

## **Guide to FY2010 Department of Defense (DOD) Research Funding**

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### **Overview**

DOD funds research that is relevant to its mission, predominantly drawing from engineering, computer/information science, and physical sciences. However, DOD also funds some limited basic social science, medical, and life science research. In addition to basic research (labeled 6.1, or BA1), DOD funds applied research (6.2, or BA2) and advanced technology development (6.3, or BA3). Universities get about 50% of the 6.1, 15% of the 6.2, and 10% of the 6.3 funding. But the 6.2 and 6.3 funding at Universities is dominated by University Affiliated Research Centers and other entities that are structured to handle greater deadline, classification and reporting requirements. On 6.2/6.3 projects, it is not unusual for a University professor to be a collaborator with industry, a university affiliated organization (such as ISI and ICT at USC), or a DOD lab.

Funding for basic research is distributed among several DOD agencies; each having its own particular focus. The DOD funding agencies providing appreciable basic research funds to Universities are:

- ARO (Army Research Office): soldier, ground force mission oriented (6.1)
- AFOSR (Air Force Office of Scientific Research): pilot, aerospace mission oriented (6.1)
- ONR (Office of Naval Research): sailor, marine, ship, ocean mission oriented (6.1 - 6.3)
- DARPA (Defense Advanced Research Projects Administration) defense-wide technology innovation oriented (6.1 - 6.3)
- DTRA (Defense Threat Reduction Agency) weapons of mass destruction (6.1 - 6.3)
- CBDP (Chemical Biological Defense Program) chem/bio warfare defense oriented (6.1 - 6.3)
- CDMRP (Congressional Directed Medical Research Program): medical research (6.1)

For the Army and Air Force, the 6.2 and 6.3 funds are managed out of their Laboratories and Commands. The projected basic research budget for the 2010 fiscal year is shown in Table 1. Charts (providing additional information) that are mentioned in the following sections can be found on the DC Research Advancement website, as described at the end of this document.

### **Single Investigator Efforts**

The majority of DOD basic research funding is invested in single investigator efforts. The opportunities are advertized through relatively generic Broad Area Announcements (BAAs). The funding for these efforts typically ranges between \$100-200K/yr for three years; continuation is possible. A typical program officer budget is in the range of \$1-2M/yr per topic area. Approximately 20% of continuing programs will be turned over annually; totally new programs without prior funding commitments occur periodically. For more information see Charts 32-81 that are parsed by funding agency and/or Charts 16-31 that are parsed by academic discipline.

While peer review is used to differing degrees by the various DOD agencies, the program officers have far greater latitude than do NSF program officers. So it is essential to contact a program officer and explore mutual interests (you can use the discipline organized Charts 16-31 to home-in on the appropriate program officers). A white paper is useful (sometimes required). Proposals to these long-range programs may be submitted at any time, but spring is when many tentative initial decisions are made for new starts. Guides to interacting with the program officers and preparing proposals are in Charts 120-124, with additional information/resources on the DC website.

### **Special Announcement Programs**

During any given year the various DOD agencies will announce special program opportunities. These range from large, center efforts (e.g., UARCs, Collaborative Technology Alliances, Centers of Excellence) to single investigator programs (e.g., ONR's New Concepts in Energy Conversion and Power Management, AFOSR's Discovery Challenge Thrusts, DARPA's Mathematical Challenges). These opportunities can be found by monitoring the funding agency sites for new solicitations; the DC Office of Research Advancement does this and provides alerts to pertinent USC investigators.

### **Teaming Efforts**

The multidisciplinary university research initiative (MURI) program has topics announced in the June – Sept time frame each year, with white papers due about a month later and proposals due about three months later. These require multidisciplinary teaming efforts; the funding is up to \$1.5M/yr for five years (presuming acceptable performance). A record of prior winners for the past ten years is available from the DC office, including the successful USC efforts. Successful proposals have typically had 2-4 Universities engaged, but single University efforts can be successful. For more information see Charts 82-3.

### **Instrumentation**

The Defense University Research Instrumentation Program (DURIP) is competed each summer. The awards range from \$50K to \$1M; matching funds are not required, but very useful for the high priced instruments. While anyone is free to submit, there is a strong preference for instrumentation in support of funded DOD research efforts. For more information see Chart 84.

### **Young Investigators**

The three services and DARPA have young faculty programs. The eligibility typically is within five years of Ph.D. or equivalent degree (DARPA is six years from initial tenure-track appointment). The available funding ranges from \$50K/yr (Army) to \$170K/yr (Navy). Submission deadlines vary. For more information see Chart 104.

### **National Security Science and Engineering Fellow**

DOD has a special program to support faculty with a degree awarded in the last 25 years and an established outstanding research record in areas of interest to DOD. About ten new awards of \$850K/yr for five years are begun each year – for more information see Chart 118. A table listing prior winners is available from the DC office.

### **Human Social, Behavioral, and Cultural Modeling**

OSD has created S&T programs to address understanding and modeling of human behavior in social and cultural contexts. The basic research component is entitled Minerva and is administered partly by DOD and partly by NSF (<http://minerva.dtic.mil/funding.html>). There are additional basic research investments by ONR and AFOSR. There is an applied component identified as HSCB (Human Social, Cultural, Behavioral Modeling) involving applied research (6.2), advanced technology development (6.3) and demonstration and validation (6.4). The HSCB program is administered through ONR. For more information see Charts 17, 107 and 108.

### **Congressionally Directed Medical Research Program (CDMRP)**

Congress typically adds funds to the DOD budget for support of medical research; these total to ~\$700M/yr in recent years. The funds are for specific topics and are competed openly through the CDMRP. For more information see Charts 85-96 and/or visit the website <http://cdmrp.army.mil>.

### **Education**

In addition to funding research itself, there are DOD programs in support of postdoctorates (NDSEG - \$40M/yr) and education (NDEP - \$53M/yr). In addition there are many programs to support faculty working at the various DOD laboratories. For more information see Charts 108-118.

### **Non-DOD Security Related Opportunities**

In addition to the DOD, the Intelligence Community and the Department of Homeland Security have some S&T opportunities. For more information see Charts 8-11.

### **Resources**

In the file labeled USC DOD Funding Revised "XX", the DC Office of Research Advancement website provides a compilation of numbered charts with detailed information on the various DOD funding agencies; the various program interests; the program managers, their research interests and contact information; and how to best navigate the agency websites. In addition there are other useful reports and presentations available for downloading.

### **Assistance in Locating Funding and Preparing Proposals**

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Next DOD Funding Workshop will be held November 18, 2009. For more details go to: [http://www.usc.edu/research/for\\_researchers/training/defense/](http://www.usc.edu/research/for_researchers/training/defense/)

The cited charts and various DOD S&T reports are available at:  
<http://dcresadv.usc.edu/archives/index.html>

User name: DCresadv

Password: Trojan1

Table I: Projected DOD Basic Research Funding (\$M) for FY2010

Discipline / Agency	Army	AF	Navy	DARPA	DTRA	CBDP	OSD	CDMRP
<b>Biology / Life Sciences</b>	6			54				
Human Systems			16					
Biology / Medical			18					
<b>Chemistry</b>	7	39		xx				
Propulsion		31						
<b>Physics</b>	10	47	19	69				
<b>Electronics/Photonics</b>	13	41	51	xx				
<b>Materials</b>	13	29	60	53				
<b>Air/Ground/Sea Vehicles</b>			54					
<b>Mechanics</b>								
Mechanics Structural		20						
Mechanics Fluid		24						
<b>Environment</b>								
Ocean			83					
Atmosphere and Space			28					
Environmental Science	2							
<b>Computer, Information Sciences, Mathematics</b>			34	51				
Mathematics and Computing Sciences	13	33						
Information Sciences		46						
Networks	2							
<b>Counter IED Devices</b>			22					
<b>Science Education Career and Outreach</b>	xx	10	27					
<b>Chemical/Biological Warfare Defense</b>				xx		35		
<b>Weapons of Mass Destruction Defeat</b>					48			
<b>High Energy Laser Multidisciplinary Research Initiative</b>		13						
<b>Multidisciplinary University Research Initiatives (MURI)</b>	59	73	74					
<b>Defense University Instrumentation Program (DURIP)</b>	13	19	15					
<b>National Defense Science and Engineering Program (NDSEG)</b>		41						
<b>National Defense Education Program (NDEP) - STEM</b>							53	
<b>Social / Cultural / Human - MINERVA, HSCB</b>	10	xx	xx				0	
<b>National Security Science and Engineering Faculty Fellow</b>							37	
<b>Medical</b>								-700
<b>Total</b>	148	466	501	227	48	35	90	

Since the projected budgets are parsed differently than the organizational structures, clear assignment of funds is not always possible. In some cases the amount of funding is unknown – indicated by “xx” in the cell. For more information, including this Table with links to the supporting websites, see Charts 16-31.

AFOSR	Air Force Office of Scientific Research
ARO	Army Research Office
CBDP	Chemical/Biological Defense Program
CDMRP	Congressionally Directed Medical Research Program
DARPA	Defense Advanced Research Projects Agency
DTRA	Defense Threat Reduction Agency
HSCB	Human Social Cultural and Behavior Modeling
IED	Improvised Explosive Devices
Minerva	DOD program engaging the social science community
NSSEFF	National Security Science and Engineering Faculty Fellowship
STEM	Science, Technology, Engineering, Mathematics
ONR	Office of Naval Research
OSD	Office of the Secretary of Defense
UARC	University Affiliated Research Center