

# ***DSB Newsletter***

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May 2002

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Mr. Vince Vitto, Vice Chairman

Dr. William Schneider, Jr., Chairman

John V. Ello, Executive Director

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## ***Chairman's Corner***

With the 2002 Summer Study Program now well underway, I want to express my thanks and appreciation once again to the co-chairs of the following two important initiatives:

### **Missile Defense:**

Co-Chairs: Gen Larry Welch, USAF (Ret) and Dr. Bill Graham

### **Special Operations and Joint Forces in Support of Countering Terrorism:**

Co-Chairs: Dr. Ted Gold and Mr. Don Latham

In light of the formidable terrorist challenges that the DoD continues to face, I can think of no more timely and appropriate efforts for the Board to undertake than these two critical Summer Study initiatives. Again, my thanks to the co-chairs as well as the many Board members and consultants who are participating in these timely studies.

My thanks as well to Craig Fields who has agreed to chair the 2002 Fubini Award Selection Committee along with Bob Nesbit, Mike Carns, and Bill Howard. All of us will be looking forward to the results of their deliberations later this summer.

Finally, a special welcome to the following new Defense Science Board members: Art Money, Sam Adcock and Michael Bayer. We look forward to working closely with all of them in the challenging days that lie ahead.

*Dr. William Schneider, Jr.*

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## ***DSB MEETING DATES FOR 2002***

- **Spring Quarterly** May 15-16, 2002
- **Summer Study Conclusion** August 5-16, 2002
- **Fall Quarterly Meeting** October 23-24, 2002

## DSB Secretariat Staff

**Mr. John V. Ello**, Executive Director  
**Ms. Brenda Leckey**, Executive Officer  
**Ms. Patricia A. Shirley**, Executive Assistant  
**CDR Brian Hughes**, Navy Military Assistant  
**LTC Carla Kendrick**, Army Military Assistant  
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### Membership

The Board continues to actively solicit suggestions for highly qualified scientific and technical candidate members, with special emphasis on women and minority candidates. Prior Task Force participation offers an individual, OSD, and the Board an opportunity to determine a person's interest and suitability to Board activities and is a desirable prerequisite to membership on the Board. An overall roster of current Board members is included in this newsletter.

### Task Force Status

- **2002 Summer Study: Missile Defense** (Co-Chairs: Gen Larry Welch & Dr William Graham) The study, co-sponsored by USD(AT&L) and MDA, will report on five areas: counter-countermeasures; boost phase technology; battle management and command, control, and communications; international cooperation; and the evolution of ballistic missile threats. (LtCol Basl)
- **2002 Summer Study: Special Operations and Joint Forces in Support of Countering Terrorism** (Co-Chairs: Dr Ted Gold and Mr Don Latham) The study, co-sponsored by USD(AT&L), JFCOM and S&TS, will address how the Department of Defense can strengthen the military operational capability of its special operations forces and other joint forces against potential terrorist threats and other asymmetric threats. (CDR Hughes)
- **2001 Summer Study: Defense S&T** (Co-chairs: Mr. Larry Lynn & Dr. Anita Jones) The study co-sponsored by USD(AT&L) and

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DUSD(S&T) addressed issues involved to assure the US continues to gain access to and develop technology from which to gain military advantage. **The final report is in security review.** (LtCol Basl)

- **Chemical Warfare Defense** (Co-chairs: Dr. George Whitesides & Dr. Regina Dugan) This study, co-sponsored by USD(AT&L) and DARPA, is assessing the possibility of controlling the risk and consequences of a CW attack to acceptable levels within the next five years. The Task Force is drafting a final report. (LTC Kendrick)
- **E-Commerce** (Co-chairs: Dr. Ron Kerber & Dr. Mike Frankel) This study, co-sponsored by USD(AT&L) and Director of Defense Procurement, is reviewing the DoD's current implementation status of e-commerce tools. Appropriate recommendations will be made to enhance this opportunity for cost reduction, capital and manpower efficiency. The Task Force has drafted a final report. (LTC Kendrick)
- **Training for Future Conflicts** (Co-chairs: Dr. Joe Braddock & Dr. Ralph Chatham) This study, co-sponsored by USD(AT&L) and Director for Readiness and Training in OUSD(P&R), is a follow-on to the Jan 2001 Training Superiority & Training Surprise report. The Task Force will identify and characterize the education and training demanded by JV 2020 which are markedly different from what is being done today. Operating under a revised TOR with added emphasis on joint and interoperability training, the Task Force should produce a report in July 2002. (LtCol Basl)

- **Operation Enduring Freedom Lessons Learned** (Chair: Gen James McCarthy) This study, co-sponsored by USD(AT&L), VCJS & CENTCOM, is examining current activities of Operation Enduring Freedom to determine both near and long-term technical & operational considerations that could be used to improve this operation and future campaigns initiated in the War Against Terrorism. **The Final Report is in draft.** (LTC Kendrick)
- **Aircraft Carriers of the Future** (Chairman: Dr. Bill Howard, Vice Chairman: ADM Don Pilling, USN (Ret)) This study, co-sponsored by USD(AT&L) and Director, Strategic & Tactical Systems concentrated on the increased need to fulfill the presence and warfighting mission that aircraft carriers perform. The carrier battle group has been the mainstay of our combat-credible forward presence and the Task Force examined its applicability and potential for transformation in the future. **The final report is in Security Review.**(CDR Hughes)
- **Discriminant Use of Force.** (Co-Chairs: Dr Joshua Lederberg & Dr Ted Gold) This study, co-sponsored by USD(AT&L) and S&TS, is conducting a comprehensive study of the ends and means of precision compellence, of the nuanced use of force, in concert with coalition partners, to achieve political, economic, etc changes in countries affecting US interests. The Task Force is in progress. (LtCol Basl)
- **Defense Against Terrorists' Use of Biological Weapons** (Co-Chairs: Dr Skalka & Mr Larry Lynn) This study, co-sponsored by DARPA and DTRA, is assessing the scope of activities conducted by the DoD to ensure its ability to respond to an attack of the US homeland by terrorists using biological weapons. The Task Force is in progress. (CDR Hughes)
- **Intelligence in Support of the War Against Terrorism** (Co-Chairs: Dr Joe Markowitz and ADM Bill Studeman) **This study, co-sponsored by USD(AT&L), ASD(C3I), and DCI will identify capabilities, technologies and approaches for strengthening intelligence in support of the war against terrorism.** (CDR Hughes)
- **Defense against Unconventional Use of Nuclear Weapons Against the U.S.** (Co-Chairs: Dr William Graham and Dr Richard Wagner) **This study, co-sponsored by USD(AT&L) and the Assistant to the Secretary of Defense (Nuclear and Chemical and Biological Defense Programs) (ATSD(NCB)), will assess the adequacy of the U.S. ability to detect, identify, respond, and prevent unconventional nuclear attacks by terrorist or sub-national entities.** (LTC Kendrick)
- **Wideband RF Systems** (Chairman: Dr Gary Minden) **This study, co-sponsored by USD(AT&L) and ASD(C3I) will review and advise on key aspects of the policy and technology issues associated with the military applications of Wideband RF systems.** (LtCol Basl)
- **Role and Status of DoD Red Teaming Activities** (Co-Chairs: Dr Ted Gold and Dr Bob Hermann) **This study, co-sponsored by USD(AT&L) and the Director, Strategic and Tactical Systems (S&TS), will review the role and status of Red Teaming in the DoD and recommend ways to make it a more effective tool.** (LTC Kendrick)

**No DSB Reports have been published since Feb 2002**

## Army Science Board (ASB)

**Dr. Joe Braddock – Chairman**

**COL Kevin M. Dietrick - Executive Secretary**

**MAJ Bob Grier – Executive Officer**

### **FY02 Overarching Study**

**Ensuring the Financial Viability of the Objective Force** (Co-chaired by Mr. George Singley III, GEN John Vessey, USA (Ret), and LTG Max Noah, USA (Ret)). This study is examining all aspects of currently projected Operations and Sustainment (O&S) costs relating to existing and yet to be fielded components of the force. The study will identify critical O&S activities and related cost drivers, examine methods to leverage commercial practices, and suggest approaches to improve training and reduce the associated time and costs.

The Study is organized into seven panels:  
Operations, Training and Education (Co-chaired by Mr. Neale Cosby and GEN Paul Gorman, USA (Ret))

Logistics (Co-chaired by Mr. Chuck Vehlow, GEN Lee Salomon, USA (Ret), and VADM Bill Hancock, USN (Ret))

Infrastructure ((Co-chaired by Mr. Rich Gronda, Mr. Bill Hansen, and Mr. Charlie Nemfakos)

Human Resources (Co-chaired by Mr. Kim Wincup, BG Jim Ralph, USA (Ret), and MG Fred Lawson USA (Ret))

Innovation (Co-chaired by Mr. Dennis Carlson and GEN Donn Starry, USA (Ret))

Acquisition and Technology (Co-chaired by Dr. Jim Tegnalia, Dr. Larry Delaney, and Mr. Srinivasan Rajagopal).

Integration and Analysis (Co-chaired by Dr. Seth Bonder and Dr. Bob Douglas)

The Study will report out in a briefing to the Army Leadership and a Joint audience on 25 July 2001 at the Beckman Center in Irvine, California.

### **Special Studies**

- **Aviation Study.** (Co-chaired by Mr. Edward Brady and Mr. Ira Kuhn) This study will examine possible roles and missions for both manned and unmanned aerial vehicles in the Objective Force. Sub topics include arming unmanned systems, teaming manned and unmanned systems, applications for unmanned systems in combat support and service support roles, and air-to-air combat applications.
- **Robotics Study.** (Chaired by Dr. Prasanna Mulgaonkar) This study is nearly completed. It examines autonomous systems and technologies with potential applications within the Objective Force. We are exploring the challenges of commanding and controlling (man-machine interfaces) robotic devices, robotic technologies and capabilities projected for the 2015-2020 timeframe and identifying apparent voids in the same. The Red Team review of the panel's findings and recommendations will occur in early June.

Dr. William E. Howard, Mr. Ed Brady, and Dr. Stuart Starr continue to assist the Air Force Scientific Advisory Board on their Summer Study, *Predictive Battlespace Awareness*.

Mr. Gilbert Herrera, Mr. Frank Kendall, Dr. Irene Peden, Dr. Edward Reedy and Dr. Michael Wartell are supporting a joint study, *Science and Technology Community in Crisis Panel*, headed by the Naval Research Advisory Committee.

For more information on ASB studies and terms of reference visit:

[http://www.saalt.army.mil/SARD-ASB/A-study\\_table.htm](http://www.saalt.army.mil/SARD-ASB/A-study_table.htm)

## Naval Research Advisory Committee (NRAC)

**Ms. Katherine C. Hegmann - Chair**  
**CAPT Dennis L. Ryan, III USN (Ret.) - Program Director**

The NRAC is initiating this year's studies as well as completing two studies already in progress. The new study topics were recently selected and are listed below. Administrative actions for the change in NRAC Chair and Vice-Chair as reported in the last newsletter are still in progress.

**Science and Technology (S&T) Community in Crisis** This joint study with the Army Science Board and the Air Force Scientific Advisory Board, has completed. The final brief is being scheduled for presentation to the Assistant Secretary of the Navy (Research, Development and Acquisition) (ASN(RD&A)). The terms of reference for the study are:

1. Consider what the role(s) of the DoD labs should be in the 21<sup>st</sup> Century. Focus will be on the components devoted primarily to performing Science and Technology (S&T) work in-house. Identify the differences that do or should exist between S&T-oriented research labs and technical centers performing mostly acquisition support, in-service engineering, and higher-category R&D work.
2. Identify the desired characteristics of a world-class S&T laboratory in terms of professional staff, infrastructure, budgeting process, support services, etc.
3. Review the most relevant and important past studies of the labs to assess the current relevance of their primary recommendations.
  - a. Assess the benefits of those that were implemented and the continued applicability of those not adopted.
  - b. Prioritize those that promise the greatest potential for attracting and retaining a world-class scientific and engineering staff.
  - c. Identify possible reasons for past interaction, and recommend approaches to improve the opportunities for favorable action.

4. Assess the implementation status and impact of recent legislative initiatives directed to improving the DoD labs.
5. Assuming that future roles for these organizations can be identified, recommend both near-term steps and a long-term strategy for ensuring the excellence of the Service S&T laboratory system for the next 25 years. As a minimum, address the following areas:
  - a. Scientist and Engineer recruitment, reward and retention;
  - b. Lab facilities, equipment and infrastructure;
  - c. Support services quality and control;
  - d. Identify any Service-unique approaches.

**Aging Aircraft** Sponsored by the Commander, Naval Air Systems Command, this study's terms of reference were:

1. Identify the current state of need of legacy Naval Air Systems for inspection, repair and overhaul due to aging; identify known mitigation opportunities.
2. Link the needs and mitigation opportunities to Science and Technology Objectives for Platforms, Subsystems and Processes in the current Naval Technology Plan.
3. Provide recommendations for technology transition across the board, Naval Technology Planning, and product / process technology insertion opportunities for the future. The panel has met and the final brief is being scheduled for presentation to the ASN(RD&A).

The new study topics for this year include:

- 1. Technology for Base Security**
- 2. Enterprise Resource Planning**
- 3. The Role of Unmanned Vehicles**
- 4. Navy Utilization of Space.**

The terms of reference for each study are in the process of final approval.

For more information on NRAC activities visit <http://nrac.onr.navy.mil/webspace>

## **Air Force Scientific Advisory Board (SAB)**

**Dr. Robert W. Selden – Chairman**  
**Dr. Ronald P. Fuchs – Vice Chairman**  
**Lt Gen Steven B. Plummer- Military Director**  
**Col Marian F. Alexander – Executive Director**

### **Spring Board 2002**

The SAB held its annual Spring General Board Meeting 15-17 April 2002 at Hickam AFB. Spring General Board Meetings are normally held at an operational Air Force location that has relevance to the SAB's current studies. The purpose for this is twofold: first, to broaden the SAB members' currency with Air Force roles and missions; and second, to complement the data collection phase of ongoing study efforts to integrate a theater or command focus.

The Spring General Board Meeting at Hickam afforded members the excellent opportunity to visit both the unified command (PACOM) and a major regional command of the Air Force (PACAF). The SAB met with Deputy Commander in Chief and Chief of Staff, U.S. Pacific Command, Lt General Thomas Case, and with Vice Commander, Pacific Air Forces, Lt General Steven R. Polk. Briefers presented topics including CINC 21 (PACOM's project to increase the quality and speed of US/coalition command decision making during multiple simultaneous crises), Joint Mission Force, Time Critical Counter Targeting, the 7th Air Force Perspective, PACAF Air Intelligence Squadron (PAIS), PACAF Operational Support Center (POSC), Air Operations Center (AOC), and the PACOM Command Building at Camp H. M. Smith.

Two of the on-going FY02 studies, the Predictive Battlespace Awareness to Improve Military Effectiveness (PBA) study (chaired by Maj General George B. Harrison, USAF, Retired) and the Instantaneous Attack of Mobile and Time Critical Targets Deep in Enemy Territory (TCT) study (chaired by Mr. Theodore W. J. Wong), took advantage of the availability of PACOM and PACAF briefers by holding two days of study panel meetings and briefings. Additional study and research occurred with the Joint Intelligence

Center Pacific (JICPAC), synthesizing the theater's mission capabilities into the current studies.

### **Summer Session 2002**

This year's annual Summer Session will be 17-28 June in Irvine, CA. During these two weeks, participants in the PBA study, the TCT study, and the Task Force on the Threat of Asymmetric Attack (chaired by VADM David E. Frost, USN, Retired) will devote themselves to finalizing their reports and outbriefs to the Secretary of the Air Force, Dr. James G. Roche, and to the Chief of Staff of the U.S. Air Force, General John P. Jumper. The Summer Session concludes with outbriefs from the PBA and TCT studies and the Asymmetric Attack Task Force.

### **Ongoing Review Panels and Projects**

**Review of Air Force S&T Efforts** (chaired by Mr. Jeffrey Grant) was briefed to AFRL/CC Maj General Paul Nielsen on 28 February; discussions of possible improvements in the S&T review process followed the briefings in the pursuit of efficiencies and excellence. The S&T Review Chair is scheduled to brief AFMC/CC Gen Lester L. Lyles on 20 May, and to brief the Chief and Secretary in July. Next fall's S&T Reviews will be chaired by Prof Dan Hastings.

### **Status of Publication of Reports**

Final edits are being made on the report of the FY01 study Sensor Technology for Difficult Targets, chaired by Dr. Antonio F. Pensa. The report will then be submitted through the clearance process for public release.

Due to high demand, the SAB has ordered a second printing of the final report from the Availability and Survivability of Militarily Relevant Commercial Space Systems study, chaired by Dr. Daniel E. Hastings.

Work continues on another FY01 study report, Migration of Databases for Command and Control, chaired by Professor James A. Hendler.

All FY01 and FY02 outbriefs and reports are available on the Scientific Advisory Board website under the Archives button.

For information on AF/SB studies and terms of reference, visit <http://www.sab.hq.af.mil/>. POC for any questions regarding the AF/SB portion of this newsletter is Mr. Andrew Anderson, at (703)-693-8284, or [andrew.anderson@pentagon.af.mil](mailto:andrew.anderson@pentagon.af.mil).

## DIA Advisory Board

**Dr. Michael Wartell – Chairman**  
**Ms. Victoria Prescott – Exec Sec & Dir**

DIA has changed its Advisory Board to be smaller and more broad-based. The Board has been re-configured to be more focused on our current and future mission needs. New members with expertise in regional issues, social sciences, technology, human resources, and management are being identified. The Board will continue its representation on the Senior Steering Groups for

the four defense intelligence priority thrusts, which are Attack the Database Problem, Intelligence Integration/Interoperability with the Common Operating Picture, Shaping to Meet the Asymmetric Threat, and Revitalizing and Reshaping the Workforce. Additional topics for the Advisory Board are currently being evaluated.

**Defense Science Board Active Task Forces**

ID	Task Force	TOR Date	Finish	Dec	Jan	Fe	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1																
2	2001 SS: DEFENSE SCIENCE AND TECHNOLOGY	Dec 14 '00	May 31 '02													
3																
4	CHEMICAL WARFARE DEFENSE	Jan 2 '01	Feb 1 '02													
5																
6	E-COMMERCE	Dec 19 '00	Apr 1 '02													
7																
8	TRAINING FOR FUTURE CONFLICT	Dec 12 '00	Jul 31 '02													
9																
10	ENDURING FREEDOM LESSONS LEARNED	Dec 14 '01	May 31 '02													
11																
12	AIRCRAFT CARRIERS OF THE FUTURE	Sep 6 '01	Jun 1 '02													
13																
14	DISCRIMINANT USE OF FORCE	Dec 26 '01	Sep 1 '02													
15																
16	DEFENSE AGAINST TERRORIST USE OF BIOLOGICAL WEAPONS	Dec 6 '01	Sep 1 '02													
17																
18	INTELLIGENCE IN SUPPORT OF WAR AGAINST TERRORISM	Jan 10 '02	Nov 1 '02													
19																
20	DEFENSE AGAINST UNCONV USE OF NUCLEAR WPNS AGAINST U.S.	Apr 9 '02	Dec 31 '02													
21																
22	WIDEBAND RF SYSTEMS	May 9 '02	Nov 29 '02													
23																
24	2002 SS: MISSILE DEFENSE	Nov 30 '01	Sep 1 '02													
25																
26	2002 SS: SPCL OPS/JT FORCES IN SUPPORT OF COUNTERTERRORISM	Jan 2 '02	Sep 1 '02													
27																
28	ROLE AND STATUS OF DOD RED TEAMING ACTIVITIES	Feb 14 '02	Oct 31 '02													
29																
30																
31	MANAGING FOREIGN INTEL BY FOCUSING ON ENDS VS MEANS	May 3 '02	May 3 '02													
32	UNEXPLODED ORDNANCE	May 3 '02	May 3 '02													
33	B-52 RE-ENGINEING	May 3 '02	May 3 '02													
34	SATELLITE PROCUREMENT	May 3 '02	May 3 '02													

## **Defense Science Board Members and Ex Officio**

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Mr. Vincent Vitto, Charles Stark Draper Laboratory

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