Writing a Competitive DOE/DOD Proposal
with emphasis on computation

Dr. James S. Murday
Tel: 202 824 5863   E-mail: murday@usc.edu
40 years in S&T with Federal Agencies
## FY2006 DOE Research Funding ($M)
### Obligations at Universities/Colleges

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DOE’s Priorities and Goals
from Dr. Patricia Dehmer’s presentation to Energy Sciences Coalition, 19 May 2009

Priority: Science and Discovery: Invest in science to achieve transformational discoveries
- Organize and focus on breakthrough science
- Develop and nurture science and engineering talent
- Coordinate DOE work across the department, across the government, and globally

Priority: Change the landscape of energy demand and supply
- Drive energy efficiency to decrease energy use in homes, industry and transportation
- Develop and deploy clean, safe, low carbon energy supplies
- Enhance DOE’s application areas through collaboration with its strengths in Science

Priority: Economic Prosperity: Create millions of green jobs and increase competitiveness
- Reduce energy demand
- Deploy cost-effective low-carbon clean energy technologies at scale
- Promote the development of an efficient, “smart” electricity transmission and distribution network
- Enable responsible domestic production of oil and natural gas
- Create a green workforce

Priority: National Security and Legacy: Maintain nuclear deterrent and prevent proliferation
- Strengthen non-proliferation and arms control activities
- Ensure that the U.S. weapons stockpile remains safe, secure, and reliable without nuclear testing
- Complete legacy environmental clean-up

Priority: Climate Change: Position U.S. to lead on climate change policy, technology, and science
- Provide science and technology inputs needed for global climate negotiations
- Develop and deploy technology solutions domestically and globally
- Advance climate science to better understand the human impact on the global environment

Secretary Chu stated that DOE is pursuing transformative ideas to overcome decades of “stove-piped” thinking at the agency, and will center its new research strategy on DOE’s research laboratories and the nation’s universities. According to the Secretary, primary elements of DOE’s new strategy will be initiatives such as the Energy Frontier Research Centers (EFRCs), Advanced Research Projects Agency – Energy (ARPA-E), and Energy Innovation Hubs, all of which were briefly discussed during the hearing.

Testimony to Senate Energy Com - 21 Jan 2010
**ASCR Mission:** To discover, develop, and deploy computational and networking capabilities to analyze, model, simulate, and predict complex phenomena relevant to DOE.

**Priorities:**
- Develop mathematical descriptions, models, methods, and algorithms to understand complex systems across wide spatial and temporal scales
- Develop the underlying understanding and software to make effective use of computers at extreme scales and to transform extreme-scale data into scientific insight
- Deliver forefront computational and networking capabilities to extend the frontiers of science
- Support mathematical and computational partnerships to advance key DOE & SC missions
- Develop networking and collaboration tools and facilities that enable scientists worldwide to work together
Acquiring Topic/Program Manager Information
Advanced Scientific Computing Research (ASCR)

Go to  http://www.er.doe.gov/ascr/

Click on Research in left hand column

Click on the appropriate topic for a program description
The program manager contact information is at lower right corner

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**BES Mission:** To support fundamental research to understand, predict, and ultimately control matter and energy at the electronic, atomic, and molecular levels in order to provide the foundations for new energy technologies and to support DOE missions in energy, environment, and national security.

**Priorities:**
- Create a new paradigm for the design of materials, especially those related to the efficient production, storage, transmission, and use of energy
- Through observation and manipulation of matter at the atomic and molecular scales, achieve mastery of material syntheses and chemical transformations relevant to real-world energy systems
- Understand and control fundamental interactions between matter and energy, especially at the nanoscale
- Conceive, construct, and operate open-access scientific user facilities to probe materials at the limits of time, space, and energy resolution
### DOE Office of Science
Basic Energy Sciences

[www.sc.doe.gov/bes/bes.html](http://www.sc.doe.gov/bes/bes.html)

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**BER Mission:** To understand biological, climate, and environmental systems by exploring the frontiers of genome-enabled biology; discovering the physical, chemical, and biological drivers of climate change; and seeking the biological, geochemical and hydrological molecular determinants of environmental sustainability and stewardship.

**Priorities:**
- Use systems biology approaches to understand enzymatic, microbial, and plant interactions for the conversion of biomass into liquid transportation fuels
- Use advanced atmospheric measurements together with high-end computation and modeling to predict the impact of greenhouse gases on climate change
- Model and measure the fate and transport of contaminants in the subsurface environment at DOE sites to predict contaminant flows
- Develop new tools to explore the interface of biological and physical sciences
Acquiring Topic/Program Manager Information
Biological and Environmental Research (BER)

Go to http://www.er.doe.gov/OBER/

Click on the appropriate Division (mid page)

Click on the appropriate topic

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Office of Science Early Career Research Program

Investment in FY 2011 will bring 62 new scientists into the program

$16 million will be available in FY 2011 to fund about 60 additional Early Career Research Program awards at universities and DOE national laboratories.

Purpose: To support individual research programs of outstanding scientists early in their careers and to stimulate research careers in the disciplines supported by the Office of Science.

Eligibility: Within 10 years of receiving a Ph.D., either untenured academic assistant professors on the tenure track or full-time DOE national lab employees.

Award Size:

- University grants $150,000 per year for 5 years to cover summer salary and expenses
- National lab awards $500,000 per year for five years to cover full salary and expenses

FY 2010 Results:

- 69 awards funded via the American Recovery and Reinvestment Act
- 1,750 proposals peer reviewed to select the awardees
- 47 university grants and 22 DOE national laboratory awards
- Awardees are from 44 separate institutions in 20 states

FY 2011 Application Process:

- Funding Opportunity Announcement issued in Spring 2010
- Awards made in the Second Quarter of 2011
Principal DOD Basic Research Funding Offices

Service Research Offices (OXR’s)
   Army Research Office (ARO)  www.aro.army.mil/
   Air Force Office of Scientific Research (AFOSR)  www.afosr.af.mil/
   Office of Naval Research (ONR)  www.onr.navy.mil/
Army Medical Research and Materiel Command
   CDMRP (Congressional adds, fully open competition)  cdmrp.army.mil/
   TATRC (Congressional adds, special interest)  www.tatrc.org/
Army Research Inst for Behavioral & Social Sci
   DARPA
      Defense Science Office (DSO)  www.darpa.mil/dso/
      Microsystems Technology Office (MTO)  www.darpa.mil/mto/
      Information Innovation Office (I2O)  www.darpa.mil/ipto/
Defense Threat Reduction Agency (DTRA)
   CBDP (DTRA BAA for FY10)  www.dtra.mil

AMRMC  Army Medical Research and Material Command
DARPA  Defense Advanced Research Project Agency
DTRA  Defense Threat Reduction Agency
CBDP  Chemical and Biological Defense Program
CDMRP  Congressionally Directed Medical Research Program
DMRDP  Defense Medical Research and Development Program
TATRC  Telemedicine and Advanced Technology Research Center
DOD RDT&E Taxonomy - Primer

Science and Technology ($11.6B in FY10)

BA1 6.1 Basic Research (TRL 0-1) greater knowledge of fundamental aspects of phenomena – largely use inspired

BA2 6.2 Appl Research (TRL 2-3) determine means by which a specific need may be met

BA3 6.3 Adv Technol Development development / integration of hardware for field expt

Development ($68B in FY09)

BA4 6.4 Demonstration & Validation evaluate integrated technology in realistic environment

BA5 6.5 Engn and Manuf Development for projects without approval for full rate production

BA6 6.6 RDT&E Management Support program managers, ranges, test facilities,…

BA7 6.7 Operational Sys Development support of development acquisition programs or upgrades

Congressionally Directed Medical Research

SBIR / STTR – 2.5% / 0.3% tax on R&D funding

BA  Budget Activity
RDT&E  Research, Development, Test & Evaluation
SBIR  Small Business Innovation Research
STTR  Small Business Technology Transfer
TRL  Technology Readiness Level
Recipients of DoD S&T Funds

*Includes non-profit institutions, State & local govt., & foreign institutions
Source: National Science Foundation Report, Volume 48 (FY 2003)

From OSD R&D Overview, Dr. Lewis Sloter
Defense Research Sciences (DRS)

What: Largest source of DOD funding for University research
    Majority invested in single investigator efforts (as opposed to URI)
    OXR DRS Broad Area Announcements (BAA) are relatively generic
    OXR Program Officer (PO) key to success (presuming convincing proposal)
    Each PO has focused interests, coupling science with some military need
    Each Service has specifically identified program interests (websites and BRP)

How Much: typically $100 – 200K/yr for three years (with continuation possible)
    OXR programs typically have ~20% turn over each year

When: Initial “white paper” useful (sometimes required)
    Proposals nominally anytime, but spring/early summer to be timely
    Most funding decisions processed in fall, early winter – after appropriation bill

Where: Mix of paper and electronic (grants.gov), see for instance
    http://www.onr.navy.mil/02/proposal_procedure.asp

FY11
Army ~$196M
Air Force ~351
Navy ~430
DARPA ~328

2008 Basic Research Plan (BRP) at http://dcresadv.usc.edu/archives/index.html
## Computer, Mathematics, and Information Sciences

### Computing and Information Sciences - ARO
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<td>Randy Zachery</td>
<td>919 549 4368</td>
<td><a href="mailto:randy.zachery@us.army.mil">randy.zachery@us.army.mil</a></td>
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<td>Software &amp; Intelligent Systems</td>
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<td>919 549 4204</td>
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<tr>
<td>Complex Networks</td>
<td>Robert Bonneau</td>
<td>703 696 9545</td>
<td><a href="mailto:robert.bonneau@afosr.af.mil">robert.bonneau@afosr.af.mil</a></td>
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<td>Distributed Intell &amp; Info Fusion</td>
<td>Douglas Cochran</td>
<td>703 696 7736</td>
<td><a href="mailto:douglas.cochran@afosr.af.mil">douglas.cochran@afosr.af.mil</a></td>
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<td>Dynamics and Control</td>
<td>Scott Wells</td>
<td>703 696 7796</td>
<td><a href="mailto:scott.wells@afosr.af.mil">scott.wells@afosr.af.mil</a></td>
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<td>Information Operations &amp; Security</td>
<td>Robert Herklotz</td>
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<td><a href="mailto:robert.herklotz@afosr.af.mil">robert.herklotz@afosr.af.mil</a></td>
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<td>Math Model of Cognition &amp; Decision</td>
<td>Jun Zhang</td>
<td>703 696 8421</td>
<td><a href="mailto:jun.zhang@afosr.af.mil">jun.zhang@afosr.af.mil</a></td>
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<td>Sensory Information Systems</td>
<td>Willard Larkin</td>
<td>703 696 7793</td>
<td><a href="mailto:willard.larkin@afosr.af.mil">willard.larkin@afosr.af.mil</a></td>
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<td>Systems and Software</td>
<td>David Luginbuhl</td>
<td>703 696 6207</td>
<td><a href="mailto:david.luginbuhl@afosr.af.mil">david.luginbuhl@afosr.af.mil</a></td>
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### Math, Computers & Info Research - ONR Code 311
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<td>Behzad Kamgar-Parsi</td>
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<td>Science of Autonomy</td>
<td>Marc Steinberg</td>
<td>703 696 0703</td>
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Information Innovation Office – DARPA I2O

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Computer security / network resilience
Richard Dean 571 218 4890

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Reasoning, federated architectures
James Donlon 571 218 4419 James.donlon@darpa.mil

Multisensory systems, large databases
Melanie Dumas 571 218 4622 melanie.dumas@darpa.mil

Image/video processing, wireless comms
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Efficient comms, optimal control
Neil Fox

Info technology for counter insurgency
Randy Garrett 571 218 4345

Embodied cognition, intelligent agents
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Qualitative data collection, social relationships
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Processor architectures
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Speech translation, information mgmt
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Biomimetics of control and systems theory
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Adaptive systems
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Computational social science
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Computer dialog, machine reading
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Information fusion, very large data sets
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Sensor, ISR
Vincent Sabio 571 236 7991

IT based therapeutics
Russell Shilling 571 218 4970

New computer architectures
Howard Shrobe 703 248 1537

Information systems security
Rand Waltzman 571 218 4812

Information security
Peiter Zatko 703 248 1539
Program Creation Basics

- PM finds new technology idea(s) and links it to capability
- Seedling funding to explore idea and create program brief
  - Typically $200K - $300K / 4-6 months
  - Solidify program argument, financials, milestones, phases, metrics, experimentation strategy, and program deliverable/transition/MOU.s.
  - Seedling output is the newstart brief – not jumpstart technology

- Brief to DARPA Director
  - Repeat a few times

- BAA construction and publication

- Source Selection (and possible plan revision)

- Contracts Awarded via an Agent

- Program Phase I with milestones
- DARPA Director Brief
- Program Phase II with milestones
The Dugan Catechism – Questions to be Addressed in New Program Pitches

Need: What problem is going to be solved or opportunity created?
- What is causing the problem? What kind of opportunity is it?
- Why do we believe it’s possible to do anything about it? What’s the evidence?
- Why now and not last year or ten years ago?
- Who cares if we address this? Who will resist and why? Why DARPA?

Approach: How do you plan to address the key challenges?
- What are the program elements needed to make it possible?
- What are the execution risks in the program elements?
- How much effort is required in each element?
- How central is integration of elements & how is it going to be managed?
- How do you capture mind share, resources and catalyze/inspire a community?

Capability: Is the solution an aspirin or a vitamin?
- Why is this way better than other ways?
- Can we use this for other things? Think big and specific.
- How much of a dent will we cause in the universe (Steve Jobs)?

Effort: How much time and money will it take to be able to solve?
- How does allocation of effort reflect the risks/importance of program elements?
- How will we measure progress towards solution?
- How do intermediate objectives align with and drive overall program objective?
PMs receive white papers from all sources (academia, industry, national labs).

Some are passed to other PMs.

Some are read and discarded.

Some are interesting to PMs:
- Related to a possible future program
- Trigger interest in a future program
- Solve a key challenge emerging in an existing program

PM works with Office Director, Proposer, other PMs to refine interest, define a decisive short-term study, make funding decision.

Key step: Initial White Paper
What is a White Paper?

The goal of a white paper is to capture the interest of a PM in your idea. Successful white papers are:

- Short and Focused
- Identify a Problem
- Describe a Solution
- Focus on Key Challenge and Effort Needed
- Outline a Decisive Plan
- Typical length ~ 1 year. Typical Budget ~$300K
- Include some graphics, and possibly a Penta-Chart

When to Send? Anytime. We receive white papers almost every day of the year.
White Paper

Who to Send To?

Do some homework:
- Read statements on PM web pages
- Read program descriptions
- Ask Friends and Colleagues with DARPA Funding

Make contact
- We attend conferences
- We (often) read email and answer the phone
- Ask for an appointment when in DC.

Don’t be shy
- Find us at meetings
- Resend emails if ignored
- Ask about workshops
- Contact our administrative support people
- Don’t be shy
DOD Young Investigator/Young Faculty Programs

What: Outstanding new faculty members at institutions of higher education, to support their defense related research, and to encourage their teaching and research careers

Army, AF, Navy must be US citizen / permanent resident
DARPA and DTRA have no citizenship or residency requirement

Services/DTRA - received Ph.D. or equivalent degrees within the last five years
DARPA – tenure track assistant/associate professors within 5 years of appointment

Topics must conform with agency interests

How Much:

- Army - not to exceed $60K/yr for three years
- Air Force - $120K/yr for three years
- Naval - up to $170K/yr for three years, possibility of additional support for capital equipment or collaborative research with a Navy laboratory
- DTRA - $100K/yr for two years
- DARPA - $150K/yr for up to two years

When: Anytime for Army

- July 28, 2010 for the Air Force FY11 competition (AFOSR BAA 2010-3)
- Dec 22, 2010 for Naval FY11 competition (ONR BAA 2010-025)
- 39 June 2010 for the DTRA period 5 competition (HDTRA1-08-10-BRCWMD-BAA)
- Feb 5, 2010 for the DARPA FY10 competition (DARPA RA 10-23)

Where: See BAAs on websites
See also www.spo.berkeley.edu/Fund/newfaculty.html and viterbi.usc.edu/research/info/funding-opportunities-for-new-and-junior-faculty.htm

Listing of prior AF, Navy, DARPA awardees available from DC Office
Army Young Investigator Award

BROAD AGENCY ANNOUNCEMENT FOR BASIC AND APPLIED SCIENTIFIC RESEARCH FY07 – FY11
W911NF-07-R-0001-05 (FY2007-2011), YIP information on page 114

**Who.** This program is open to resident aliens and U.S. citizens holding tenure track positions at U.S. universities and colleges who have held their graduate degrees (Ph.D. or equivalent) for fewer than five years at the time of application.

**What:** Attract to Army research outstanding young university faculty members, to support their research, and to encourage their teaching and research careers.

Strongly encourage informal discussions with the cognizant Army Research Office (ARO) technical program manager before submission of a formal proposal.

A supporting letter from the applicant's Department Chairperson, Dean, or other official who speaks for the university regarding support for and commitment to the applicant. Strong university support for the applicant is essential. This support can include the applicant's 9-month academic salary, release time from administrative responsibilities, the purchase of equipment, support for the applicant's graduate students, waiver of indirect costs, departmental cost sharing, start-up funding, and so on.

**How Much:** YIP awards not to exceed $50,000 per year for three years

**When:** Proposals may be submitted at any time.
AF Young Investigator Award (YIP)

Air Force Fiscal Year 2011 Young Investigator Research Program AFOSR-BAA-2010-3

Who: The individual award will be made to a U.S. institution of higher education, industrial laboratory, or non-profit research organization where the principal investigator is employed on a full-time basis and holds a regular position.

The principal investigator must be a U.S. citizen, national, or permanent resident who has received a Ph.D. or equivalent degrees in the last five years (on or after 1 May 2005 for the FY11 competition)

What: foster creative basic research in science and engineering, enhance early career development of outstanding young investigators, and increase opportunities for the young investigators to recognize Air Force mission and the related challenges in science and engineering.

Proposals addressing the research areas of interest for the Air Force Research Laboratory will be considered. The basic research areas of current interest are available on-line at the AFOSR web site: http://www.wpafb.af.mil/AFRL/afosr/

How Much: The estimated value of each award is approximately $120K per year for three years. Exceptional proposals will be considered individually for higher funding level and/or longer duration (up to five years upon a successful review during the third year).

When: 28 July 2010 for FY11 competition

FY 2009 competition had 39 awards out of 210 proposals
FY 2010 competition had 38 awards out of 202 proposals
FY 2011 approximately 30 awards anticipated
Naval Young Investigator Program
Fiscal Year 2011 ONR Young Investigator Program  ONR BAA 10-025

Who: Principal Investigator of a proposal must be a U.S. citizen, national, or permanent resident (on the date proposals are due), holding a tenure-track or permanent faculty position at that university, who received her/his graduate degree (Ph.D. or equivalent) within the last five years (on or after 01 November 2005 for this FY09 competition).

What: The objectives of this program are to attract outstanding faculty members of Institutions of Higher Education to the Department of the Navy's research program, to support their research, and to encourage their teaching and research careers.

Applications may (should) contact a Program Officer who is the point-of-contact for a specific technical area, to discuss their research ideas. Brief informal pre-proposals may be submitted to facilitate these discussions. Such discussions can clarify the content and breadth of the priority research areas and enhance the match between a subsequent proposal and Department of the Navy research needs.

How Much: Proposals may request up to $170,000 per year for three (3) years. These funds may be budgeted against any reasonable costs related to the conduct of the proposed research, for example, salary for the Young Investigator, graduate student support, supplies, and operating expenses. Additional funds (beyond the basic $170,000 yearly amount) for capital equipment which enhances the Young Investigator's proposed research may be requested for the first budget period, based on the needs of the research. The basic $170,000 per year award can be supplemented through a "matching funds" enhancement available only to those receiving an ONR Young Investigator award.

When: 22 December 2010 for the FY11 competition

FY09 competition had 15 awards out of 193 proposals
FY10 competition had 17 awards out of 217 proposals
DEFENSE THREAT REDUCTION AGENCY (DTRA)
Research and Development Enterprise
Basic and Applied Sciences Directorate

Basic Research for Combating Weapons of Mass Destruction (C-WMD)
HDTRA1-08-10-BRCWMD-BAA Amendment 7 (May 2010)

Who: Non-tenured faculty who received a Ph.D. or equivalent degree on or after 15 May 2005 (for the CY10 submission). No requirement for US citizenship or permanent residency

What: Y Topics: Proposals that focus on exploratory aspects of a unique problem, a high risk approach, or innovative research in subjects with potential for high impact to C-WMD science (page 56 of BAA)
   Per5-Y-1: Basic Research for 3He Alternatives
   Per5-Y-2: Basic Research on Prompt Diagnostic Signatures of Nuclear Detonations
   Per5-Y-3: Theory-based Approaches for Complex Probabilistic Software
   Per5-Y-4: Basic Science for Nuclear Test Verification and Monitoring

How Much: DTRA anticipates that Young Investigator Awards will be $100,000 per year for two years.

When: 30 June 2010 Phase I White Paper Submission Deadline

In 2009 competition ~15 awards
Defense Advanced Projects Agency (DARPA) Young Faculty Award

Research Announcement Young Faculty Award, DSO/MTO/I2O
DARPA-RA-11-02 (FY12 release expected in Nov 2010).

**Who:** Participation is limited to untenured Assistant or Associate Professors within 5 years of appointment to a tenure-track position at a U.S. institution of higher learning. DARPA is particularly interested in identifying outstanding researchers who have previously *not been performers on DARPA programs, but the program is open to all qualified applicants with innovative research ideas.*

There is no prohibition against a non-U.S. citizen/a Permanent Resident/here on a Green Card/etc., from submitting a proposal for consideration; nor is it a requirement of the RA that the submitter be eligible to obtain a U.S. security clearance.

**What:** The YFA program will provide high-impact funding to these faculty early in their careers in order to develop their research ideas in the context of Defense needs. DARPA’s long-term goal for this program is to develop the next generation of academic scientists, engineers, and mathematicians in key disciplines who will focus a significant portion of their career on Department of Defense and National Security issues.

Single investigator proposals for research and development in the areas of the Physical Sciences, Engineering, and Mathematics of interest to DARPA’s Defense Sciences Office (DSO) and Microsystems Technology Office (MTO), and Social Sciences of interest to DARPA’s Transformational Convergence Technology Office (TCTO). Proposed research should focus on innovations that will enable revolutionary advances; high-risk/high-payoff ideas are strongly encouraged. The announcement contains detailed descriptions of the Offices’ interest areas.

Topic POCs are unable to accommodate any meetings/calls; you may send questions to DARPA-RA-11-02@darpa.mil.

It is a requirement that an Executive Summary Slide is completed.

**How much:** Awards will fund two years of research for a single investigator and will be less than $300,000.

**When:** Proposals were due December 10, 2010 for the FY11 competition

In FY10 competition 31 awards
In FY09 competition 33 awards from ~300 proposals
Anecdotes on Competing for DOD YIP Funding

Thursday, April 29, 2010 Web posting

NSF funding isn't enough to maintain a group. While some focus on NIH, in my field, going to DoD (army, navy, air force) is the way. All three branches of DoD have young investigator programs (YIPs). To be eligible, you have to be a U.S. citizen, and you must be no more than 5 years out from your PhD. These requirements whittle down the playing field, so your chances of being funded - if you're eligible - are seemingly high. (Although the last ONR YIP funding rate was < 10%, sigh).

The problem is with getting your foot in the door. For NSF, you can submit an idea - your idea with whatever application you like. But for DoD, you need to bounce ideas off of the program manager to find what fits into their program. If you've got a great idea but it doesn't fit in with the goals of DoD, then it won't get funded. So in other words, communicating with a program director prior to submission is critical.

Now for the YIP. I am exceedingly frustrated with the way program managers in DoD uniformly ignore young investigators - even those inquiring about YIP. You can call, email, send in unsolicited white papers, and there is a brick wall of silence. It's not just me. Mr. JP has the brick wall. Colleagues get the brick wall. So then, I ask, who is getting these YIPs? I talked with one colleague who is a star, and he gets the brick wall from other military branches. With this particular YIP that he got, someone actually wrote back. Other advice is to arrange appointments with the PMs when you are in DC. That's a great idea, and I would love for that to happen. But my emails and calls saying, "Hey, I'm in your neck of the woods, let's talk," get ignored.

Comments contributed to the posting:
1. I got the ARO young investigator. Like you, most of the people I called or emailed ignored me. I repeatedly called or emailed until I got one or two on the phone, but they were not terribly interested. Eventually, I found a program manager who I had met before at a conference. When I called him, he remembered seeing my talk, was very friendly, and was interested in my applying for the YIP. Don't worry, keep persisting. Use any connection you can find – ask your postdoc advisor and grad school advisor who they are funded by and if they can send an email introducing you. For DARPA, I believe it is less dependent on the program manager as all applications are handled by one person, rather than different applications going to the PM closest to that field. PS: DARPA PM's are not supposed to talk to you about the YIP in particular. I got a very cold brush-off when I tried it. This is different from the usual modus operandi for seed grants and other DARPA funding. ONR, ARO and AFOSR PM's will in principle talk to you if you can get a hold of them.

2. To get any of the DOD young investigator awards, you must make a connection with the PM. They have to *want* to fund you as part of their program, as these awards are usually partly YIP funds partly PM's program's funds. You ought to go to Washington and talk to the PM in person, email white papers, etc., and cultivate a relationship, otherwise it's a no go. A good way is to be introduced to a PM by a senior well funded colleague. Then you start emailing the PM and try to deepen the relationship. It takes time but is worth it. I don't think any of them are particularly easy to get a hold of, though, so don't take it personally if the don't answer email or voicemail.
Presidential Early Career Award Science and Engineering (PECASE)

What: White House award to recognize some of the finest scientists and engineers who, while early in their research careers, show exceptional potential for leadership at the frontiers of scientific knowledge during the twenty-first century.

Candidates must hold tenure-track positions at U.S. Univ. or College

Have received their Ph.D. degree within the preceding 5 years

Typically 2 nominees per Service

How Much: ~$200K/yr for five years (cost borne by DOD through the URI line)

When: Submitted to White House in October

Where: OXRs submit nominees from their grantees – typically YIPs
Suggestions on working with DOD Basic Research

Program Officer – Program Officer – Program Officer

DOD Program officers have considerable latitude at project level
Typical “subprogram” budget ~ $1-2 M
Their reputation/professional advancement tied to your “success / failure”

Make contact with Program Officer before submitting a white paper or proposal
Significantly improves chance of tailoring ideas
First read the descriptive paragraph on the website – call informed
Plumb his/her current interest – website paragraphs are likely dated
Also ask after availability of funds – resources may be fully committed
Begin Supplemental Charts
DOE as part of Federal “Basic and Applied Research” Funding

The American Competitiveness Initiative to grow NSF, DOE, NIST

2009 DOD does not show adds Congress will insert in the appropriations bill

Source: AAAS analyses of R&D in annual AAAS R&D reports.
* FY 2009 figures are latest AAAS estimates of FY 2009 request. Research includes basic research and applied research. 1976-1994 figures are NSF data on obligations in the Federal Funds survey.
FEBRUARY '08 PRELIMINARY © 2008 AAAS
Federal Obligations ($B) for Research by Agency (NSF 10-303)
### DOD FY11 Basic Research Open to University PIs, By Discipline

(Murday Best Estimate)

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*xx Could not be ascertained – incorporated in the other lines*
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- Discrete Math & Comp Sci: Janet Spoonamore 919.549.4284  janet.spoonamore@us.army.mil
- Modeling of Complex Systems: John Lavery 919.549.4253  john.lavery2@us.army.mil
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