Associate Dean (reassigned, July 1997) Lt Col Karen Currie, Associate Dean (eff July 1997) | 328 | (937) 255-7777, x3300 (DSN 785) |
| LAA | Graduate Program Office | 316 | (937) 255-7777, x3308 (DSN 785) |
| | MSgt Jimmie Johnson Ms. Paula K. DeLuca, Resource Advisor | 316 | (937) 255-7777, x3306 (DSN 785) |
| LAC | Assistant Dean for Research and Consulting Dr. David K. Vaughan | 324 | (937) 255-7777, x3312 (DSN 785) |
| LAP | Assistant Dean for Programs Lt Col Karen W. Currie (reassigned July 1997) | 328 | (937) 255-7777, x3300 (DSN 785) |
| LAL | Department of Graduate Logistics Management Dr. Craig M. Brandt | 327 | (937) 255-7777, x3329 (DSN 785) |
| LAS | Department of Graduate Acquisition Management Dr. Roland D. Kankey | 302a | (937) 255-7777, x3382 (DSN 785) |

4.2 AREAS OF PROFESSIONAL EXPERTISE

Acquisition Management: Ware, Moore
Acquisition Reform: L'heureux, Fossum
Activity-Based Costing: Giuliano
Allocation Proposals: D'Angelo
Alternate Disputes Resolution: L'heureux
Application of Technology: Heminger, Morris
Acquisition Logistics: Currie, Scott
Acquisition Management: Scott, Moore
Air Force History: Vaughan
Aviation Maintenance Systems Management: Swartz
Budget Theory: D'Angelo
Business Policy: Muczyk, Adler
Buyer-Seller Relationships: L'heureux, Fossum, Moore
Capital Budgeting: D'Angelo
Commercial Business Practices: Fossum
Computer Graphics: Heminger, Morris
Computer Infrastructure Design: Heminger, Morris
Computer Networking: Heminger, Morris
Contract Management: Vickery
Contract Negotiation: Vickery, L'heureux
Contracting: Vickery, Fossum, L'heureux, Moore
Contractor Productivity/Quality Improvement: Vickery, Fossum, L'heureux
Cost Analysis: Kankey, Cunningham, Giuliano, Gill
Cost Estimating: Kankey, Giuliano, Ferens
Cost/Schedule Control Systems Criteria: Giuliano
Data Communications: Heminger, Morris
Database Applications: Heminger, Morris
Database Theory: Heminger, Morris
Decision Support Systems: Vickery, Thurston
Doctrine: Vaughan
Earned Value Methods: Giuliano
Econometrics: Gill
Economic Analysis: Cunningham, Gill
Electronic Commerce: Currie, Scott, Heminger
Employee Motivation and Turnover: Steel
Environmental Contracting: L'heureux
Environmental Economics: Gill
Ergonomics/Human Factors: Shane, Atkins
Ethics: Brandt, Vaughan, L'heureux
Experimental Design: Shane, Thurston
Expert Systems: Vickery, Heminger, Morris
Facilities Planning: Franza
Federal Financial Management Systems: D'Angelo
Financial Management: Caudle
Forecasting: Kankey, Ware, Moore
Foreign Military Sales: Brandt
Group Support Systems: Heminger, Morris
Heuristic Scheduling: Giuliano
Human Resources Management: Steel, Muczyk, Van Scotter, Shane, Atkins
Human-Computer Interaction: Morris
Human Factors Engineering: Shane
Industrial Engineering: Johnson
Information Management: Vickery
Information Resource Management: Heminger, Morris

International Armaments Cooperation: Brandt
International Commerce: Brandt, Cunningham
International Logistics: Brandt, Currie, Cunningham
Interorganizational Coordination: Adler
Inventory Management: Currie, Burke, Cunningham, Srivastava, Giuliano
Joint Replenishment: Giuliano
Just-in-Time Manufacturing: Cunningham, Srivastava
Leadership: Van Scotter, Shane, Atkins, Thurston
Learning Curves: Kankey, Giuliano, Ware
Labor Economics: Gill
Life Cycle Costing: Kankey
Logistics Financial Management: Moore
Logistics Management: Currie, Burke, Scott, Cunningham, Srivastava, Moore, Burger
Maintainability and Supportability: Srivastava
Management Information Systems: Scott, Heminger, Morris
Manufacturing Management: Fossum, Franza, Srivastava, Ware
Metaheuristics: Arostegui
Military History: Vaughan
Modeling: Johnson, Van Scotter, Moore, Burger, Swartz
Motivation: Van Scotter, Atkins, Thurston
Multiple-Criteria Decision Making: Vickery, Shane
National Resources: D'Angelo
National Security: Brandt
Operations/Production Management: Currie, Burke, Franza, Srivastava, Giuliano, Ware, Swartz
Operations Research: Vickery, Srivastava, Johnson
Organizational Behavior: Steel, Muczyk, Van Scotter, Shane, Atkins
Organizational Learning: Adler
Performance Measurement: Van Scotter, L'heureux, Muczyk, Shane, Atkins, Thurston
Personnel Management: Shane, Steel
Privatization: Cunningham
Program Evaluation: Shane
Project Management: Franza
Psychometric Theory: Shane, Atkins, Van Scotter
Public Policy Analysis: Brandt, Cunningham
Public Finance: Gill
Quality Management: Burke, Ware, Caudle
Reengineering: Heminger
Regression Modeling: Kankey, Giuliano, Cunningham, Shane
Reliability: Van Scotter, Shane
Reparable Inventory Management: Arostegui
Research Methods: Shane, Steel, Atkins, Van Scotter, Vaughan
Risk Analysis: Giuliano
Risk Communication: Campbell
Scheduling: Simons, Burke, Srivastava, Franza
Service Operations Management: Simons, Srivastava
Simulation: Johnson, Burke
Single-stage Production Systems: Giuliano
Social Cognition: Atkins
Software Management: Ferens
Software Measurement: Ferens, Scott
Software Product Assurance: Ferens
Software Size and Cost Estimation: Ferens, Scott
Statistical Design: Hauck
Statistical Process Monitoring: Hauck
Strategic Management: L'heureux, Scott, Muczyk
Strategic Planning: Heminger

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Supply Chain Management: Arostegui
Survey Design: Shane, Steel, Van Scotter, Atkins
Systems Management: Franza
Technical Communication: Stohrer, Vaughan
Technology in Education: Heminger, Morris
Technology Management: Franza, Vickery, Hauck
Technology Transfer: Franza, Brandt
Technological Development and Diffusion: Adler
Test and Survey Development: Shane, Atkins, Van Scotter, Steel
Theory of Constraints: Moore, Swartz
Third-Party Logistics: Cunningham
Time Series Analysis: Kankey, Giuliano
Training and Education: Van Scotter, Vaughan, Muczyk, Thurston
Transportation: Cunningham
Virtual Organizations: Vickery
Vocational Placement: Atkins
Warehousing: Moore
Warranty Contracts: Gill

4.3 FACULTY CREDENTIALS

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GRADUATE SCHOOL OF LOGISTICS AND ACQUISITION MANAGEMENT

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GRADUATE SCHOOL OF LOGISTICS AND ACQUISITION MANAGEMENT

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GRADUATE SCHOOL OF LOGISTICS AND ACQUISITION MANAGEMENT

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4.4 MASTERS' THESES BY PROGRAMS

ACQUISITION LOGISTICS

Capt P. E. Boley II, "Case Studies in the Analysis of the DoD Migration System Selection Process" (AFIT/GAL/LAL/97S-1). Sponsor: AMC/LGXI

1st Lt T. G. Burrows, "The Logistics of Mobilizing and Supplying the Union Army During the Initial Stages of the American Civil War" (AFIT/GAL/LAL/97S-2).

1st Lt P. L. Hartman, "International Armaments Cooperation in the Post-Cold War Era" (AFIT/GAL/LAL/97S-3). Sponsor: Deputy Under Secretary of Defense

1st Lt J. D. Havlicek, "Aerospace Ground Equipment's Impact on Aircraft Availability and Deployment" (AFIT/GAL/ENS/97S-4). Sponsor: OL-AL/HRGA

Capt R. R. Webb, "Reducing Cannon Plug Connector Pin Selection Time and Errors Through Enhanced Data Presentation Methods" (AFIT/GAL/LAL/97S-5). Sponsor: OL HSC AL/HRGO

Capt W. J. Wosilius, "Visitor Evaluation: An Exploratory Study for the USAF Museum" (AFIT/GAL/LAC/97S-6). Sponsor: USAF Museum Foundation

COST ANALYSIS

1st Lt W. A. Bernheisel, "Calibration and Validation of the COCOMO II 1997.0 Cost/Schedule Estimating Model to the Space and Missile Systems Center Database" (AFIT/GCA/LAS/97S-1). Sponsor: SMC/FMC

Capt J. R. Cole Jr. and 1Lt J. M. Fussell, "A Cost-Benefit Analysis of Earned Value Management System Criteria" (AFIT/GCA/LAS/97S-2). Sponsor: OUSD(A&T)API/PM

1st Lt C. S. Dalton, "An Examination of the Demographics and Career Progression of AFIT Cost Analysis Graduates" (AFIT/GCA/LAS/97S-3).

1st Lt W. R. Forster, "The Determinants of the Housing Choices of Military Families: Implications for Military Policy" (AFIT/GCA/LAS/97S-4).

M. W. Glenn, "Factors Affecting the Unit Cost of Weapon Systems" (AFIT/GCA/LAS/97S-5). Sponsor: USA SDC/MSTC

Capt D. B. Marzo, "Calibration and Validation of the SAGE Software Cost/Schedule Estimating System to United States Air Force Databases" (AFIT/GCA/LAS/97S-6). Sponsor: SMC/FMC

1st Lt T. C. Shrum, "Calibration and Validation of the Checkpoint Model to the Air Force Electronic Systems Center Software Database" (AFIT/GCA/LAS/97S-7). Sponsor: ESC/FMCT

Capt M. S. Sweitzer, "A Study of Historical Inflation Forecasts Used in the Department of Defense Future Years Defense Program" (AFIT/GCA/LAS/97S-8). Sponsor: SAF/FMCE

Capt T. S. Van Egeren, "Tracking Overhead ORTA Costs in Technology Transfer Activities" (AFIT/GCA/LAS/97S-9). Sponsor: AFRL/TTO

GRADUATE SCHOOL OF LOGISTICS AND ACQUISITION MANAGEMENT

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Maj C. Jen, "An Examination of Defense Acquisition Management in the Republic of China: Comparison with the United States" (AFIT/GCM/LAS/97J-1).

R. G. Buschagen, "An Investigation of Prioritizing Research Topics in Professional Communication" (AFIT/GCM/LAL/97S-1).

Capt R. B. Cole, "Meeting U.S. Defense Needs in Space: Effects of a Shrinking Defense Industrial Base on the Satellite Industry" (AFIT/GCM/LAS/97S-2). Sponsor: National Reconnaissance Office

Capt E. C. Duncan, "The Impact of the Federal Acquisition Reform Act of 1994 on Post-Award Protest Frequency" (AFIT/GCM/LAS/97S-3).

Capt M. P. Hamlin, "Career Development of Air Force Officers in Contracting: An Examination of Perception and Understanding" (AFIT/GCM/LAC/97S-4). Sponsor: SAF/AQC

Capt B. J. Hudgens, "The Effects of the New Commercial Marketplace Emphasis on United States Air Force Contract Negotiators" (AFIT/GCM/LAS/97S-6). Sponsor: DMSC

2d Lt B. A. Kelly, "A Qualitative Analysis of the Elements Required for the Successful Implementation of the 'Rolling Down-Select Strategy'" (AFIT/GCM/LAS/97S-7). Sponsor: AFMC/PKF

Capt A. J. Lomelin, "Determining Staffing Levels for Contingency Contract Administration Support" (AFIT/GCM/LAS/97S-9). Sponsor: DLA/DCMDI

Capt G. S. Mazul, "Formation of U.S. Security Assistance Policy: 1947-1959" (AFIT/GCM/LAL/97S-10).

Capt C. M. Ruefer, "The Influence of Foreign Culture on Air Force Contingency Contracting Operations" (AFIT/GCM/LAC/97S-11).

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D. R. Thomas, "An Examination of the Effects of the Federal Acquisition Streamlining Act of 1994 on the Post-Award Debriefing Process and Bid Protest Frequency" (AFIT/GCM/LSL/97S-13).

Capt J. P. Valley, "A Comparison of Contracts Involving the Privatization of Newark AFB and the Naval Air Warfare Center-Indianapolis" (AFIT/GCM/LAL/97S-14). Sponsor: AFMC/XPB

1st Lt J. L. Wright, "An Examination of the Past Performance Procedures Used in Air Force Materiel Command Source Selections" (AFIT/GCM/LAS/97S-15). Sponsor: AFMC/PKPA

INFORMATION RESOURCE MANAGEMENT

Capt H. L. Adams, "Air Force Media Use and Conformance With Media Richness Theory: Implications for E-Mail Use and Policy" (AFIT/GIR/LAR/96D-1). Sponsor: SAF/AAIQ

Maj G. G. Geison, "The New Logic of Hypertext: Electronic Documents, Literary Theory, and Air Force Publications" (AFIT/GIR/LAC/96D-2). Sponsor: ACC/IMP

Capt J. T. Hennes, "On-line Publications: Defining Requirements for User Acceptance" (AFIT/GIR/LAL/96D-3). Sponsor: USAF/SC

Capt F. W. Knaak III, "Automated Document Conversion: A Manager's Perspective" (AFIT/GIR/LAS/96D-4). Sponsor: USAF/SCMI

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Capt S. T. Miles, "Converting Publications in the Air Force to SGML: A Recommendation Based on Commercial Experience" (AFIT/GIR/LAR/96D-5). Sponsor: ACC/IMP

Flt Lt T. W. M. Plant, "Whose Information is it Anyway? An Argument for Information Stewardship" (AFIT/GIR/LAR/96D-6). Sponsor: AFMC/SCPI

Capt P. E. Quintero, "Internet Use Patterns, Acceptance Levels, and Policy Recommendations: An Information Technology Infusion Approach to the Internet and the United States Air Force" (AFIT/GIR/LAR/96D-7). Sponsor: AFMC/SCP

Capt S. B. Robertson, "Digital Rosetta Stone: A Conceptual Model for Maintaining Long-Term Access to Digital Documents" (AFIT/GIR/LAR/96D-8). Sponsor: SAF/AAIQ

Capt L. A. Rogers, "Exploring the Policy Issues of Electronic Freedom of Information Act Requests Through the Use of the Government Information Locator Service" (AFIT/GIR/LAR/96D-9). Sponsor: USAF/SCXR

Capt G. M. Schechtman, "Manipulating the OODA Loop: The Overlooked Role of Information Resource Management in Information Warfare" (AFIT/GIR/LAL/96D-10). Sponsor: SAF/AQIO

Capt D. W. Snoddy, "Records Analysis and Classification System: A Proof of Concept System for the Automated Classification of United States Air Force Records" (AFIT/GIR/LAR/96D-11). Sponsor: HQ USAF/SCXR

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Capt U. Bonasser, "Estimating KC-137 Aircraft Ownership Costs in the Brazilian Air Force" (AFIT/GLM/LAS/97J-1).

Maj P. R. Ruy, "Training Management Information System of the Defense Institute of Security Assistance Management: User Satisfaction as a Measure of Its Effectiveness" (AFIT/GLM/LAL/97J-2).

Maj W. Wu, "Supply Chain Management: A Case Study of Using EDI and Bar Code Information Technology" (AFIT/GLM/LAL/97J-3).

G. J. Dierker, "Core Values: A History of Values-Related Initiatives in the Air Force" (AFIT/GLM/LAL/97S-1). Sponsor: HQ USAF/REX

Capt J. H. Donoho, "Case Studies in Military Airlift" (AFIT/GLM/LAC/97S-2).

Capt E. G. Ellmyer and Capt W. J. Jang, "Foreign Military Sales Supply Support: Is There a Better Way?" (AFIT/GLM/LAL/97S-3).

Capt D. T. Kalosky and 1 Lt P. G. Walker, "Development of the Base Support Plan Process Model for Evaluation of Proposed Process Improvement Initiatives" (AFIT/GLM/LAL/97S-4). Sponsor: OL AL/HRGO

Capt J. A. Kitchens, "Economic Analysis for an F-22 Organic vs. Contractor Aircraft Battle Damage Repair Ownership Decision" (AFIT/GLM/LAL/97S-5). Sponsor: SM-ALC/LATB

Capt G. B. Tovrea, "Support Equipment Deployability: A Delphi Study to Determine the Transportability Characteristics of Aerospace Ground Equipment (AGE)" (AFIT/GLM/LAL/97S-6). Sponsor: AL/HRGA

CPT J. B. Upton, "Pharmaceutical Surge Requirements for the Prime Vendor Program-Europe in Support of MOOTW" (AFIT/GLM/LAL/97S-7). Sponsor: USAMRMC (Ft Detrick)

1st Lt T. T. Vo, "Exploratory Analysis of the Deployment Feasibility of United States Air Force Air Expeditionary Forces" (AFIT/GLM/LAL/97S-8).

GRADUATE SCHOOL OF LOGISTICS AND ACQUISITION MANAGEMENT

ADVANCED STUDIES IN AIR MOBILITY

(Note: The Air Mobility graduate program is designed specifically for personnel of the Air Mobility Command; students in the Air Mobility program write graduate research papers, not theses; the results of their papers are not included in the research summaries presented in Section 2 of this report.)

Maj J. L. Hannon, "Future of Detachment 1 at San Antonio Air Logistics Center" (AFIT/GMO/LAS/96N-1).
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Maj J. C. Herron, "Looking Toward the Future Air Navigation System: Will Free Flight Hamper Global Reach?" (AFIT/GMO/LAL/96N-2). Sponsor: AMWC/WCOA

Maj P. A. Ianuzzi, Jr., "Proposal for United States Air Force Air Refueling Operations Doctrine" (AFIT/GMO/LAL/96N-3). Sponsor: AFDC/XD

Capt R. A. Kee, "Bridging the Gulf Between Theater and Strategic Air Mobility" (AFIT/GMO/LAL/96N-4).
Sponsor: AMWC/WCOA

Maj T. R. Kettler, "Theory Z Management and the United States Air Force" (AFIT/GMO/LAL/96N-5).
Sponsor: AMWC/WCOA

Capt R. A. Klumpp, Jr., "Strategic Brigade Airdrop: Past. Present. Future?" (AFIT/GMO/LAL/96N-6).
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Maj C. A. Lude, "Specialized Undergraduate Pilot Training: Producing Better Trained Pilots for Air Mobility Command" (AFIT/GMO/LAL/96N-7). Sponsor: AMWC/WCOA

Maj M. A. Melville, "The Director of Mobility Forces and Command and Control of Airlift" (AFIT/GMO/LAL/96N-8). Sponsor: AMWC/WCOA

Maj K. W. Moncrief, "Tactical Air Refueling: Undocumented Past, Future Requirement" (AFIT/GMO/LAC/96N-9). Sponsor: AMWC/WCOA

Capt M. T. Morrison, "Estimating Airfield Capacity for AMC Operations" (AFIT/GMO/LAC/96N-10).
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Maj C. A. Post, "CRAF Incentives" (AFIT/GMO/LAL/96N-11). Sponsor: AMWC/WCOA

Capt D. C. Post, "Air Force Reserve Aerial Port Contingency Training" (AFIT/GMO/LAL/96N-12).
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Maj J. R. Stafford, "SSTO RLVs: More Global Reach? A Study of the Use of Single Stage to Orbit Reusable Launch Vehicles as Airlift Platforms" (AFIT/GMO/LAL/96N-13). Sponsor: AMWC/WCOA

Capt D. A. Wolford, "Improved Visibility Within the Air Force ITV System" (AFIT/GMO/LAL/96N-15).
Sponsor: AMWC/WCOA

Maj D. M. Young, "Data Inaccuracy in the Global Transportation Network" (AFIT/GMO/LAL/96N-16).
Sponsor: AMWC/WCOA

Capt S. Beaubien, "Rethinking Strategic Brigade Airdrop" (AFIT/GMO/LAC/97Y-1). Sponsor: AMC

Maj R. A. Cordell, "Should USTRANSCOM Own It All?" (AFIT/GMO/LAC/97Y-2). Sponsor: AMC

Capt D. S. Gulbransen, "Effective Use of Aircraft Simulation in Aircrew Training" (AFIT/GMO/LAC/97Y-3).
Sponsor: AMC

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Maj M. S. Hershman, "Employment of the C-17 in Support of National Objectives" (AFIT/GMO/LAL/97Y-4). Sponsor: AMC

Maj J. R. Howard, "An Analysis of the 57th Airlift Squadron Training Production" (AFIT/GMO/LAL/97Y-5). Sponsor: AMC

Maj D. J. Kochanski, "Command and Control of Theater Airlift" (AFIT/GMO/LAC/97Y-6). Sponsor: AMC

Maj F. M. Koennecke Jr., "C2IPS: A Model for the Future" (AFIT/GMO/LAS/97Y-7). Sponsor: AMC

Maj J. C. Miller, "Consolidating KC-10 CCTS Training at Travis Air Force Base" (AFIT/GMO/LAS/97Y-8). Sponsor: AMC

Maj T. F. Moore, "Product Team Maintenance: Systemic Constraints Impacting Implementation" (AFIT/GMO/LAS/97Y-9). Sponsor: AMC

Maj C. J. O'Dell, "An Operational Look at the Issues Involved in the Decision Between Military and Civilian Airlift Options" (AFIT/GMO/LAL/97Y-10). Sponsor: AMC

Maj J. A. Spaulding, "Depot Maintenance: Barriers to Privatization" (AFIT/GMO/LAL/97Y-11). Sponsor: AMC

Maj C. R. Valle, "Automated Cockpit Technologies: Implications for Air Mobility Command Aircrews" (AFIT/GMO/LAL/97Y-12). Sponsor: AMC/XOOT

SYSTEMS MANAGEMENT

Maj K. Liu, "The Highly-Automated Airplane: Its Impact on Aviation Safety and an Analysis of Training Philosophy" (AFIT/GSM/LAC/97J-1).

Lt Col T. Wang and Maj S. B. Shin, "The Roles of Offset Organizations in the Republic of Korea and the Republic of China" (AFIT/GSM/LAL/97J-2).

Capt M. J. Davis, "Relationship Between CRDA Elements and Benefits to the Government in Technology Transfer" (AFIT/GSM/LAS/97S-1). Sponsor: AFMC/TTO

Capt S. A. Dinart, "How the Presence of a Risk Ladder, Time Interval Comparison, and Smoking Comparison Affect Risk Perception" (AFIT/GSM/LAL/97S-2).

Capt T. S. Tingley, "The Effects of Extraneous Presentation Graphics on Decision Making" (AFIT/GSM/LAS/97S-3). Sponsor: AFOTEC/XRE

TRANSPORTATION MANAGEMENT

Capt W. S. Joo, "An Analysis of the Republic of Korea Army Pipeline System for Repairable Assets" (AFIT/GTM/LAL/97J-1).

Capt T. E. Condon and Capt K. A. Patterson, "A Comparison of the Military's Organic Movement and Commercial Express Carriers" (AFIT/GTM/LAL/97S-1). Sponsor: AFMC/LGTW

Capt D. H. Hintz Jr. and 1Lt J. P. Elliott, "Applying Cross-docking and Activity-Based Costing to Military Distribution Centers: A Proposed Framework" (AFIT/GTM/LAL/97S-3). Sponsor: WL/MTIM

1st Lt D. E. McClain, "Predicting Mishap Rates at Closing USAF Maintenance Depots" (AFIT/GTM/LAL/97S-5). Sponsor: SA-ALC/SE

GRADUATE SCHOOL OF LOGISTICS AND ACQUISITION MANAGEMENT

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Capt C. J. Omlor, "Cost Per Flying Hour of the C-141" (AFIT/GTM/LAL/97S-7).

Capt D. W. Overland, "Comparison of Effects of Change From 8 to 12 Hour Shifts on Air Force Aircraft Maintenance Workers" (AFIT/GTM/LAL/97S-8). Sponsor: 436th AGS

Capt C. M. Vickers, "A Comparison of Commercial Express and the Defense Transportation System in the Movement of Repairable Assets Within Western PACAF" (AFIT/GTM/LAL/97S-9). Sponsor: PACAF/LGT

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[* Denotes duplicate entry, multiple faculty authors.]

CURRIE, Lt Col KAREN W. (LA)

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4.7 SUBSTANTIAL CONSULTATIONS

ADLER, Maj TERRY R. (LAS)

Adler, Terry R., AWACS Program Teaming Strategy for Turkey and Korea. Sponsor: ASC/ESC. May 1997.

Adler, Terry R., ASC 2000 Leadership Program Consultant. Sponsor: ASC/CC. October 1996.

ATKINS, Lt Col STEPHEN G. (LAL)

Atkins, Stephen L., Relationship between Drawdown/Closure Activities and Safety Mishap Rates. Sponsor: HQ AFMC/SE. October 1996-August 1997.

BRANDT, CRAIG M. (LAL)

Brandt, Craig M., Improving Defense Logistics Agency Requisition Processing for Saudi F-15 Spares. Sponsor: DLA. February 1997.

Brandt, Craig M., Establishing an International Logistics Course. Sponsor: Instituto de Logistica da Aeronautica, Brazilian Air Force. October 1996.

BURKE, Maj CHRISTOPHER J. (LAL)

Burke, Christopher J. Maintenance Concepts and Reliability and Maintainability Issues. Sponsor: Royal Norwegian Air Force, Stavem, Norway. June 1997.

CHRISTENSEN, DAVID S. (LAS)

Christensen, David S., Review of A-76 Software Package. Sponsor: SAF/PER. December 1996.

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CURRIE, Lt Col KAREN W. (LA)

Currie, Karen W., Using the Internet for Research. Sponsor: AU/RCO. July, September 1997.

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Ferens, Daniel V., Software Contractor Usage. Sponsor: AFMC/Legal Office. March 1997.

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Fossum, Cindy L., Current Contracting Issues. Sponsor: ASC/HR. October 1996.

Fossum, Cindy L., Developing Source Selection Teams. Sponsor: AFMC/TTO. October 1996.

FRANZA, Maj RICK M. (LAS)

Franza, Rick M., Technology Transfer and Military Laboratory Research. Sponsor: Wright Laboratories, WPAFB OH. February-August 1997.

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Franza, Rick M., Strategic Marketing of Technologies, Estimating Technology Transfer Costs, Evaluating Financial Returns of Technology Transfer Projects. Sponsor: AFMC Technology Transfer Office, WPAFB OH. Apr-Sep 97.

Franza, Rick M., Panelist, Dayton Area Technology Transfer/Commercialization Seminar. Sponsor: Wright Laboratory, WPAFB OH. February 1997.

GILL, H. LEROY (LAS)

Gill, H. Leroy, Wrongful Injury and Economic Damage. Sponsor: WPAFB Legal Office. February 1997.

GIULIANO, Lt Col STEPHEN A. (LAS)

Giuliano, Stephen A., Acquisition Pipeline Simulation Model. Sponsor: HQ AFMC, WPAFB OH. Nov 96.

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Heminger, Alan R., Use of Information Technology. Sponsor: AFMC/CIO. September, 1997.

Heminger, Alan R., Use of BPR to Evaluate and Improve Office Procedures. Sponsor: AFMC/Audit Agency. September 1997.

Heminger, Alan R., Organizational Development Assessment. Sponsor: DOD/MSRC. August, 1997.

Heminger, Alan R., Core Planning Processes. Sponsor: AFMC/HQ, WPAFB OH. October 1996.

Heminger, Alan R., Accession Criteria for New Communications Officers. Sponsor: HQ USAF/SC, Pentagon. October 1996.

KANKEY, ROLAND D. (LAS)

Kankey, Roland D., Analysis of Information Requirements for Air Force Modernization and Planning. Sponsor: HQ AFMC/ST. February 1997.

Kankey, Roland D., Analysis of the City of Dayton's IS Strategic Plan. Sponsor: City Manager's Office, City of Dayton, January-February 1997.

MORRIS, Capt MICHAEL G. (LAS)

Morris, Michael G., Web Page Development Methodologies and Tools. Sponsor: HQ AFMC, WPAFB. October-December 1996.

STEEL, ROBERT P. (LAL)

Steel, Robert P. Constructing an organization-wide management skills inventory. Sponsor: AFMC/MSG, October 1996.

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Van Scotter, James R., Training Validation and Rater Standardization Projects. Sponsor: AETC/AU/OTS, Maxwell AFB AL. Jan-May 1997.

Van Scotter, James R., Whistle-blowing in the Workplace. Sponsor: ASC/HR/CC. June-September 1997.

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Vaughan, David K. Communications Processes: Model and Principles. Sponsor: ASC/PA. March-July 1997.

VICKERY, Maj CAISSON M. (LAS)

Vickery, Caisson M., Acquisition Benchmarking. Sponsor: National Reconnaissance Office. February 1997.

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ADLER, Maj TERRY R. (LAS)

Adler, Terry R., "An Empirical Test of Transaction Cost Theory: Validating Contract Typology?" Annual Conference of the American Academy of Management, Boston MA, 10-13 August 1997.

Adler, Terry R., "Generating Contract Requirements: Dimensions of Contract Incompleteness and Effectiveness," Annual Meeting of the American Society of Business and Behavioral Sciences, Las Vegas NV, 5 February 1997.

Adler, Terry R., "Three Vignettes of Leadership Styles: A Comparison Based on Leadership Theory," ASC 2000 Working Group, HQ ASC, WPAFB OH, 21 October 1996.

BRANDT, CRAIG M. (LAL)

Brandt, Craig M., and Paul Pidgeon, "Restructuring Defense Maintenance Depots: The Case of Privatization in Place at Newark AFB OH," Annual Meeting of the Society of Logistics Engineers, Orlando FL, 4 August 1997.

Brandt, Craig M., "Contemporary Logistics Techniques and Privatization: A Proposal for Allied Supply Support," 1997 World-Wide Logistics Symposium, WPAFB OH, 15 April 1997.

Brandt, Craig M., "International Logistics," Instituto de Logistica da Aeronautica, Sao Paulo, Brazil, October 1996.

Brandt, Craig M., "Islamic Spain," West Carrollton High School, Dayton OH, October 1996.

Brandt, Craig M., "Life in Saudi Arabia," Charles Latham Senior Citizens Center, Kettering OH, October 1996.

BURKE, Maj CHRISTOPHER J. (LAL)

Burke, Christopher J., "The Move Towards Quickness Versus Quantity in Repairable Item Inventory Systems," Annual Meeting of the Society of Logistics Engineers, Orlando FL, 4 August 1997.

Burke, Christopher J., "Quickness Versus Quantity: Transportation and Inventory Decisions in Repairable-Item Inventory Systems," Air Force Logistics Symposium, 14 April 1997.

CAMPBELL, KIM (LAL)

Campbell, Kim, "Directive Usage among Air Force Officers," Annual Meeting of the Modern Language Association, Washington DC, 28 December 1996.

CHRISTENSEN, DAVID S. (LAS)

Christensen, David S., "An Introduction to Activity-Based Costing," The College of New Jersey, NJ, March 1997.

Christensen, David S., and Tony Presutti, "Do Internal and External Auditors Seek the Same Individual for Employment?" Utah Valley State College, 1997.

Christensen, David S., and Robert Conley, "Some Empirical Evidence of the Non-Normality of Cost Variances on Defense Contracts," Fort Hays State University, Fort Hays KS, February 1997.

Christensen, David S., and James Gordon, "Does a Rubber Baseline Guarantee Cost Overruns on Defense Contracts?" 1997 Acquisition Research Symposium, Fort Belvoir VA, June 1997.

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Christensen, David S., and James Gordon, "Rubber Baselines and Defense Contract Cost Overruns," Annual Conference of the Society for Cost Estimating and Analysis, Denver CO, June 1997

CUNNINGHAM, WILLIAM A. (LAL)

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Currie, Karen W., "Finding Logistics Information on the Internet," Annual Conference of the Society of Logistics Engineers, Orlando FL, 6 August 1997.

Currie, Karen W., "Using the Internet for Research," Air War College, Air University, Maxwell AFB AL, 31 July 1997.

Currie, Karen W., "Challenges for 21st Century Logisticians," Society of Logistics Engineers San Antonio Chapter Awards Luncheon, San Antonio TX, 17 July 1997.

Currie, Karen W., "Finding Logistics Information on the Internet," Society of Logistics Engineers North Texas Chapters Workshop, Ft Worth TX, 13 June 1997.

Currie, Karen W., "Internet for Logisticians," Society of Logistics Engineers, European Workshop, Luxembourg, Belgium, 17-18 April 1997.

Currie, Karen W., "Internet for Logisticians," Society of Logistics Engineers, Scandinavian Chapter, Stockholm, Sweden, 21 April 1997.

Currie, Karen W., "Internet Resources for Logisticians," Council of Logistics Management, Western Michigan Roundtable Meeting, Grand Rapids MI, 11 March 1997.

Currie, Karen W., "Electronic Commerce and the Internet: Resources for Logisticians," Council of Logistics Management Roundtable Meeting, Memphis TN, 14 November 1996.

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Ely, Neal M., Jan P. Muczyk, and Roland D. Kankey, "Focused Graduate Education: An Invisible but Real Competitive Edge," 1997 World-Wide Logistics Symposium, WPAFB OH, 14 April 1997.

FERENS, DANIEL V. (LAS)

Ferens, Daniel V., "Issues in Software Support Cost Estimation," Annual DoD Cost Analysis Symposium, Williamsburg VA, 12 February 1997.

Ferens, Daniel V., "Software Estimation," ASC/YW, WPAFB OH, 20 November 1996.

Ferens, Daniel V., "Results of the Septuagint Study (Software Cost Model Calibration)," Space Systems Cost Analysis Group, Tyson's Corner VA, 22 October 1996.

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FOSSUM, Maj CINDY L. (LAS)

Fossum, Cindy L., "An Evaluation of 'Government Contracting Options: A Model and Application,' by Edward G. Keating," AFMC/PKP, WPAFB OH, 12 September 1997.

FRANZA, Maj RICHARD M. (LAS)

Franza, Richard M., "Military to Private Sector Technology Transfer: A Research Agenda," 1997 Portland International Conference on Management of Engineering and Technology, Portland OR, 27-31 July 1997.

Franza, Richard M., and Clinton J. Braun, "Identifying Tangible and Intangible Benefits of Air Force to Private Sector Technology Transfer," 1997 Conference of the Technology Transfer Society, Denver CO, 19-23 July 1997.

Franza, Richard M., "Overview of Air Force Institute of Technology Technology Transfer Research, 1994-1997," Meeting of the Department of Defense Integrated Planning Team, Monterey CA, 14 May 1997.

Franza, Richard M., "Military Technology Investment: Shelving vs. Transfer," Annual Meeting of the Institute for Operations Research and the Management Sciences (INFORMS), Atlanta GA, 5 November 1996.

Franza, Richard M., "AFIT 1996 Technology Transfer Theses Results," Wright Laboratory, WPAFB OH, 3 Oct 96.

GILL, H. LEROY (LAS)

Gill, H. Leroy, and Donald Haurin, "The Impact of Transaction Costs and the Expected Length of Stay on the Probability of Home Ownership," Annual Meeting of the Western Economic Association, Seattle WA, 6 July 1997.

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HEMINGER, ALAN R. (LAS)

Heminger, Alan R., "The World Wide Warehouse: Using the World Wide Web to Support USAF Needs," Annual Conference of the Association for Information Systems, Indianapolis IN, 15 August 1997.

JOHNSON, Maj ALAN W. (LAL)

Jacobson, S. H., A. W. Johnson, and K. A. Sullivan, "Generalized Hill Climbing Algorithms for Discrete Manufacturing Process Design Problems using Computer Simulation Models," International Conference on Modeling and Simulation, Istanbul, Turkey, 1-4 June 1997.

Jacobson, S. H., and A. W. Johnson, "A General Convergence Result for Hill Climbing Algorithms," INFORMS Applied Probability Conference, Boston MA, 2 July 1997.

Johnson, Alan W., "Generalized Hill Climbing Algorithms for Discrete Optimization Problems," Wright Laboratory Seminar, WPAFB OH, 5 February 1997.

KANKEY, ROLAND D. (LAS)

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Muczyk, Jan P., "A Drive for Excellence: Polish Creativity in the 20th Century," Festival of 20th Century Polish Composers, Youngstown State University, Youngstown OH, 11 April 1997.

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Vaughan, David K., "The Air Force Institute of Technology's Thesis Program and Dissemination of Results Through the Defense Technical Information Center (DTIC)," DTIC Conference on Electronic Transmission of Research Results, DTIC/DLA, Ft Belvoir VA, 23 July 1997.

Vaughan, David K., "Rudolph 'Shorty' Schroeder: The Air Service's Prototype Test Pilot," Test Pilot Association, Dayton Chapter, Fairborn OH, 18 July 1997.

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Vaughan, David K., "The War Poetry of James Dickey," 1997 Annual Popular Culture Conference, San Antonio TX, 27 March 1997.

Vaughan, David K., "Girl Fliers in a World of Guys: Three 1930s Girls' Juvenile Aviation Series," 1997 Annual Popular Culture Conference, San Antonio TX, 28 March 1997.

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Vaughan, David K., "Birdflight, 19C Poetry, and the Invention of the Airplane," Annual Meeting of the Society for Literature and Science, Atlanta GA, 13 October 1996.

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