

Developing Defense Advanced Research Projects Agency (DARPA) Proposals

2019 SRAI WE/SO Section Meeting
San Diego, CA
March 12, 2019 | 2:15-3:30pm
Concurrent Session: T301



THE UNIVERSITY OF
TENNESSEE
KNOXVILLE

Agenda

- Introduction and Objective
- DARPA Overview
- Fundamental, Restricted & CUI
- Pre-award: Technical & Cost Volume
- Negotiation & Award

Introduction



Will Helmrath

Research Coordinator
Engineering Research Office
The University of Tennessee
Tickle College of Engineering

UTK

UT Knoxville is the flagship campus of the University of Tennessee System (includes UT Chattanooga, UT Martin, the UTIA, and the UT Health Science Center)



Founded in 1794, first public university chartered west of the Appalachian Divide.

Tickle College of Engineering – quick facts:

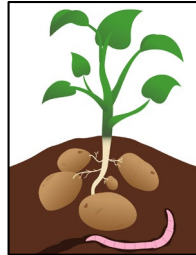
- 7 Departments (Chemical & Biomolecular Eng., Civil & Environmental Eng., Electrical Eng. & Computer Science, Industrial & Systems Eng., Materials Science & Eng., Mechanical, Aerospace & Biomedical Eng., Nuclear Eng.)
- 4,548 enrolled undergrad. & grad. students
- 33rd Undergrad. program among public universities*
- 29th Grad. program among public universities*
- \$79m annual research expenditures

* Per *US News and World Report Rankings*

“My” DARPA projects

Program: Advanced Plant Technologies

Project: Phytosensors 2.0



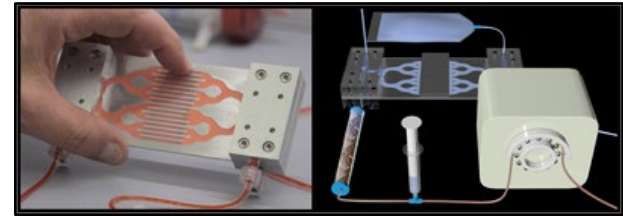
Program: Biological Technologies

**Project: Synthetic Chloroplast
Genome Editing**

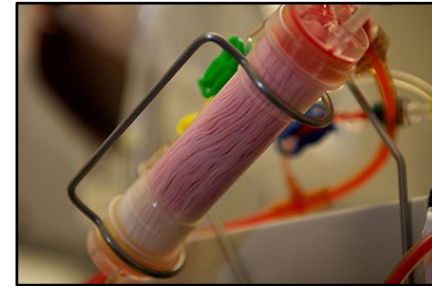


Program: Dialysis-like Therapeutics

Project: Spleen-on-a-chip*

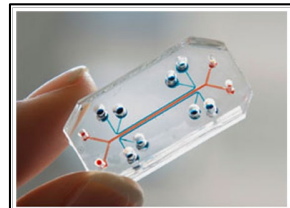


Project: Blood Cleansing Cartridge*



Program: Microphysiological Systems

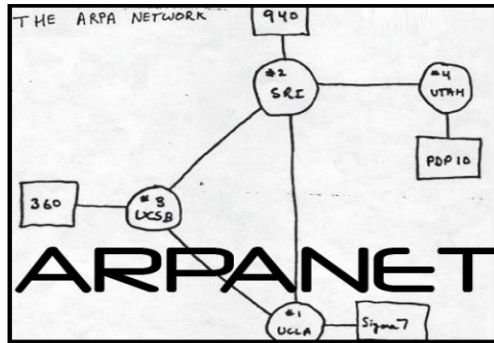
Project: Human Organs-On-Chips*



*Photo Credits: Wyss Institute at
Harvard University

Investing in research that sounds like science fiction

Internet



Global Positioning System



Bionic Arms



Speech Recognition



Engaging with DARPA – A contact sport

Step 1: Learn more about the research DARPA is focused on

- Find a program officer to talk to

Step 2: Identify opportunities that bridge priorities and your interests

- Find out what that program officer wants to do and show them what you and your team can do (Quad chart/White paper)

Step 3: Find the right solicitation

- Continue the conversation and be ready

Step 4: Apply

- Go for it and keep the conversation going (especially if not funded)

Heilmeier's Catechism – Speaking the right language

What are you trying to do?	• Articulate your objective without jargon
How is it done today?	• What are the limitations of the current start-of-the-art?
What is new in your approach?	• Why do you think this project will be successful
Who cares?	• If you are successful, what difference will it make.
What are the risks and payoffs?	• How are you mitigating risk? Is the reward worth it?
How much will it cost? How long will it take?	• Time is money and money is time
What are the midterm and final “exams” to check for success?	• What’s your roadmap for success? What are your milestones and deliverables at each checkpoint?

Technical offices



BIOLOGICAL
TECHNOLOGIES
OFFICE



DEFENSE
SCIENCE
OFFICE



INFORMATION
INNOVATION
OFFICE



MICROSYSTEMS
TECHNOLOGY
OFFICE



STRATEGIC
TECHNOLOGY
OFFICE



TACTICAL
TECHNOLOGY
OFFICE

Program manager-centric projects

- Designs program
- Sets program goals, metrics, milestones
- Identifies performers and provides funding
- Monitors progress
- Generally short service (3-5 years)
- Surrounded by technology & scientific staff, & administrative & financial team

“Bureaucracy comes from people staying in one place too long doing things the same old way. DARPA doesn’t do that”¹

Dr. Geoffrey Ling, DARPA BTO Founding Director

Funding mechanisms

General Technical Office-wide solicitations

- Provide current technical areas of interest
- Unlisted technology topic areas that fit the scope of the technical office may be proposed (check the BAA)

Program-specific solicitations

- Targets the need of a particular research and development program

Young Faculty Award program

- Highly competitive

Broad Agency Announcement

DARPA-BAA-14-02, Biological Rebarrier to Complex Settings (BRICS)

PLEASE NOTE, PROPOSERS ARE CAUTIONED THAT PROPOSALS MAY BE REJECTED IF SUBMITTAL INSTRUCTIONS ARE NOT FOLLOWED.

All proposals requesting an S&S Other Transaction for Prototypes (OT) agreement must include a detailed list of milestones. Each such milestone must include the following: milestone description, completion criteria, due date, and payment/funding schedule (to include, if cost share is proposed, contractor and Government share amounts). It is noted that, at a minimum, such milestones should relate directly to accomplishment of program technical metrics as defined in the BAA and/or the proposer's proposal. Agreement type, fixed price or expenditure based, will be subject to negotiation by the Agreements Officer; however, it is noted that the Government prefers use of fixed price milestones with a payment/funding schedule to the maximum extent possible. Do not include proprietary data. If the proposer requests award of an S&S OT agreement as a nontraditional defense contractor, as so defined in the Office of the Secretary of Defense (OSD) guide entitled "Other Transactions (OT) Guide For Prototype Projects" dated January 2001 (as amended) (<http://www.osd.mil/otm/Docs/otguide.doc>), information must be included in the cost proposal to support the claim. Additionally, if the proposer requests award of an S&S OT agreement, without the required one-third (1/3) cost share, information must be included in the cost proposal supporting that there is at least one non-traditional defense contractor participating to a significant extent in the proposed prototype project. For information on S&S Other Transaction for Prototypes (OT) agreements, refer to http://www.darpa.mil/Programs/Contract_Management/Technology_Investment_Agreements.aspx.

4.4 Submission Dates and Times

4.4.1 Full Program

Full Program Proposal Abstract Submission Deadline

The full program abstract must be submitted to DARPA on or before 4:00 p.m., ET, September 22, 2014. Full program abstracts received after this time and date may not be reviewed.

Full Program Proposal Submission Deadline

The full program proposal must be submitted to DARPA on or before 4:00 p.m., ET, December 2, 2014, to be considered during the initial round of selection; however, proposals received after this deadline may be received and evaluated up to six months (180 days) from date of posting on FedBizOpps. Full proposals submitted after the due date specified in the BAA or due date otherwise specified by DARPA after review of proposal abstracts may be selected.

Fundamental vs. restricted research

“Fundamental research means basic and applied research in science and engineering, the results of which ordinarily are published and shared broadly within the scientific community, as distinguished from proprietary research and from Industrial development, design, production, and product utilization, the results of which ordinarily are restricted for proprietary or national security reason.”

(National Security Decision Directive (NSDD) 189, National Policy on the Transfer of Scientific, Technical, and Engineering Information)

The “Fun” in Fundamental

BAA 11.72 II. AWARD INFORMATION

As of the date of publication of this BAA, **DARPA expects that program goals for this BAA may be met by proposers intending to perform 'fundamental research,' i.e., basic or applied research performed on campus in science and engineering, the results of which ordinarily are published and shared broadly within the scientific community, as distinguished from proprietary research and from industrial development, design, production, and product utilization the results of which ordinarily are restricted for proprietary or national security reasons. Notwithstanding this statement of expectation, DARPA is not prohibited from considering and selecting research proposals that, while perhaps not qualifying as 'fundamental research' under the foregoing definition, still meet the BAA criteria for submissions.** If proposals are selected for award that offer other than a fundamental research solution, then DARPA will either work with the proposer to modify the proposed statement of work to bring the research back into line with fundamental research or else the proposer will agree to restrictions in order to receive an award[...] In all cases, the DARPA contracting officer shall have sole discretion to select award instrument type and to negotiate all instrument provisions with selectees.

Curbing your enthusiasm

Same program area from the previous slide; however, this BAA was for the next phase of the program.

BAA 13.43 II. AWARD INFORMATION

As of the date of publication of this BAA, the Government expects that program goals as described herein either cannot be met by proposers intending to perform fundamental research or the proposed research is anticipated to present a high likelihood of disclosing performance characteristics of military systems or manufacturing technologies that are unique and critical to defense. Therefore, the Government anticipates restrictions on the resultant research that will require the contractor to seek DARPA permission before publishing any information or results relative to the program. Proposers should indicate in their proposal whether they believe the scope of the research included in their proposal is fundamental or not. While proposers should clearly explain the intended results of their research, the Government shall have sole discretion to select award instrument type and to negotiate all instrument terms and conditions with selectees. Appropriate clauses will be included in resultant awards for non-fundamental research to prescribe publication requirements and other restrictions, as appropriate.

Controlled Unclassified Information

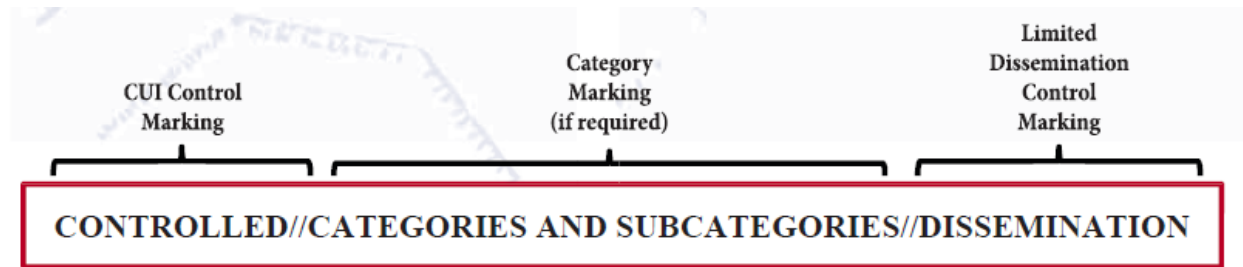
- Controlled Unclassified Information (CUI) is federal non-classified information the U.S. Government creates or possesses, or that a non-federal entity receives, possesses, or creates for, or on behalf of, the U.S. Government, that requires information security controls to safeguard or disseminate.
- These controls must be compliant with the federal regulations specified in [32 CFR Part 2002](#) and [NIST SP 800-171r1](#)

CUI basics

- Different CUI Categories (National Archives [CUI registry](#))
- Information Security Plans to control physical and electronic environments to ensure that only authorized users may access/handle the information
- May not apply to all aspects/information generated in a project

CUI marking

- Specific marking requirements are required for consistency
 - Top of each page (Do not place marking on outside of packaging/envelops)



- All forms of written communication (including e-mails)

Finding funding

The image displays three overlapping screenshots of government funding websites:

- Grants.gov:** The top screenshot shows the Grants.gov homepage with a search bar, navigation menu (HOME, LEARN GRANTS, SEARCH GRANTS, APPLICANTS, GRANTORS, SYSTEM-TO-SYSTEM, FORMS, OUTREACH, SUPPORT), and a large banner for "Apply for a Grant".
- FedBizOpps.gov:** The middle screenshot shows the FedBizOpps.gov homepage with a search bar, navigation menu (Home, Getting Started, General Info, Opportunities, Agencies, Privacy), and a search results section for "36,100* active federal opportunities".
- DARPA:** The bottom screenshot shows the DARPA website with a navigation menu (EXPLORE TOPICS, Opportunities, Contract Management, For Industry, For Small Businesses, For Universities, For Government and Military, Employment at DARPA, Visitor Information), a large banner for "CREATING BREAKTHROUGH TECHNOLOGIES FOR NATIONAL SECURITY", and a section for "DARPA NEWS" featuring three articles: "BRIDGING THE BIO-ELECTRONIC DIVIDE", "COUNTING PHOTONS...HOW LOW CAN YOU GO?", and "PUSHING CHIP TECH FOR ELECTROMAGNETIC BATTLEFIELDS".

Typical proposal process

Proposers' Day

- Go to DARPA to hear about program

Abstract/Preproposal

- “Whitepaper” + Quad Chart + Cost Estimate
- Submit Preproposal through DARPA BAA Site

Full Proposal

- Technical + Cost proposals

Typical proposal abstract materials

Submitted via DARPA BAA site or hardcopy/CD-ROM

- Abstract
 - Page limited
 - Cover Sheet, Goals & Impact, Technical Plan, Management & Capabilities, Cost & Schedule
- Executive Summary Slides (as PPT)
 - Will provide template

Typical full proposal materials

- Executive Summary Slides (as PPT)
 - Template Provided
- Technical Volume as PDF
 - Will outline the content requirements in BAA
- Cost Volume as PDF/MS Excel
 - Will outline the content requirements in BAA

Vol I: Technical Proposal

- Executive Summary
- Goals and Impact
- Technical and Management Plan
- Statement of Work
- Milestones and Deliverables

SOW set-up

	Phase 1 (12 mo.)	Phase 2 (12 mo.)	Total
TA 1: Knee Joint			
Prime			\$ -
Sub #1			\$ -
TA 1 Total	\$ -	\$ -	\$ -
TA 2: Ankle Joint			
Prime			\$ -
Sub #2			\$ -
TA 2 Total	\$ -	\$ -	\$ -
TA 3: Mobility			
Prime			\$ -
Sub #3			\$ -
TA 3 Total	\$ -	\$ -	\$ -

SOW, milestones and deliverables

Project Work Description – Phase 1:

Task 1 Title and description

Sub-task 1.1 Title and description

Performance Metrics and Assessment

Sub-task 1.2 Title and description

Performance Metrics and Assessment

Milestones/Deliverables

Task 2 Title and description

Sub-task 2.1 Title and description

Performance Metrics and Assessment

Milestones/Deliverables

Task 3 Title and description

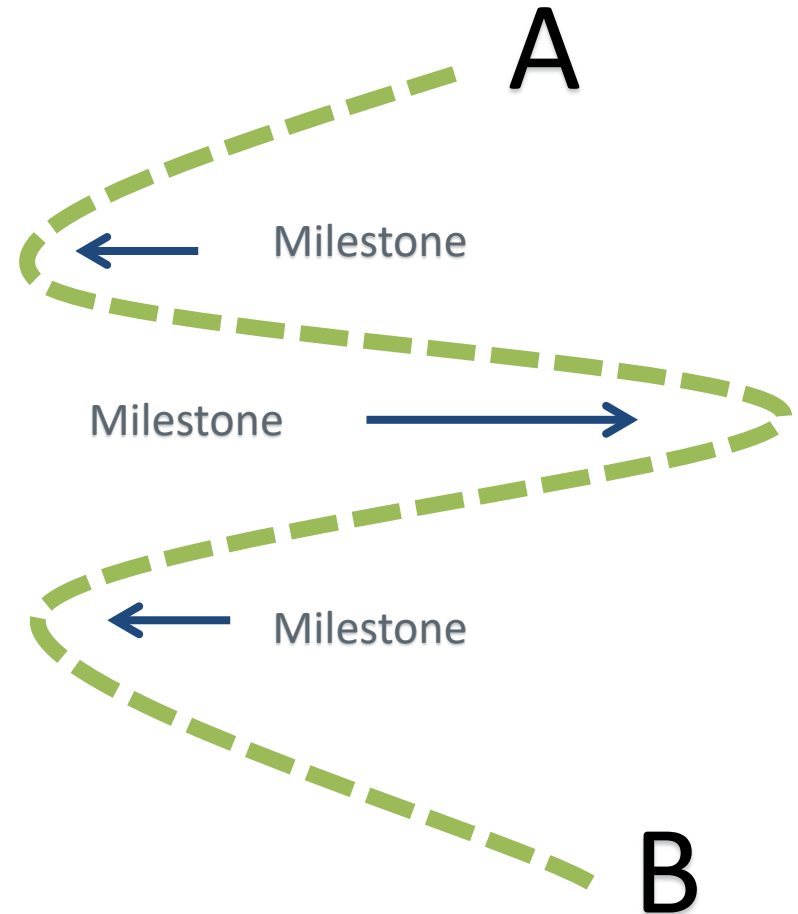
Sub-task 3.1 Title and description

Performance Metrics and Assessment

Sub-task 3.2 Title and description

Performance Metrics and Assessment

Milestones/Deliverables



SOW, milestones and deliverables

Project Work Description – Phase 1:

Task 1 Title and description

Sub-task 1.1 Title and description

Performance Metrics & Assessment

Sub-task 1.2 Title and description

Performance Metrics & Assessment

Milestone/Deliverable

Task 2 Title and description

Sub-task 2.1 Title and description

Performance Metrics & Assessment

Milestone/Deliverable

Task 3 Title and description

Sub-task 3.1 Title and description

Performance Metrics & Assessment

Sub-task 3.2 Title and description

Performance Metrics & Assessment

Milestone/Deliverable



Project Work Description – Phase 1:

Task 1 Knee Joint

Sub-task 1.1 Knee Robotics

Version 1.0 Built

Sub-task 1.2 Knee Power Supply

Off-board power supply fabricated

At the end of Phase 1, the knee joint will be assembled and powered. Demo knee joint.

Task 2 Ankle Joint

Sub-task 2.1 Ankle Stabilizer

Version 1.0 Built

At the end of Phase 1, the ankle joint will be stabilized without duct tape. Demo ankle joint.

Task 3 Mobility

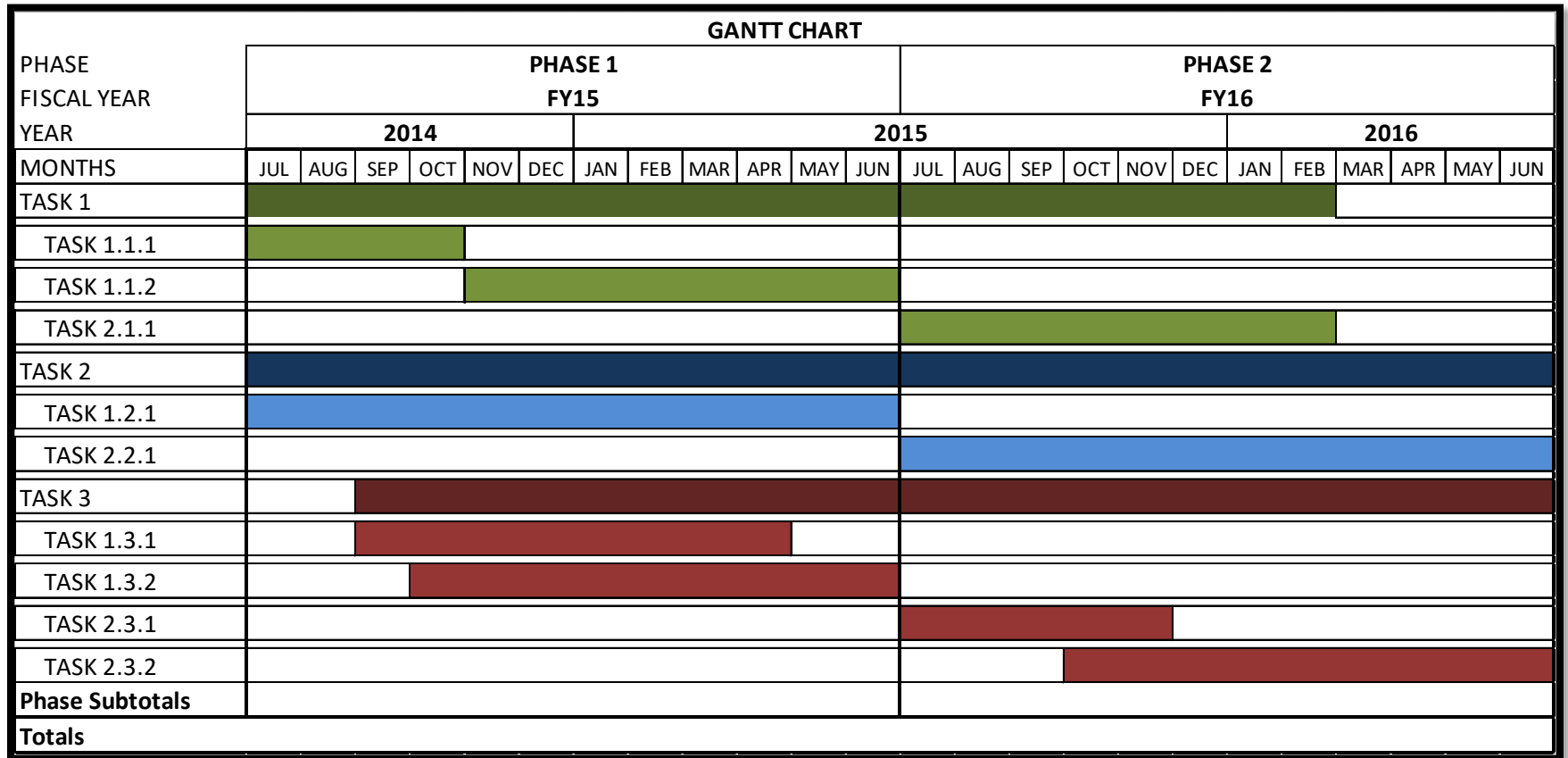
Sub-task 3.1 Functional Pants

Version 1.0 Knee/Ankle Integration

Sub-task 3.2 Off-board power supply integration

At the end of Phase 1, the ankle and knee joints will be fully functional in pants. Demo integration

Gantt chart



VOL II: Cost Proposal

a.k.a.

THE BUDGET

VOL II: Cost Proposal

Project Level

Project
Budget

Phase Level

Phase /
Period 1

Phase /
Period 2
etc.

Technical Area

Technical
Area 1

Technical
Area 2
etc.

Task Level

Task 1

Task 2

Task 3

Subtask Level

Subtask
1.1

Subtask
1.2

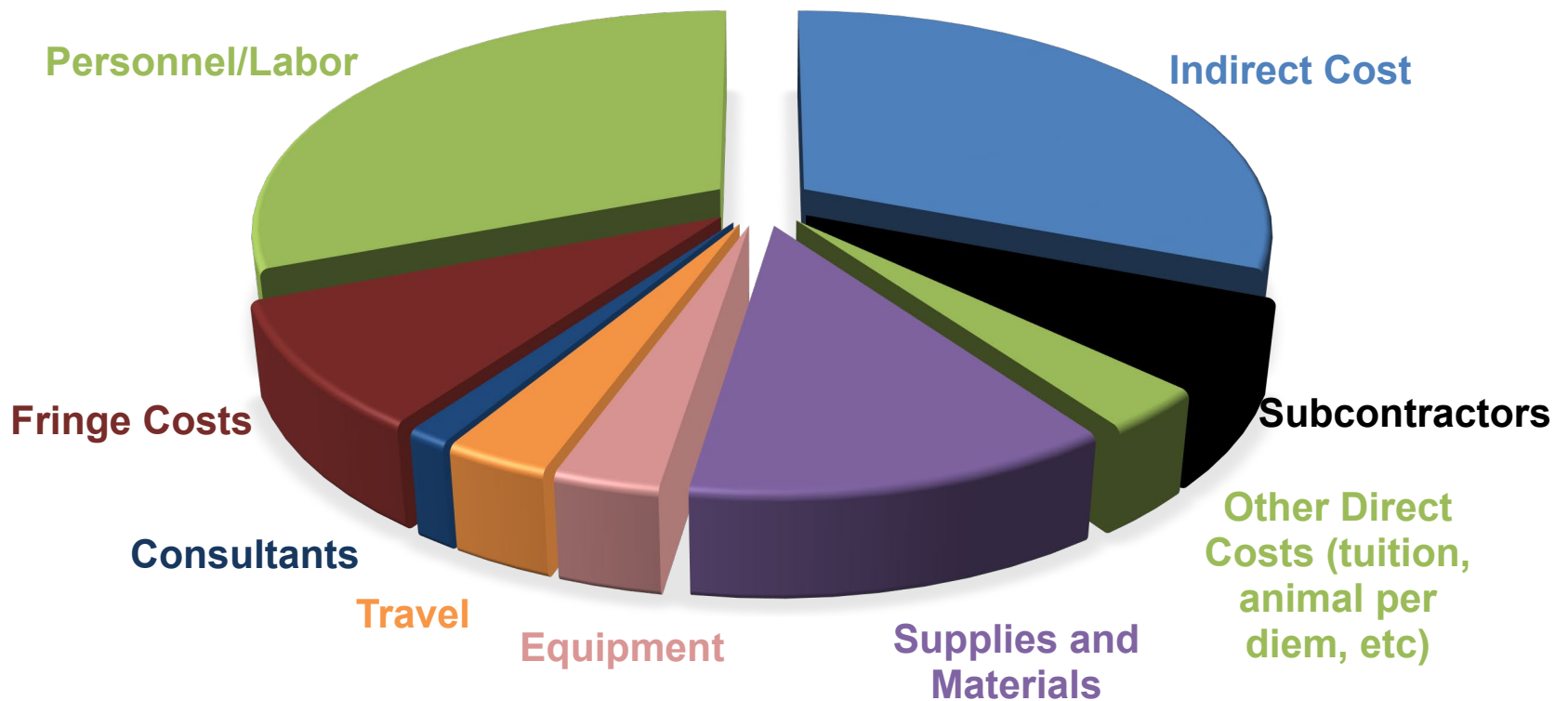
Subtask
2.1

Subtask
3.1

Subtask
3.2

VOL II: Cost Proposal Cont.

Detailed Cost Categories and Elements



VOL II: Cost Proposal cont.

Other Cost Proposal items:

- Travel may be required to be budgeted separately
- Program/administrative costs should be budgeted separately

Vol II: Cost Proposal cont.

Each Phase needs to be budgeted separately

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Title of Proposal						Task 1								
2	Name of Prime Institution														
3	Technical Area 1 - Phase 1														
4															
5															
6															
7	Item Name	Item Description	Proposal Reference (pg #)	Effort/ Unit Cost	Unit		Task 1.1	Total	Task 1.2	Total	Task 1.3	Total	Task 1.4	Total	Task
8	Summary						number	cost	number	cost	number	cost	number	cost	number
9		Personnel + Benefits				0.00	\$ -		0.00	\$ -	0.00	\$ -	0.00	\$ -	0.00
10		Supplies					\$ -			\$ -		\$ -		\$ -	
11		Equipment					\$ -			\$ -		\$ -		\$ -	
12		Patient/Animal Related					\$ -			\$ -		\$ -		\$ -	
13		Subcontractors					\$ -			\$ -		\$ -		\$ -	
14		Sub-Total: Direct Costs					\$ -			\$ -		\$ -		\$ -	
15		Less Exclusions:													
16		GSR fringe benefits													
17		Capital Equipment (unit Cost > \$5K)													
18		Subcontracts > \$25K													
19		Sub-Total: Exclusions					\$ -		\$ -		\$ -		\$ -		
20		Modified Total Direct Costs					\$ -		\$ -		\$ -		\$ -		
21		Sub-Total: Indirect Costs		0%	negotiated rate		\$ -		\$ -		\$ -		\$ -		
22		Total Costs					\$ -		\$ -		\$ -		\$ -		
23															
24	Personnel														
25	Person's Name	Title	Vol, pg #	\$ -		0.000	\$ -		0.000	\$ -	0.000	\$ -	0.000	\$ -	0.000
26	Person's Name	Title	Vol, pg #	\$ -		0.000	\$ -		0.000	\$ -	0.000	\$ -	0.000	\$ -	0.000
27		Personnel Total				0.000	\$ -		0.000	\$ -	0.000	\$ -	0.000	\$ -	0.000
28															
29	Benefits														
30	Person's Name	Title	N/A	0.00%			\$ -		\$ -		\$ -		\$ -		
31	Person's Name	Title	N/A	0.00%			\$ -		\$ -		\$ -		\$ -		
32		Benefits Total					\$ -		\$ -		\$ -		\$ -		
33															
34	Supplies	***must be broken out individually - see below													
35	Supply name	description	N/A	\$ -		0.00	\$ -		0.00	\$ -	0.00	\$ -	0.00	\$ -	0.00
36	Supply name	description	N/A	\$ -		0.00	\$ -		0.00	\$ -	0.00	\$ -	0.00	\$ -	0.00
37		Supplies Total					\$ -		\$ -		\$ -		\$ -		
38															
39	Equipment	***must provide supporting documentation (e.g., quote)													
40	Equipment name	description	Vol, pg #	\$ -		0.00	\$ -		0.00	\$ -	0.00	\$ -	0.00	\$ -	0.00
41	Equipment name	description	Vol, pg #	\$ -		0.00	\$ -		0.00	\$ -	0.00	\$ -	0.00	\$ -	0.00
42		Equipment Total					\$ -		\$ -		\$ -		\$ -		
43															
44	Patient/Animal Related														
45	Name	description	N/A	\$ -		0.00	\$ -		0.00	\$ -	0.00	\$ -	0.00	\$ -	0.00
46	Name	description	N/A	\$ -		0.00	\$ -		0.00	\$ -	0.00	\$ -	0.00	\$ -	0.00
47		Patient Related Total					\$ -		\$ -		\$ -		\$ -		
48															
49	Subcontractors														
50	Subcontract	Name	Vol, pg #	\$ -	per phase	0.00	\$ -		0.00	\$ -	0.00	\$ -	0.00	\$ -	0.00
51	Subcontract	Name	Vol, pg #	\$ -	per phase	0.00	\$ -		0.00	\$ -	0.00	\$ -	0.00	\$ -	0.00
52		Subcontractors Total					\$ -		\$ -		\$ -		\$ -		
53															
54															

Vol II: Cost Proposal cont.

Each Technical Area is summarized

	A	B	C	D	E	F	G	H	I	J
1		Title of Proposal								
2		Name of Prime Institution								
3		Summary by Technical Area 1								
4										
5		<i>All cells are automatically calculated.</i>			Task	Task	Task	Travel and		
6					1	2	3	Admin Costs		
7									Total	
8		Phase 1								
9			Personnel + Benefits	\$ -	\$ -	\$ -			\$ -	
10			Supplies	\$ -	\$ -	\$ -			\$ -	
11			Equipment	\$ -	\$ -	\$ -			\$ -	
12			Subcontractors	\$ -	\$ -	\$ -			\$ -	
13			Patient/Animal Related	\$ -	\$ -	\$ -			\$ -	
14			Sub-Total: Direct Costs	\$ -	\$ -	\$ -	\$ -		\$ -	
15			Modified Total Direct Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
16			Sub-Total: Indirect Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
17			Total Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
18										
19		Phase 2								
20			Personnel + Benefits	\$ -	\$ -	\$ -			\$ -	
21			Supplies	\$ -	\$ -	\$ -			\$ -	
22			Equipment	\$ -	\$ -	\$ -			\$ -	
23			Subcontractors	\$ -	\$ -	\$ -			\$ -	
24			Patient/Animal Related	\$ -	\$ -	\$ -			\$ -	
25			Sub-Total: Direct Costs	\$ -	\$ -	\$ -	\$ -		\$ -	
26			Modified Total Direct Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
27			Sub-Total: Indirect Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
28			Total Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
29										
30		All Phases								
31			Personnel + Benefits	\$ -	\$ -	\$ -			\$ -	
32			Supplies	\$ -	\$ -	\$ -			\$ -	
33			Equipment	\$ -	\$ -	\$ -			\$ -	
34			Subcontractors	\$ -	\$ -	\$ -			\$ -	
35			Patient/Animal Related	\$ -	\$ -	\$ -			\$ -	
36			Sub-Total: Direct Costs	\$ -	\$ -	\$ -	\$ -		\$ -	
37			Modified Total Direct Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
38			Sub-Total: Indirect Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
39			Total Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
40										
41										

Vol II: Cost Proposal cont.

Entire Project is summarized

	A	B	C	D	E	F	G	H
1	Cost Proposal Summary							
2								
3	Title	Title of Proposal						
4	Prime Institution	Name of Prime Institution						
5	Prime PI	list prime PI name and email address						
6	Prime Co-PIs/Co-Is	list prime Co-PIs and Co-Is						
7	Sub-Contractor Institutions & Sub-PIs	list ALL subcontractor institutions and Sub-PIs						
8	Period of Performance (PoP) - Total Project	insert period of performance (e.g., 36 months) for total project						
9	Total Project Cost	\$	-					
10								
11								
12	Technical Area 1	Start Date (Months from Award)	Duration (Months)	Cost				
13	Phase 1	(e.g., Month 1)	(e.g., 18 mo)	\$ -	<i>All cells are automatically calculated.</i>			
14	Phase 2	(e.g., Month 18)	(e.g., 18 mo)	\$ -				
15			TA 1 Total	\$ -				
16								
17	Technical Area 2							
18	Phase 1	(e.g., Month 6)	(e.g., 18 mo)	\$ -				
19	Phase 2	(e.g., Month 18)	(e.g., 18 mo)	\$ -				
20			TA 2 Total	\$ -				
21	Technical Area 3							
22	Phase 1	(e.g., Month 12)	(e.g., 18 mo)	\$ -				
23	Phase 2	(e.g., Month 18)	(e.g., 18 mo)	\$ -				
24			TA 3 Total	\$ -				
25								
26								
27	Total Prime	\$	-					
28	Total Subcontractor	\$	-					
29								
30								
31	Personnel + Benefits	\$	-					
32	Supplies	\$	-					
33	Equipment	\$	-					
34	Subcontractors	\$	-					
35	Patient/Animal Related	\$	-					
36	Sub-Total: Direct Costs	\$	-					
37	Modified Total Direct Costs	\$	-					
38	Sub-Total: Indirect Costs	\$	-					

Breaking it Down

ii. Cost Summary: Provide a single-page summary broken down by Government fiscal year (GFY) listing cost totals for labor, materials, other direct charges (ODCs), indirect costs (overhead, fringe, general and administrative (G&A)), and any proposed fee for the project. Include costs for each task in each year of the project by prime and major subcontractors, total cost and proposed cost share, if applicable.

iii. Cost Details: For each task, provide the following cost details by GFY. Provide a summary of the total costs per month for each proposed cost element. Include supporting documentation describing the method used to estimate costs. Identify the source, nature and amount of any proposed cost sharing.

(1) Direct Labor: Provide labor categories, rates and hours.

(2) Indirect Costs: Identify all indirect cost rates (Fringe Benefits, Overhead, G&A, Facilities Cost of Money, etc.) and the basis for each.

Supporting Documentation

- Bill of Materials
- Salary Confirmations
- F&A Rate Agreement
- Equipment/Other Quotes

Bill of Materials			
Task 1			
Sub Task 1.1			
Supply	Unit Cost	Units	Cost
Supply A	\$ 10.95	10	\$ 109.50
Supply B	\$ 100.12	4	\$ 400.48
Supply C	\$ 20.11	5	\$ 100.55
Supply D	\$ 30.95	2	\$ 61.90
Supply E	\$ 4.99	3	\$ 14.97
Supply F	\$ 0.02	1	\$ 0.02
Subtotal Sub Task 1.1			\$ 687.42
Sub Task 1.2			
Supply	Unit Cost	Units	Cost
Supply A	\$ 234.12	3	\$ 702.36
Supply B	\$ 0.05	25	\$ 1.25
Supply C	\$ 1,000.00	3	\$ 3,000.00
Supply D	\$ 0.25	31	\$ 7.75
Supply E	\$ 15.00	1	\$ 15.00
Supply F	\$ 56.00	3	\$ 168.00
Subtotal Sub Task 1.2			\$ 3,894.36
Total Task 1			\$ 4,581.78

Supporting documentation

- Include screen-prints details of the trip
 - Mileage, taxi fares, hotel, registration, etc

The screenshot displays a travel booking interface with the following sections:

- TAXI FARE FINDER**: A header for the taxi fare calculator.
- BALTIMORE, MD**: Location selection for the taxi fare.
- Estimated Fare**: Shows a fare of **\$39.35** for a trip from 600 N Wolfe St, Baltimore, MD to BWI, Baltimore, MD. It also lists other possible fares and a cost with traffic.
- Map**: A Google Map showing the route from Baltimore to BWI.
- Flight Search**: A section for selecting a departure to San Antonio on Saturday, October 22. It includes a search bar, filters for stops, airlines, and departure times, and a "Run this search" button.
- Hotel Search**: A section for selecting a hotel, showing a "Save \$209* on average" offer and a "Select" button.
- Flight Details**: A table showing flight options from Baltimore to San Antonio, including American Airlines, with a price of \$294.20.

Gantt chart 2.0

GANTT CHART																									
PHASE FISCAL YEAR YEAR	PHASE 1 FY15												PHASE 2 FY16												
	2014						2015										2016								
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	
MONTHS																									
TASK 1	\$109,345												\$252,000												
TASK 1.1.1	\$24,750																								
TASK 1.1.2							\$84,595																		
TASK 2.1.1													\$252,000												
TASK 2	\$159,175												\$181,609												
TASK 1.2.1	\$159,175																								
TASK 2.2.1													\$181,609												
TASK 3							\$52,910						\$139,450												
TASK 1.3.1							\$30,000																		
TASK 1.3.2							\$22,910																		
TASK 2.3.1													\$121,550												
TASK 2.3.2																			\$17,900						
Phase Subtotals	\$321,430												\$573,059												
Totals													\$894,489												

Vol II: Cost proposal & subs

- Flow-down of BAA proposal requirements
- Subrecipient vs Vendor in Contracts
 - Subrecipient = Subcontractor**
 - Vendor = Subcontractor**
 - Small business subcontracting plan may be required at \$700K+ (see FAR 52.219-9)
- Proprietary Subcontractor Proposal Documentation may be submitted directly to DARPA

AOR involvement

Authorized Organizational Representative:

- Sign-off on proposal
- Official transmittal letter
- List them as the organizational contact on Vol I and Vol II cover pages

Submitting your application

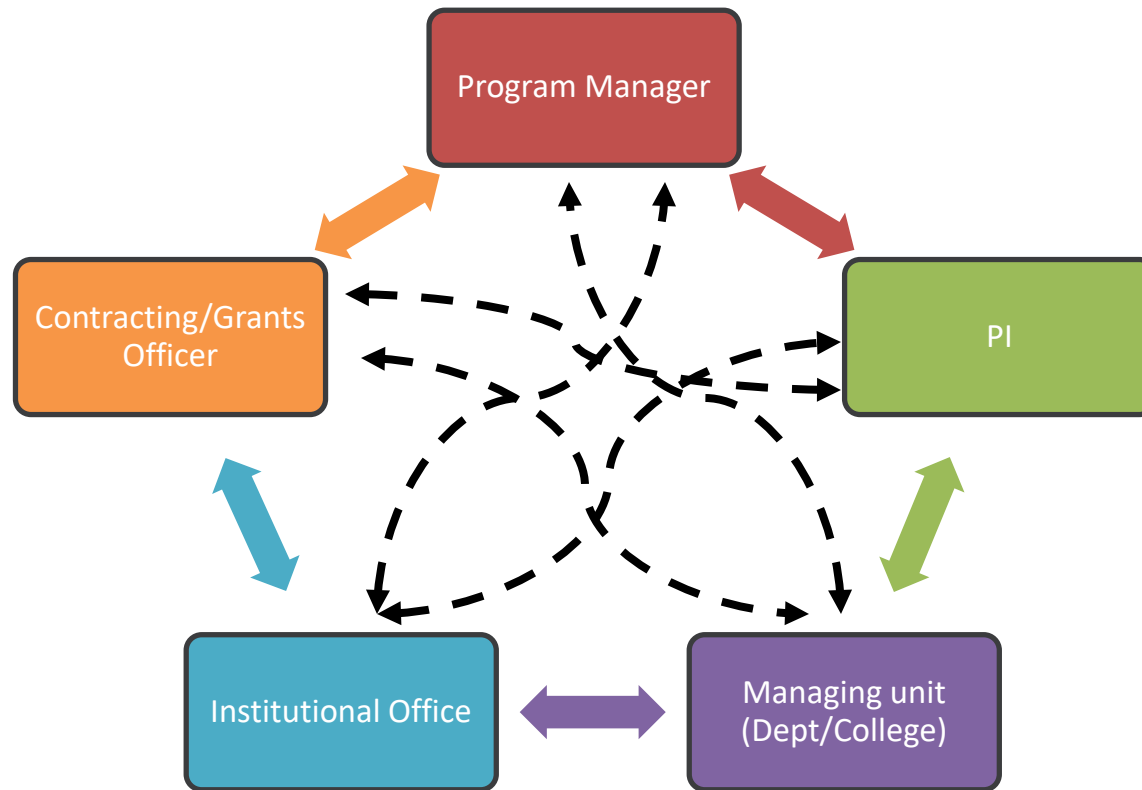
- Contracts and other non-assistance mechanisms:
 - DARPA BAA Login Site (zip files) – unclassified only
 - Hard Copy & CD-ROM – unclassified/classified
 - Submitters will still need to register organization in the DARPA BAA Submission Portal
- For proposers requesting Grants and Cooperative Agreements:
 - Grants.gov
 - Vol. I & Vol. II only, no other Grants.gov forms are required
 - Submitters will still need to register organization in the DARPA BAA Submission Portal
 - Hard Copy & CD-ROM
 - Still need to complete SF424 R&R form
 - Submitters will still need to register organization in the DARPA BAA Submission Portal

Pre-award review

- Solicitations through BAA
- Proposal Elements: Technical and Cost
- Subrecipients provide same level of detail
- Communication between key players
- Check BAA for research type

Award negotiation

Challenge: keeping everyone in the loop



Negotiating the SOW and budget

GANTT CHART																										
PHASE FISCAL YEAR YEAR	PHASE 1 FY15												PHASE 2 FY16													
	2014						2015										2016									
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN		
TASK 1	\$109,345												\$252,000													
TASK 1.1.1	\$24,750																									
TASK 1.1.2							\$84,595																			
TASK 2.1.1													\$252,000													
TASK 2	\$159,175												\$181,609													
TASK 1.2.1	\$159,175																									
TASK 2.2.1													\$181,609													
TASK 3			\$52,910										\$192,360													
TASK 2.3.1			\$30,000																							
TASK 2.3.2			\$22,910																							
TASK 2.3.3													\$121,550													
TASK 2.3.4																	\$17,900									
Phase Subtotals	\$321,430												\$573,059													
Totals	\$894,489																									

Award administration

Administration of awards might be through agencies other than DARPA

- Army Research Office
- Office of Naval Research
- Department of the Interior
- Space and Naval Warfare Systems Command

Terms & conditions

- Grants and Cooperative Agreements: Basis is 2 CFR 200
 - Implementation of Uniform Guidance will depend on administering agency terms and conditions.
- Contracts: FAR Part 52 & DFARS Part 252

DoD R&D General Terms and Conditions SEPTEMBER 2017

Preamble

Introduction

This award is subject to the following Department of Defense (DoD) Research and Development (R&D) General Terms and Conditions. These general terms and conditions implement Office of Management and Budget (OMB) guidance, "Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards," published in the Code of Federal Regulations (CFR) at 2 CFR part 200 and implemented by the DoD at 2 CFR part 1103, "Interim Grants and Cooperative Agreements Implementation of Guidance in 2 CFR part 200" (79 FR 76047, December 19, 2014).

ONR Addendum to the DoD R&D General Terms and Conditions and ONR Programmatic Requirements September 2017

This award is subject to the Department of Defense (DoD) Research and Development (R&D) General Terms and Conditions. This document is an element of those general terms and conditions. The first portion of this document is the Office of Naval Research (ONR) Addendum to DoD R&D General Terms and Conditions, which provides additional content relevant to ONR.

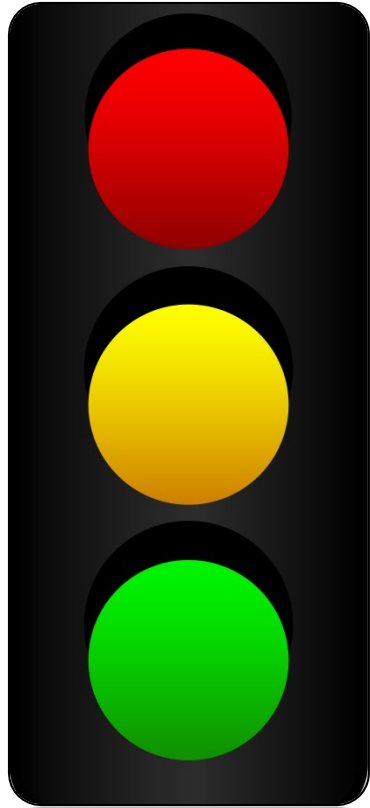
Types of agreement/contract clauses

- Clauses Incorporated by Full Text
 - Key Personnel
 - Agency Contacts
 - Reporting Requirements
 - Report Distribution Contacts
 - WAWF instructions
 - Other Award-Specific Terms & Conditions
- Clauses Incorporated by Reference

Clauses incorporated by reference

CLAUSES INCORPORATED BY REFERENCE			52.227-2	Notice And Assistance Regarding Patent And Copyright Infringement	DEC 2002
			52.227-11	Patent Rights--Ownership By The Contractor	
			52.228-7	Insurance--Liability To Third Persons	
252.242-7005	Contractor Business Systems	FEB 2012	252.232-7003	Electronic Submission of Payment Requests and Receiving Reports	JUN 2012
252.242-7006	Accounting System Administration	FEB 2012	252.232-7010	Levies on Contract Payments	DEC 2006
252.243-7002	Requests for Equitable Adjustment	DEC 2012	252.235-7002	Animal Welfare	DEC 2011
252.244-7000	Subcontracts for Commercial Items and Commercial Components (DoD Contracts)	JUN 2012	252.235-7011	Final Scientific or Technical Report	NOV 2004
			252.242-7004	Material Management And Accounting System	MAY 2011
252.245-7001	Tagging, Labeling, and Marking of Government-Furnished Property	APR 2012	252.242-7005	Contractor Business Systems	FEB 2012
			252.242-7006	Accounting System Administration	FEB 2012
			252.243-7002	Requests for Equitable Adjustment	DEC 2012
			252.244-7000	Subcontracts for Commercial Items and Commercial Components (DoD Contracts)	JUN 2012
			252.245-7001	Tagging, Labeling, and Marking of Government-Furnished Property	APR 2012
			252.245-7002	Reporting Loss of Government Property	APR 2012
			252.245-7003	Contractor Property Management System Administration	APR 2012
			252.245-7004	Reporting, Reutilization, and Disposal	APR 2012
			252.247-7023	Transportation of Supplies by Sea	MAY 2002
			252.247-7024	Notification Of Transportation Of Supplies By Sea	MAR 2000
52.204-7	Central Contractor Registration	DEC 2012	52.245-7004	Contractor Registration Alternate A	SEP 2007
52.204-10	Reporting Executive Compensation and First-Tier Subcontract Awards	AUG 2012	52.245-7005	Contractor Registration Alternate B	SEP 2007
52.209-6	Protecting the Government's Interest When Subcontracting With Contractors Debarred, Suspended, or Proposed for Debarment	DEC 2010	52.245-7006	Contractor Registration Alternate C	SEP 2007
52.209-9	Updates of Publicly Available Information Regarding Responsibility Matters	FEB 2012	52.245-7007	Contractor Registration Alternate D	SEP 2007
52.215-2 Alt II	Audit and Records--Negotiation (Mar 2009) - Alternate II	APR 1998	52.245-7008	Contractor Registration Alternate E	SEP 2007
52.215-8	Order of Precedence--Uniform Contract Format	OCT 1997	52.245-7009	Contractor Registration Alternate F	SEP 2007
52.215-10	Price Reduction for Defective Certified Cost or Pricing Data	AUG 2011	52.245-7010	Contractor Registration Alternate G	SEP 2007
52.215-12	Subcontractor Certified Cost or Pricing Data	OCT 2010	52.245-7011	Contractor Registration Alternate H	SEP 2007
52.215-14	Integrity of Unit Prices	OCT 2010	52.245-7012	Contractor Registration Alternate I	SEP 2007
52.215-19	Notification of Ownership Changes	OCT 2010	52.245-7013	Contractor Registration Alternate J	SEP 2007
52.215-21	Requirements for Certified Cost or Pricing Data or Information Other Than Certified Cost or Pricing Data--Modifications	OCT 2010	52.245-7014	Contractor Registration Alternate K	SEP 2007
52.215-23 Alt I	Limitations on Pass-Through Charges	OCT 2010	52.245-7015	Contractor Registration Alternate L	SEP 2007
52.216-11 Alt I	Cost Contract--No Fee (Apr 1984) Alternate I	APR 1984	52.245-7016	Contractor Registration Alternate M	SEP 2007
52.216-15	Predetermined Indirect Cost Rates	APR 1984	52.245-7017	Contractor Registration Alternate N	SEP 2007
52.219-8	Utilization of Small Business Concerns	JAN 2009	52.245-7018	Contractor Registration Alternate O	SEP 2007
52.219-9	Small Business Subcontracting Plan	JAN 2009	52.245-7019	Contractor Registration Alternate P	SEP 2007
52.219-16	Liquidated Damages-Subcontracting Plan	JAN 2009	52.245-7020	Contractor Registration Alternate Q	SEP 2007
52.219-25	Small Disadvantaged Business Participation Program--Disadvantaged Status and Reporting	DEC 2010	52.245-7021	Contractor Registration Alternate R	SEP 2007
52.222-3	Convict Labor	JUN 2003	52.245-7022	Contractor Registration Alternate S	SEP 2007
52.222-21	Prohibition Of Segregated Facilities	FEB 1999	52.245-7023	Contractor Registration Alternate T	SEP 2007
52.222-26	Equal Opportunity	MAR 2007	52.245-7024	Contractor Registration Alternate U	SEP 2007
52.222-35	Equal Opportunity for Veterans	SEP 2010	52.245-7025	Contractor Registration Alternate V	SEP 2007
52.222-36	Affirmative Action For Workers With Disabilities	OCT 2010	52.245-7026	Contractor Registration Alternate W	SEP 2007
52.222-37	Employment Reports on Veterans	SEP 2010	52.245-7027	Contractor Registration Alternate X	SEP 2007
52.222-50	Combating Trafficking in Persons	FEB 2009	52.245-7028	Contractor Registration Alternate Y	SEP 2007
52.223-18	Encouraging Contractor Policies To Ban Text Messaging While Driving	AUG 2011	52.245-7029	Contractor Registration Alternate Z	SEP 2007
52.225-13	Restrictions on Certain Foreign Purchases	JUN 2002	52.245-7030	Contractor Registration Alternate AA	SEP 2007
52.227-1 Alt I	Authorization And Consent (Dec 2007) - Alternate I	APR 1984	52.245-7031	Contractor Registration Alternate AB	SEP 2007
			52.227-7037	Validation of Restrictive Markings on Technical Data	JUN 2012
			52.227-7039	Patents--Reporting Of Subject Inventions	APR 1990

Animal & human subjects research



LOCAL IRB and IACUC approval



**Admin. Agency IRB and
IACUC approval**



DARPA Notification/Approval

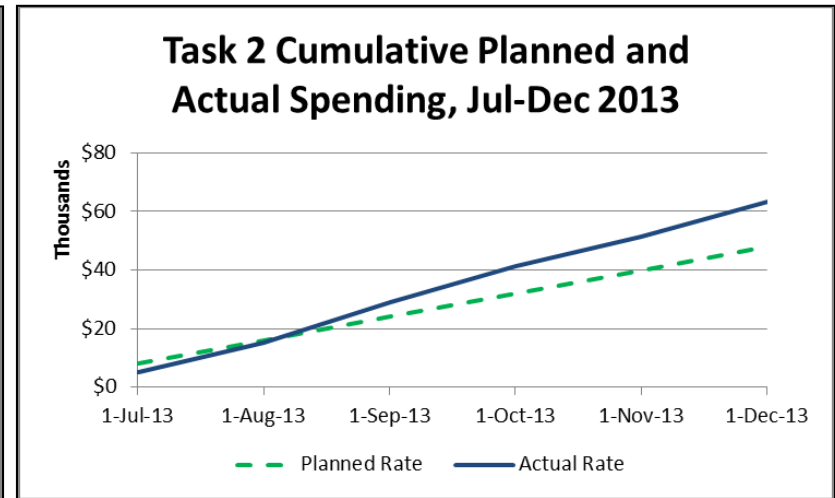
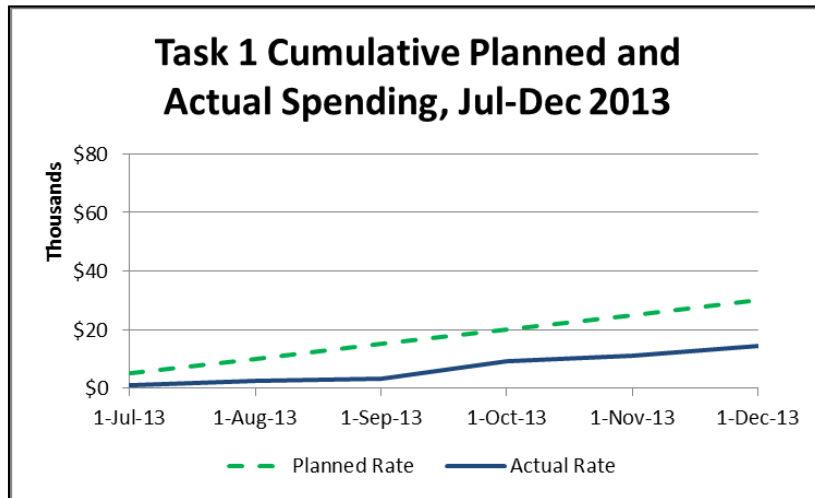
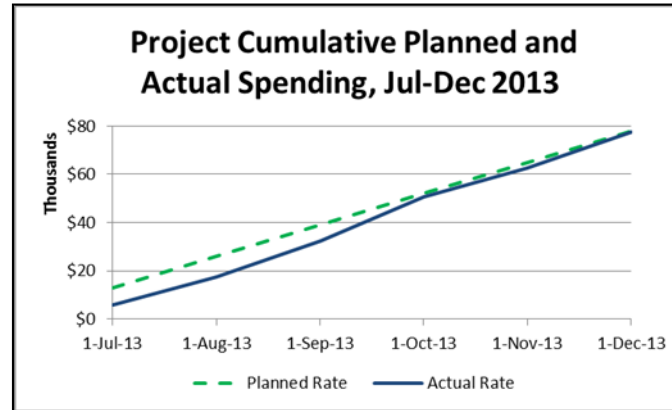


Commence Work

How pre-award affects award set-up

- Do what is necessary to fulfill reporting and invoicing requirements
- Interim financial reporting and invoicing detail may vary
- Tracking expenses by task provides detail

Tracking by task



Monthly reporting

Reporting requirements vary by award and admin. agency

- Submission directly to PM and team

	Planned / Actual	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Totals through 12/31/2013
Technical Area 1	Planned	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 300,000
Technical Area 1	Actual	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Technical Area 2	Planned	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 450,000
Technical Area 2	Actual	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Technical Area 3	Planned	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 150,000
Technical Area 3	Actual	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Technical Area 4	Planned	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 360,000
Technical Area 4	Actual	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Spend Rate	Planned	\$ 210,000	\$ 210,000	\$ 210,000	\$ 210,000	\$ 210,000	\$ 210,000	\$ 1,260,000
Spend Rate	Actual	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Value	Planned	\$ 1,260,000	\$ 1,050,000	\$ 840,000	\$ 630,000	\$ 420,000	\$ 210,000	
Total Value	Actual	\$ 1,260,000	\$ 1,260,000	\$ 1,260,000	\$ 1,260,000	\$ 1,260,000	\$ 1,260,000	

Overarching challenges

- Not a common sponsor of research at educational institutions
- High-risk projects
- Task/Technical Area structure within Projects
- No guaranteed funds past the increment
- Communication, Reporting

Overarching challenges cont.

“IF YOU CAN’T PLAY IN OUR SANDBOX, THEN DON’T. WE WILL FIND SOMEONE WHO WILL.”

Dr. Geoffrey Ling, DARPA BTO Founding Director ¹



Questions?

Presenter contact information

Will Helmrath

Helmrath@utk.edu

Links

DARPA

<http://www.darpa.mil>

DARPA BAA Site

<http://baa.darpa.mil/>

FedBizOpps

<https://www.fbo.gov/>

Controlled Unclassified Information (CUI)

NIST SP 800-171 Revision 1

<https://www.archives.gov/cui>

Marking Handbook: <https://www.archives.gov/files/cui/20161206-cui-marking-handbook-v1-1.pdf>

Intro video: <https://www.youtube.com/watch?v=zA03yDsNxm0>

Terms & conditions resources

Research Terms and Conditions Prior Approval and Other Requirements Matrix

http://www.nsf.gov/bfa/dias/policy/fedrtc/priorapproval_oct08.pdf

Federal Acquisition Regulations

<http://www.acquisition.gov/far/>

DOD R&D General Terms and Conditions

<http://www.onr.navy.mil/Contracts-Grants/submit-proposal/grants-proposal/grants-terms-conditions.aspx>

Other resources

Contractor Employee Compensation Cap per Bipartisan Budget Act of 2013 (\$487K Compensation Cap for DOD, NASA and Coast Guard eff. 6/24/2014)

<https://www.whitehouse.gov/omb/procurement/cecp>

Understanding DARPA's Mission. DARPA Director Arati Prabhakar explains the Agency's unique mission, business model and role in the innovation ecosystem.

https://youtu.be/tAtuEjwqu_Q

References:

1. Article on DARPA Biotechnology Office: David Nather. *Inside the Pentagon's biotech strike force*. STAT. November 24, 2015.

<http://www.statnews.com/2015/11/24/darpa-biotech-infectious-disease/>

Technical Offices

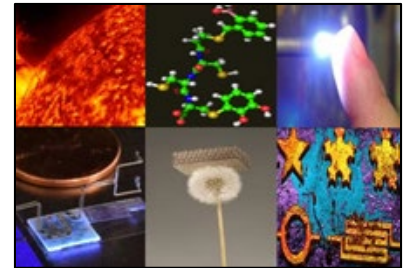


Biological Technologies Office (BTO)

DARPA's Biological Technologies Office develops capabilities that embrace the unique properties of biology—adaptation, replication, complexity—and use these features to revolutionize how the United States prepares and protects its citizens, Soldiers, Sailors, Airmen, and Marines from threats at home and abroad. Example new Department of Defense capabilities include the ability to counter novel bioterrorism, deploy innovative biological countermeasures to protect its forces, and accelerate warfighter readiness/overmatch for adversary threats.

Defense Sciences Office (DSO)

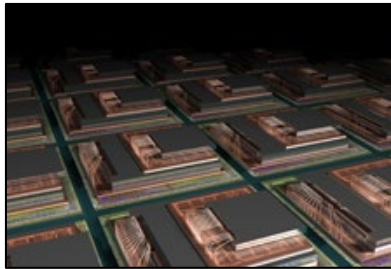
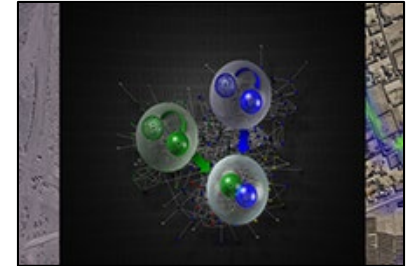
DARPA's Defense Sciences Office (DSO) identifies and pursues high-risk, high-payoff research initiatives across a broad spectrum of science and engineering disciplines and transforms them into important, new game-changing technologies for U.S. national security. Current DSO themes include frontiers in math, computation and design, limits of sensing and sensors, complex social systems, and anticipating surprise. DSO relies on the greater scientific research community to help identify and explore ideas that could potentially revolutionize the state-of-the-art.



Technical Offices

Information Innovation Office (I2O)

I2O explores game-changing technologies in the fields of information science and software to anticipate and create rapid shifts in the complex national security landscape. Conflict can occur in traditional domains such as land, sea, air, and space, & in emerging domains such as cyber & other types of irregular warfare. I2O's research portfolio is focused on anticipating new modes of warfare in these emerging areas and developing the concepts & tools necessary to provide decisive advantage for the U.S. & its allies.



Microsystems Technology Office (MTO)

Since its inception in 1991, DARPA'S Microsystems Technology Office (MTO) has helped create and prevent strategic surprise through investments in compact micro-electronic components such as microprocessors, Micro-electromechanical systems (MEMS), and photonic devices. MTO's revolutionary work applying advanced capabilities in areas such as wide-band gap materials, phased array radars, high-energy lasers and infrared imaging have helped the United States establish and maintain technological superiority for more than two decades.

Technical Offices



Strategic Technology Office (STO)

DARPA's Strategic Technology Office (STO) is focused on technologies that enable fighting as a network to increase military effectiveness, cost leverage, and adaptability.

Tactical Technology Office (TTO)

The mission of DARPA/TTO is to provide or prevent strategic and tactical surprise with very high-payoff, high-risk development and demonstration of revolutionary new platforms in Ground Systems, Maritime (Surface and Undersea) Systems, Air Systems, and Space Systems.



Special Projects & Tech Transition Offices

DARPA occasionally stands up temporary special projects offices focused on coordinating, developing and/or deploying advanced capabilities on an accelerated time scale. These efforts fall outside of DARPA's typical program structure and leverage the Agency's unique organization and skill sets to make rapid progress in technology areas that are critical to national security. DARPA currently operates one special projects office: the Aerospace Projects Office (APO)