

DO WE NEED ADVANCED DEGREES?

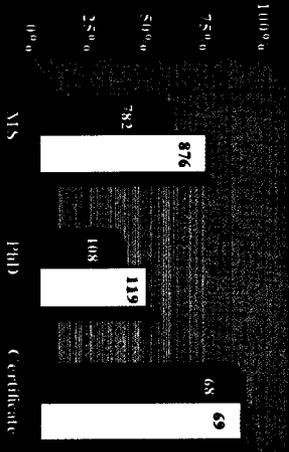
-ABSOLUTELY

A core competency for all Services
"Vector Blue" fundamentally changed us

Gave advanced degrees more meaning and impact

"Right education at the right time"
AFIT is the core driving Vector Blue
Graduate Ed is the core driving AFIT

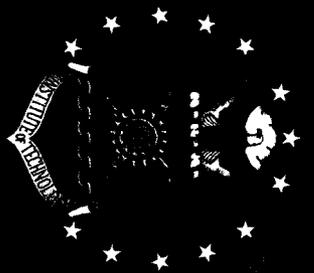
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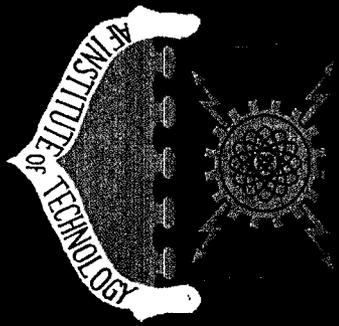
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AFIT

2950 HOBSON WAY
WPAFB OH 45433-7765
937-255-2321



www.afit.edu

For more information on
The opportunities available
at the Air Force Institute of
Technology contact:
AFIT/PA

2950 Hobson Way
WPAFB, OH 45433-7765
PH: 937-255-9354

AIR FORCE INSTITUTE OF TECHNOLOGY



HOBSON
provides innovative,
cut-edge research products
and continuing education,
research, and consultation to improve
Air Force and joint operations.

WHY AFIT?

Cost Effective

Civilian equivalent educational cost 50% more

Focused

Military oriented education and research
Unique science and engineering requirements

Responsive

One customer: The Department of Defense

WHY AFIT AT WRIGHT-PATTERSON?

WPAFB organizations use AFIT for their research

Half of these sponsored by WPAFB organizations

Air Force Research Laboratory (AFRL)

National Air and Space Intelligence Center (NASIC)

Aeronautical Systems Center (ASC)

AFIT uses AFRL professors to teach

Air Force Materiel Command a major consumer

Dayton Area Graduate Studies Institute

Leverages area universities and facilities

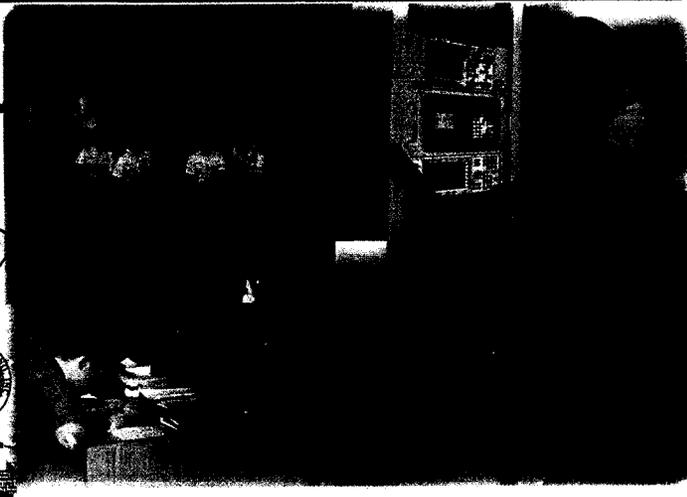
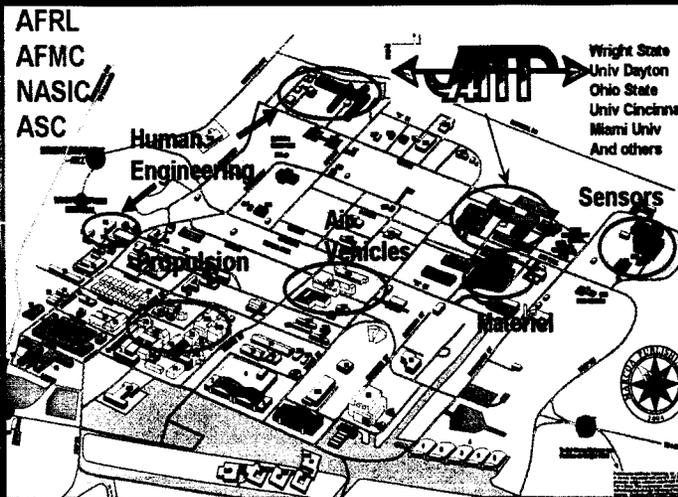
SHOULD WE CONSOLIDATE? YES... AND WE ALREADY HAVE

AFIT/NPS Alliance

Four oversight boards and eight working groups

Working continuously to improve our product

Aeronautical Engineering taught at AFIT
Acquisition, Meteorology taught at NPS



Vision

A premier team providing universally respected engineering and management education to sustain the technological supremacy of America's Aerospace Forces

Mission

Provide responsive, defense-focused graduate and continuing education, research, and consultation to improve Air Force and joint operational capability



**Brigadier General
Mark T. Matthews**

Brigadier General Mark T. Matthews is the Commandant, Air Force Institute of Technology, Wright-Patterson AFB OH. He entered the Air Force in 1977 with a commission from the U.S. Air Force Academy, earning a bachelor of science degree in engineering sciences as an honor graduate. A distinguished graduate of the U.S. Air Force F-15 Fighter Weapons School, General Matthews was a member of the initial cadre to stand-up F-15s in Alaska before attending graduate school and his assignment to Headquarters U.S. Air Force.

In other assignments, he served as a member of the Checkmate Division. General Matthews was one of the authors of Rapid Thunder, the initial planning effort that evolved into the Desert Storm air campaign against Iraq. He later served as operations officer and Commander of the 435th Fighter Squadron, training pilots of the Taiwan air force before attending Air War College in 1996. General Matthews was the 607th Air Operations Group Commander and the U.S. Director of Operations for the U.S. Air Force, South Korea. Prior to his current assignment, he was Commander, 48th Fighter Wing, Royal Air Force Lakenheath, England.

Learn more about AFIT leadership at
www.afit.edu/bios

AFIT's Centers of Excellence

The **Center for Systems Engineering (CSE)** builds on AFIT's twenty plus years of systems engineering expertise, resulting in a revised graduate degree program in Systems Engineering and a new graduate certificate program. CSE will develop and implement a program of implementation, establish baseline processes for the DoD, industry, and academia, will support development and fielding of education, Force acquisition and sustainment programs, supporting hands-on experience. In addition, CSE will perform research, provide consulting services, seminars, and workshops and publish findings and policy recommendations as appropriate. cse.afit.edu

The **Center for Directed Energy** continues AFIT's 30 plus years of experience educating high energy professionals through scientific and engineering research, graduate programs, and diverse consulting activities. It includes two directors of the AF laser program and a director of the Chemical Oxygen-Iodine laser program. Major research thrusts include chemical lasers, photonic devices, remote sensing, and high power microwave.

AFIT's **Center for Information Security Education and Research (CISER)** offers both graduate-level degrees and certificates in Information Assurance. CISER students and faculty are presently conducting research in many areas, including intrusion detection systems, computer and network forensics, multicast communications in dynamic satellite networks, non-cooperative data mining, diffused IR communications, wireless LAN interface characterization, and geolocation techniques for Internet users. en.afit.edu/issa

The **Center for MASINT Studies and Research (CMSR)** is focused on Air Force and DoD MASINT (Measurement and Signature Intelligence) scientific, technical, and operational activities through graduate research programs. CMSR benefits from strategic partnerships with world class intelligence and research organizations located at Wright-Patterson AFB and has truly become a national resource for educating a new generation of MASINT professionals. en.afit.edu/enp/cmsr/cmsr.html

WELCOME
TO THE
AIR FORCE
INSTITUTE
TECHNOLOGY



CENTER
FOR

Educating the world's
best Air Force!

The Air Force Institute of Technology (AFIT), located at Wright-Patterson AFB, Ohio, is the Air Force's premier institution of graduate and continuing education. A component of the Air Education & Training Command and Air University, AFIT is committed to providing defense-focused graduate and professional continuing education and research to sustain the technological supremacy of America's Air and Space Forces.

AFIT accomplishes this mission through three resident schools—the Graduate School of Engineering and Management, the School of Systems and Logistics, and the Civil Engineer and Services School—as well as through Civilian Institution Programs. Graduates are assigned to a wide range of positions in a rapidly changing environment, becoming both practicing engineers and broadly educated leaders. No matter what degree a student earns, AFIT's primary goal has been, and will continue to be, graduating mission-ready men and women who can positively impact the Air Force.

The Graduate School of Engineering & Management offers both master's and doctoral degrees in aeronautical engineering, applied mathematics, astronautical engineering, computer engineering,

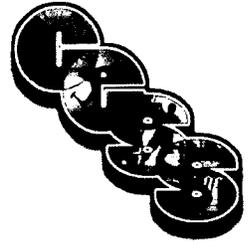


computer systems, electrical engineering, electro-optics, applied physics, nuclear engineering, materials science and engineering, and operations research. It also offers master's degrees in acquisition management, logistics management, information resource management, engineering and environmental management, military meteorology, space operations, systems engineering, and operational analysis.

As part of the graduate education process, the faculty and students involve themselves in a vigorous research program focused on areas of interest to the Air Force and the Department of Defense with every thesis directly impacting current military endeavors. AFIT research saves the Air Force and other DoD customers approximately \$25 million each year. en.afit.edu



The School of Systems and Logistics is the Air Force's sole provider of professional continuing education courses in the areas of acquisition, logistics, and software engineering. With over 50 courses, the School plans, develops, and conducts courses and programs to satisfy the technical management educational needs of logistics systems and acquisition customers from the Air Force, Department of Defense, and other federal agencies. Over 9,000 students receive education from the School of Systems and Logistics each year. ls.afit.edu



The Civil Engineer and Services School provides professional continuing education in engineering, environmental, and management subjects for military officers and civilians in the civil engineer and services career fields. The School offers over 50 courses delivered in residence and by on-site seminars, videotape, and satellite presentations, along with consultation services. More than 5,000 students worldwide receive education from the Civil Engineer and Services School annually. cess.afit.edu

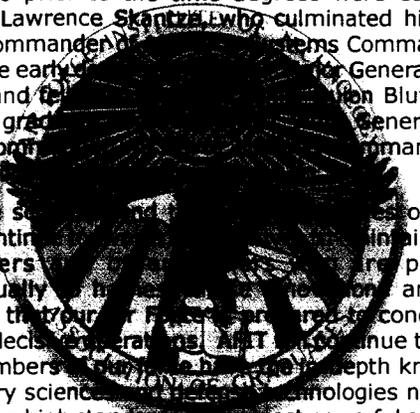


The Office of Civilian Institution Programs manages the graduate degree programs of more than 2,300 Air Force members in civilian universities, research centers, hospitals, and industrial organizations to meet the specific educational requirements of the Air Force. Additionally, these programs arrange professional continuing education courses for approximately 3,000 Air Force personnel annually.

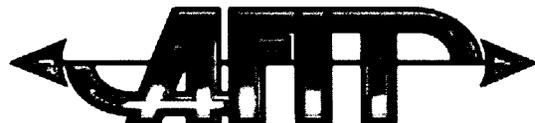
The effects of AFIT's educational programs are pervasive throughout the Air Force and Department of Defense. The Civilian Institution Programs continue to fulfill new missions, taking on new directions and satisfying new requirements as needed. ci.afit.edu

Distinguished Graduates

Some of the most accomplished engineers and scientists in Air Force history are AFIT alumni. Air Force pioneers General George Kenney, General Jimmy Doolittle, and General Bernard Schriever attended AFIT programs prior to the time degrees were conferred. General Lawrence Skantze, who culminated his career as the commander of the Air Education and Training Command, was one of the early AFIT graduates. General William Anders and General Robert M. Johnson Bluford also attained graduate degrees from AFIT. General Lester Lyles, Commander of the Air Education and Training Command, is an AFIT Civilian Institution Program graduate.



As the Service and Department of Defense of the Air Force continue to evolve, AFIT will continue to prepare a corps of officers and civilians who are intellectually and technically prepared and apply them so that our Air Force can continue to conduct and sustain decades of operations. AFIT will continue to ensure that members of our Air Force have the depth knowledge in military science and technologies needed to uphold the high standards of the most powerful aerospace force in the world. As the Air Force continues to excel in the challenges of the 21st Century, AFIT stands poised to lead the way in meeting the educational needs of our Air Force and Department of Defense. www.afit-aog.org



Responsive, poised, and ready to serve.

www.afit.edu

For additional information about AFIT, contact:
AFIT Public Affairs Office
2950 Hobson Way, Bldg 642
Wright-Patterson AFB OH 45433-7765

"How do I attend AFIT?"

Contact AFIT Admissions Registrar
en.afit.edu/Admissions



BRAC Commission AOA, USAF Input

Realignment Option 1: Privatize both NPS and AFIT

Pros:

- Eliminates the need for most of graduate school staff and facilities at both institutions
- Increases military-civilian interaction by placing students at civilian institutions
- Returns military members to the line
- Mitigates groupthink that might occur by restricting members to a military-led institute

Cons:

- Considerably more expensive
 - AFIT total cost per student in 1997 was \$39,184^[1]
 - Present graduate education total cost per student at AFIT is less
 - \$41.3 million for 1095 students
 - \$37,717 per student
 - Total cost (institutional support, research, and tuition) to accomplish AFIT graduate education and research at civilian institutions will be approximately \$57,434^[2] per student
 - Does not include any other costs such as increased housing allowances
 - Based on 1,095 students, this will require \$62.9 million
 - Therefore, it would actually cost \$21.6 million more in 2005 dollars alone to privatize AFIT graduate education programs (not counting other cost increases due to factors such as higher housing costs)
- Loss of ability to focus research on critical military-related activities and technologies
 - AFIT offers M.S. and Ph.D. programs in nuclear engineering with research focus in nuclear weapons and effects, serving both Army and Air Force students
 - AFIT provides nuclear fallout dose estimates and forensic analysis for dirty bombs
 - AFIT researches cyber-exploitation
 - Includes network attack and software attack
 - No real analogs at civilian universities due to security implications
- Loss of responsiveness to DoD in building programs and curricula
 - Military meteorology program built at immediate request of AF/XOW
 - Completely finished within 1 year
 - Staffed with faculty and serving students in that timeframe

^[1] Does not account for building depreciation or utilities

^[2] 1997 White Papers received from 10 civilian institutions reported an average cost of \$38,000 per student (does not include tuition costs) needed to provide facilities and staff required to replicate the defense focused research programs available at AFIT

- Inflated for 2005 baseline, this cost is approximately \$45,844 per student
- Average tuition cost for all CI degree programs in FY 2005 is \$11,590
- Together, this creates an estimated cost of \$57,434 to achieve equivalent training in a CI in 2005 dollars

- Chemical, Biological, Nuclear, and Radiological Explosives – tailored Nuclear Engineering program to meet needs of AF/XOS, Army, Defense Threat Reduction Agency, and AFTAC
- Measurement and Signature Intelligence program quickly stood-up
 - Supports scientific, technical, and operational exploitation of intelligence data
 - Graduates in demand by National Geospatial Agency (NGA), National Air and Space Intelligence Center (NASIC), civilian and other DoD intelligence organizations
- Created 14 Master’s degree programs tailored to the needs of field grade officers for Intermediate Development Education (IDE); completed within six months of request by Air Force.
- Information assurance program created to meet specific needs of NSA; developed within one year in response to DoD IO Road Map
- Loss of focus on military related issues in the class
 - Most classroom instruction at AFIT is defense-focused
 - 50% of AFIT’s faculty are active duty military members with real world military experience
 - In some instances (such as nuclear weapons effects), faculty expertise is gained through unique and specific experiences within DoD or DOE
- Loss of heritage opportunities and the ability to maintain and grow professional identity
 - Wright Brothers Lecture Series (WBLS)
 - Capstone event for the AFIT IDE class
 - Theme of “Heritage ~ Technology ~ Warfare” chosen to reflect on lessons of the past, gain exposure to thoughts on advancements in technology, and tie into the applications of the profession of arms
 - Commandant’s Lecture Series brings in distinguished speakers weekly to provide a warrior focus and enriched military professional development
 - AFIT is located close to Air Force Museum and birthplace of aviation
- Loss of flexibility to respond to the war fighter with a well-trained staff
 - Direct request from combatant commander for PhDs to support nation building efforts in Iraq
 - Military combat analyst provided combatant commander with invaluable insight into the hearts and minds of the Iraqi populace
 - Found opportunities to develop psychological operations applied to affect relationships between populace and insurgents
 - Five military faculty members and one civilian faculty member deployed to Iraq, Qatar, Afghanistan, and Saudi Arabia in last two years
 - Civilian analyst deployed to Afghanistan to develop an analytical tool to measure progress of military efforts; CJTF-180 CC: “this is exactly the type of product this command needs to explain the progress of our mission here”
 - Logistics Readiness Officer ran staff in charge of all aircraft maintenance and supply issues for the theater; provided CFACC and DCFACC with real-time updates on parts status for all CENTAF aircraft

- Combat analyst regularly participated in convoy movements on “Route Irish,” known as the most dangerous route in Iraq
- Loss of ability to provide rapid and responsive consultation from CONUS to field commanders
 - During OIF, faculty nuclear physicist provided reach-back support to commanders in the field that discovered possible nuclear materials
 - Bioenvironmental engineer addressed questions concerning water quality and water supply vulnerability during major combat phase of OIF
- Loss of control and expertise in education and technical training – handicaps vital aspect of Air Force mission
 - Difficulty in remaining flexible and responsive in support of changing defense-related environments
 - Extended periods of time required to develop new faculty members and reconstitute a graduate school
- Loss of synergy with Air Force Center for Systems Engineering (CSE), which provides direct linkage between academic teaching/theory and application/ policy
 - Experienced scientists and engineers serve as guest lecturers and speakers in AFIT graduate systems engineering (SE) courses; topic areas include Capability Development and Human Systems Integration
 - AFIT provides resident graduate certificate program in SE for part-time military and civilian students; valuable service for program office and laboratory personnel
- Centers of Excellence dissolved
 - AFIT’s Centers of Excellence engage faculty and students from multiple departments to tackle interdisciplinary research problems of importance to the military
 - Include programs in Systems Engineering, MASINT Studies and Research, Operational Analysis, Information Security Education and Research, and Directed Energy
 - New collaborations are established relatively easily due to the common, military-focused research interests of all
 - Recent example: High Energy Laser Joint Technology Office requested AFIT’s Center for Directed Energy to lead development of laser weapon engagement model
- Difficulty in providing proper military support to students at civilian institutions
 - AFROTC detachments are limited to 25 AFIT students per detachment due to manning constraints
 - Already have 4 detachments with more AFIT students in their area than they can support; student management in that case falls back to staff located at AFIT
 - Currently have nearly 200 AFIT students at locations without an AFROTC detachment – that number would likely grow.
 - No .mil internet access at civilian schools, which impacts access to military information and automated services
 - Supporting bases can be several hundred miles away (for example, Indiana State University is 175 miles from its supporting base, Scott AFB)

- Mission Support Squadrons at supporting bases do not get manning to support AFIT students
 - Base units cannot accommodate school class schedules; this is especially a problem for students in special programs with unique educational requirements
- Emergence of significant issues with health care and family support for students
 - AFIT resident students would lose access to WPAFB medical center, one of the largest medical facilities in the DoD; appropriate access to Tricare would suffer
 - Would lose WPAFB support services for military members and families
 - No base support readily available at many school locations
 - No military support staffs will be readily available to provide assistance to students or their families
- Loss of support to intelligence community, due to security issues
 - Plans for MASINT Journal, the nation's only technical research journal, will be terminated
 - Classified research planned for AFIT's new NRO-funded SCIF will be cancelled
 - High percentage of foreign graduate students at civilian institutes would impact the ability to support classified research
- Loss of responsiveness to executive and congressional taskings, especially in the space arena
- Irreversible, except at great cost – would take a generation to “fix”

Realignment Option 2: Create a DoD Center of Excellence at NPS (AFIT merges into Monterey and USAF non-resident oversight moves to Maxwell)

Pros:

- Cost savings with management and facilities consolidation
- Enhanced focus on joint services
- Desirable location

Cons:

- Dissociation of AFIT from its primary customers, including Air Force Research Laboratory (AFRL), Air Force Materiel Command (AFMC), Aeronautical Systems Center (ASC), and National Air and Space Intelligence Center (NASIC)
 - Proximity to primary customers enables robust collaboration by allowing convenient participation in student advising, attendance at seminars and defenses, and informal meetings
 - AFIT's leadership and participation in the science and engineering societies would not exist
 - Thirty adjunct faculty from WPAFB organizations would be unable to continue their current level of engagement with AFIT
 - In FY 2004, 72 of 154 technical theses and dissertations were sponsored by WPAFB organizations; 64 of 129 in FY03.
 - In FY 2005, more than 165 research projects (totaling approximately \$7.5 million) were accomplished through funding by local sponsors, including more than 120 projects (\$4.0 million) from neighboring AFRL
 - Example: enhanced laser pod imaging for time-sensitive targets
 - Example: automatic target recognition of uncooperative airborne targets
 - Example: explanation of how terrorists establish influence within clandestine networks – student received ACC nomination for analyst of the year
 - Example: PC tool to field-evaluate optical jamming, which is currently being fielded
- Loss of ability to precisely tailor courses to USAF needs
 - Nuclear Engineering program is focused on nuclear weapon effects
 - Includes design, proliferation, and non-proliferation issues
 - Includes nuclear weapon treaty surveillance
 - AFIT's Directed Energy effects and weapon systems design are dedicated to applications relevant to AF laser and electro-optics programs
 - Remote sensing courses and associated curricula incorporate classification of conventional bomb detonations to identify the source of the device, which is important to AF support for Homeland Defense and counter-terrorism
 - Systems Engineering certificate program tailored from the systems engineering degree program developed to meet the needs of organizations at Kirtland AFB, Los Angeles AFB, and WPAFB

- AFIT created technical sequence in the aeronautical engineering program, covering the dynamics of reentry vehicles
 - Requested by NASIC
 - Took only two months to establish
- Requirement for re-accreditation of all degree programs
- Requirement of entirely new management structure for JCS to manage and oversee joint advanced academic education
 - JCS has no resident expertise
 - Historically, funding support for jointly managed activity is problematic – no sole service advocates
- Loss of agile responsiveness due to increased size of institution
- Lack of robust Ph.D. programs (large number of AFIT faculty will not move)
 - AFIT has about 100 Ph.D. students (average over the last year)
 - In FY 2004, NPS graduated only 8 Ph.D. students
- Requirement for expensive military construction in Monterey area
- Restriction on future growth; little room to expand service and programs
- Reliance on difficult means for national transportation and access
- Reliance on significantly higher cost of living (versus low cost of living in Dayton, OH)
 - BAH at NPS is twice the Dayton rate for company grade officers
 - Equates to tens of millions of dollars per year
- Inadequate health care access
- Loss of expertise of organizations at WPAFB in our classroom
 - Approximately 30 adjunct faculty per year teach full courses or specific aspects of courses and around 45 individuals per year give seminar presentations
 - These individuals are experts in their fields, working for various organizations on WPAFB
- Loss of AFRL expertise; faculty will no longer be able to interface with research facilities
- Displacement of very large civilian workforce
 - AFIT contains 266 faculty and staff in the graduate school, plus a majority of institute support staff
 - Large number of faculty would not move from their established homes
- Movement of civilian institution program management and (potentially) Professional Continuing Education (PCE) to Maxwell – all of which is extremely costly to perform
- Difficulty with consolidating staffs into a common vision
- Groupthink (loss of diverse perspectives and dynamic interaction between AFIT and NPS)
- Loss of operational time – officers redirected away from the “line” for longer period of time for IDE program
 - NPS program takes 1.4 years (average) to award a degree
 - AFIT program takes 1.1 years (average) to award the same degree
- Loss of PCE synergy – a shared and collaborative faculty environment ensures consistency of curriculum
- Loss of Dayton Area Graduate Studies Institute (DAGSI)
 - Local confluence of major universities serves to support interaction with local graduate educational programs – an invaluable network for research and

collaboration with area experts, it allows for the efficient sharing of existing infrastructure

- For the academic year 2004-2005, DAGSI supported 25 graduate student scholarships for either M.S. or Ph.D. students and 7 scholarships with stipends for Ph.D. students

Realignment Option 3: Co-locate effort at AFIT (NPS merges into Wright-Patterson AFB and DLI remains in Monterey)

Pros:

- Cost savings with management and facilities consolidation
- Enhanced focus on joint services
- Great family environment
- Affordable locale
- Availability of diversity of graduate level educational resources (Wright State University, University of Dayton, The Ohio State University, etc.)
- Availability of office space to lease
 - Can surge student load without building, especially by working with local universities (for example, Wright State University is only about one mile away)
 - Currently, commercial office space is available at \$14 per square foot
- Opportunity for extensive expansion on Wright-Patterson AFB
- Placement of DoD graduate education closer to most DoD labs and key customers
 - Co-located with key AFRL labs
 - More closely located to other Air Force, Navy, Army, and DoD labs and customers
 - AFRL
 - Wright-Patterson AFB, OH
 - Eglin AFB, FL
 - Hanscom AFB, MA
 - AFOSR
 - Washington, D.C.
 - Arnold Engineering and Development Center, TN
 - AMC (Scott AFB, IL)
 - USSTRATCOM (Offutt AFB, NE)
 - USJFCOM (Norfolk, VA)
 - NSA, NSF, ONR, NRO, HQ AF, OSD, DTRA, and DAU (Washington, D.C.)
 - NRL labs
 - Pax River, VA
 - Chesapeake Bay, MD
 - NSWC
 - Dahlgren, VA
 - Carderock, MD
 - Crane, IN
 - Indian Head, MD
 - NAVAIR
 - Lakehurst, NJ
 - Orlando, FL
 - Cherry Point, NC
 - ARO (Durham, NC)

- TRADOC (Ft Leavenworth, KS)
 - ARL labs
 - Adelphi Lab Center, MD
 - Aberdeen Proving Ground, MD
 - NASA Langley RC, VA
 - NASA Glenn RC, OH
 - RTP, NC
 - Redstone Arsenal, AL
- Great supporting infrastructure and community
 - Health care and family support
 - WPAFB is one of largest bases in the world
 - WPAFB contains the second largest medical center in the Air Force
 - WPAFB contains 2,190 base housing units (631 for officers)
 - 316 units are currently unoccupied
 - Typically around 10% vacancy rate
 - 789 housing units will be replaced by 2006
- Outstanding facilities and opportunity for growth; room and facilities for expansion already exist or projected for immediate completion
 - Completed \$10 million MILCON renovation of Graduate Engineering building and Bane Auditorium
 - Plans for renovation over next 3 to 4 years
 - Another Graduate Engineering building
 - Twining Hall
 - Approved 50,000 square feet “New Academic Building” MILCON project
 - Being considered for FY 2006 Congressional insert
 - House marked at \$12.95 million
 - Proposed for FY 2010: 50,000 square feet MILCON addition to expand library and incorporate School of Systems and Logistics on AFIT campus
 - Proposed for FY 2012: MILCON project for new laboratory building to incorporate all labs and shops on WPAFB
- On-site relationship with Air Force Research Laboratory (AFRL), National Air and Space Intelligence Center (NASIC), Air Force Materiel Command (AFMC), Aeronautical Systems Center (ASC), and others
- Dayton Area Graduate Studies Institute (DAGSI)
 - Relationship with six universities (seven in the future)
 - Collaborative research efforts funded by the state of Ohio using AFRL topics
 - Course sharing as part of degree programs at all consortium institutions
 - Currently involving 16 military and DoD students at three local universities and AFIT with DAGSI providing a total tuition of \$48,940
 - Enhancement scholarships are available to send AFIT engineering students to University of Dayton and Wright State University for classes – approximately \$25,000 available annually
 - 16 non-DoD civilians at AFIT with a paid tuition of \$64,000 per quarter
 - 14 remaining scholarships and 4 scholarships with stipends to use for 2005-2006 academic year

Cons (difficult to assess due to lack of access to NPS information):

- Entirely new management structure for JCS to manage and oversee joint advanced academic education
 - No resident JCS expertise
 - Funding with no primary service advocate will be problematic
- Dissociation of NPS from established relationships in the local environment (for example, ocean research and international security studies)
- Loss of ability to precisely tailor courses for Naval Services customers
- Difficulty in consolidating staffs into a common vision
 - Especially arduous for combining different services
 - Inevitably disruptive for classes and learning process
- Difficulty in re-building, accrediting, and standing up structure to support array of diverse schools not found at AFIT
 - Business and Public Policy currently not offered at AFIT
 - International Graduate Studies currently not found at AFIT
- Inhibited responsiveness and flexibility due to increased size
- Groupthink (loss of diverse perspectives and dynamic interaction between AFIT and NPS)
- Loss of large amount of current expertise in faculty and staff who will not move

Realignment Option 4: Continue current vector

Pros:

- Allowance of AFIT and NPS to continue their mission and strategic plans uninterrupted
 - Board of Visitors, Air University, and the Board of Advisors Naval Post Graduate School work jointly to meet the direction of the December 2002 MOA between SECAF and SECNAV
 - This MOA established the framework by which the two institutions integrate similar programs
 - Maintained or strengthened existing programs that provide unique value to service members' education
 - Started new programs that serve immediate or long-term needs of the nation
 - AFIT and NPS continue the *AFIT/NPS Alliance* in accordance with an April 2004 MOU to ensure "high quality, timely graduate education" for the Department of Defense
 - Through this MOU, the schools chartered four oversight boards to monitor specific areas of collaboration
 - Additionally, the schools formed eight working groups to continuously monitor "best practices" for implementation
 - AFIT and NPS continue current initiatives focused on sharing and collaborating, while preserving specific service competencies where essential
 - AFIT and NPS will use Distance Learning to more efficiently educate students at both institutions by allowing students to take courses from each, such as the AFIT *Fundamentals of IR and MASINT Phenomenology* course this fall
 - Collaboration on changes to systems that impact scheduling, registration, and student management
 - Review of AFIT Environmental Engineering and Science (GES) program to meet Navy Civil Engineering Corps requirements
 - Provision of NPS assistance for AFIT on international program recruiting and funding
- Allowance of AFIT and NPS partnership to contribute to AF's advanced educational goals encased within "Vector Blue"
 - "Vector Blue" program fundamentally redefines the Air Force requirement for advanced academic degrees
 - Allows Air Force to provide our force the right education at the right time to meet AF and DoD needs
 - Immensely superior to old system of "fill the square" advanced degrees as a requisite for promotion
- Continuance of participation in the space arena, so as to aptly respond to AF needs
 - AFIT proactively participates on the space professional development IPT to understand evolving Air Force Space Command and NRO space educational requirements
 - Developed two new graduate educational programs to meet requirements

- Graduate in Aerospace and Information Operations (2001)
 - Space Systems Engineering (2003)
- Unparalleled persistence in revising and revamping courses to reflect global defense environment
 - Systems Engineering program completely updated in response to AF needs
 - First graduates produced within two years of tasking
- Sustained ability to provide rapid and responsive consultation from CONUS to field commanders
 - During Operation Iraqi Freedom (OIF), AFIT faculty nuclear physicist provide reach-back support to commanders in the field after they discovered possible nuclear materials
 - AFIT bioenvironmental engineer addressed questions concerning water quality and water supply vulnerability during major combat phase of OIF
- Continuance of overall current record of serving our customers well, as mentioned above in *Realignment Option 1: Privative both NPS and AFIT (Cons)*
 - AFIT is cost effective
 - AFIT total cost per student in 1997 was \$39,184^[1]
 - Present graduate education total cost per student at AFIT is less
 - \$41.3 million for 1095 students
 - \$37,717 per student
 - Total cost (institutional support, research, and tuition) to accomplish AFIT graduate education and research at civilian institutions will be approximately \$57,434^[2] per student
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 - AFIT researches cyber-exploitation
 - Includes network attack and software attack
 - No real analogs at civilian universities due to security implications
 - AFIT is responsive to DoD in building programs and curricula
 - Military meteorology program built at immediate request of AF/XOW
 - Completely finished within 1 year

^[1] Does not account for building depreciation or utilities

^[2] 1997 White Papers received from 10 civilian institutions reported an average cost of \$38,000 per student (does not include tuition costs) needed to provide facilities and staff required to replicate the defense focused research programs available at AFIT

- Inflated for 2005 baseline, this cost is approximately \$45,844 per student
- Average tuition cost for all CI degree programs in FY 2005 is \$11,590
- Together, this creates an estimated cost of \$57,434 to achieve equivalent training in a CI in 2005 dollars

- Staffed with faculty and serving students in that timeframe
 - Chemical, Biological, Nuclear, and Radiological Explosives – tailored Nuclear Engineering program to meet needs of AF/XOS, Army, Defense Threat Reduction Agency, and AFTAC
 - Measurement and Signature Intelligence program quickly stood-up
 - Supports scientific, technical, and operational exploitation of intelligence data
 - Graduates in demand by National Geospatial Agency (NGA), National Air and Space Intelligence Center (NASIC), civilian and other DoD intelligence organizations
 - Created 14 Master’s degree programs tailored to the needs of field grade officers for Intermediate Development Education (IDE); completed within six months of request by Air Force.
 - Information assurance program created to meet specific needs of NSA; developed within one year in response to DoD IO Road Map
- AFIT focuses on military related issues in the class
 - Most classroom instruction at AFIT is defense-focused
 - 50% of AFIT’s faculty are active duty military members with real world military experience
 - In some instances (such as nuclear weapons effects), faculty expertise is gained through unique and specific experiences within DoD or DOE
- AFIT maintains and grows professional identity
 - Wright Brothers Lecture Series (WBLS)
 - Capstone event for the AFIT IDE class
 - Theme of “Heritage ~ Technology ~ Warfare” chosen to reflect on lessons of the past, gain exposure to thoughts on advancements in technology, and tie into the applications of the profession of arms
 - Commandant’s Lecture Series brings in distinguished speakers weekly to provide a warrior focus and enriched military professional development
 - AFIT is located close to Air Force Museum and birthplace of aviation
- AFIT is flexible in its response to the war fighter with a well-trained staff
 - Direct request from combatant commander for PhDs to support nation building efforts in Iraq
 - Military combat analyst provided combatant commander with invaluable insight into the hearts and minds of the Iraqi populace
 - Found opportunities to develop psychological operations applied to affect relationships between populace and insurgents
 - Five military faculty members and one civilian faculty member deployed to Iraq, Qatar, Afghanistan, and Saudi Arabia in last two years
 - Civilian analyst deployed to Afghanistan to develop an analytical tool to measure progress of military efforts; CJTF-180 CC: “this is exactly the type of product this command needs to explain the progress of our mission here”
 - Logistics Readiness Officer ran staff in charge of all aircraft maintenance and supply issues for the theater; provided CFACC

- and DCFACC with real-time updates on parts status for all CENTAF aircraft
 - Combat analyst regularly participated in convoy movements on “Route Irish,” known as the most dangerous route in Iraq
- AFIT provides rapid and responsive consultation from CONUS to field commanders
 - During OIF, faculty nuclear physicist provided reach-back support to commanders in the field that discovered possible nuclear materials
 - Bioenvironmental engineer addressed questions concerning water quality and water supply vulnerability during major combat phase of OIF
- AFIT maintains control and expertise in education and technical training, which is a vital aspect of Air Force mission
- AFIT synergizes with Air Force Center for Systems Engineering (CSE), which provides direct linkage between academic teaching/theory and application/ policy
 - Experienced scientists and engineers serve as guest lecturers and speakers in AFIT graduate systems engineering (SE) courses; topic areas include Capability Development and Human Systems Integration
 - AFIT provides resident graduate certificate program in SE for part-time military and civilian students; valuable service for program office and laboratory personnel
- AFIT maintains Centers of Excellence, which are continually evolving
 - AFIT’s Centers of Excellence engage faculty and students from multiple departments to tackle interdisciplinary research problems of importance to the military
 - Include programs in Systems Engineering, MASINT Studies and Research, Operational Analysis, Information Security Education and Research, and Directed Energy
 - New collaborations are established relatively easily due to the common, military-focused research interests of all
 - Recent example: High Energy Laser Joint Technology Office requested AFIT’s Center for Directed Energy to lead development of laser weapon engagement model
- AFIT provides proper military support to students at civilian institutions
- AFIT is located adjacent to facilities that provide tremendous health care and family support for students
- AFIT’s security clearances allow students and faculty to maintain support to intelligence community
 - Plans for MASINT Journal, the nation’s only technical research journal
 - Classified research planned for AFIT’s new NRO-funded SCIF

Cons:

- Support of two staffs at AFIT and NPS
 - However, relative numbers are small
 - Even with merging, would require increase in resident staff to support
- Unused capacity at Monterey

- Still, would require renovation to meet needs of both schools
 - New construction also required to handle the merger
- Maintained high O&M costs at Monterey
- Lost opportunity cost of selling land