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SBIR/STTR BASICS & PHASE I PROPOSAL PREPARATION



**Beyond Phase II
Mentor Protégé Training Week**

HYATT REGENCY CHICAGO
CHICAGO, IL
AUGUST 14-17, 2017



Presented by

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SBIR/STTR PHASE 1 PROPOSAL PREPARATION

TENTATIVE AGENDA

Registration, welcome, introductions
Brief Overview of the SBIR & STTR Programs
SBIR/STTR Phase 1 Proposal Strategy
Phase 1 Proposal Draft
Phase 1 Proposal Review & Debriefing

9:00 am-12:00 pm (ish), or 1:30 pm-4:30 pm (ish)

SBIR Defined

The Small Business Innovation Research Program (SBIR) provides

- over \$2 billion/year
- in non-recourse contracts and grants
- to small US-owned companies
- to develop new products and services
- that are based on innovative, unproven concepts and technologies.

SBIR PROGRAM OBJECTIVES

The purpose of the SBIR program as established by law is to:

- stimulate technological innovation in the private sector;
- strengthen the role of small businesses in meeting federal research and development needs;
- increase the commercial application of these research results; and
- encourage participation of socially and economically disadvantaged persons and women-owned small businesses.

--FY 14 NIST Solicitation

Firms with strong R&D capabilities...and with the ability to commercialize the results are encouraged to participate

--OSD FY10.3 solicitation

Projects should have...high potential commercial payback, and high-risk efforts

--NSF FY14.2 solicitation

THREE PHASES OF THE SBIR PROGRAM

Phase I. Evaluate scientific technical merit & feasibility of an idea.

- Up to \$150K
- 6-9 months

Phase II. Expand the results of, and further pursue the development of Phase I work.

- Main R&D activity
- May involve prototype creation & testing, clinical trials, etc.
- Up to \$1 million for 24 month period (varies by agency)

Phase III. “Commercialize” results of Phase II.

- No SBIR funds available for this phase
- May use private money, or non-SBIR federal funding
- DOD: “Transition: the innovation into hands of warfighter

*Note 1: Must enter program thru Phase I: Can't go directly to Phase II
(~~except pilot programs @ NIH, DOD, DoED~~)*

Note 2: Sole source procurement OK in Phase III

TWO TYPES OF SBIR AGENCIES

- Contract agencies
 - Have a specific problem or need
 - You must grasp & respond to that need
 - *“Only proposals submitted in response to topics in this solicitation will be considered” --DoD FY08.2*
 - *“Focus on what we asked for, not what you think we need”*
--Susan Nichols, DARPA SBIR Prog Mgr, 11/11
 - DoD is the ultimate Contract agency
- Grant agencies
 - Want to support “good ideas”
 - You must determine what they think “good” is
 - NSF is the ultimate Grant agency
- Caution: two grant agencies acts like a contract agency, & one contract agency acts like a grant agency!

SMALL COMPANY ELIGIBILITY FOR SBIR PARTICIPATION

- ≤500 employees, including affiliates
- Must be “for profit”
- ≥51% owned & controlled by US citizens or permanent resident aliens
 - Not more than 49% “entity owned”
- SBIR/STTR applicant firm can be owned/ controlled by one or more other small businesses, if parent company(ies):
 - ≤500 employees
 - 51+% owned by US citizens
 - Could have applicant w/as little as 25.5% US ownership!
 - 15% at all but NIH & NSF can go to firm majority owned by multiple VC/HF/PEFs if agency elects to do so
- Relationship between small business ownership and university/faculty members must be carefully managed
 - Caution: no consistent, firm rules here
 - Caution: what is allowed in Phase I may not be acceptable in Phase II
 - DOE: “none of the small business personnel can also be consultants or employees of a subcontractor (FY08 solicit)”

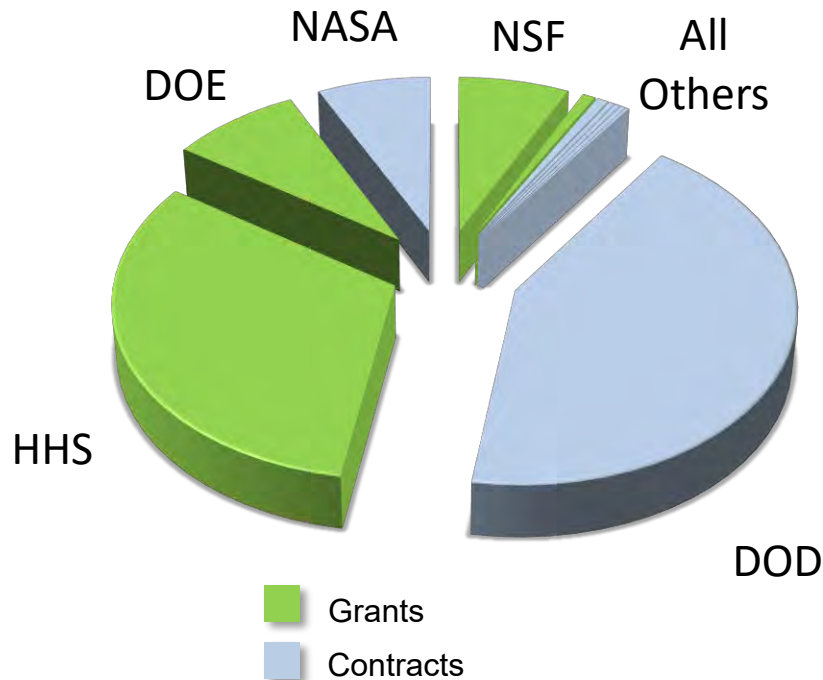
NOTE: Agencies getting tougher on faculty role

SUBCONTRACTOR ELIGIBILITY FOR SBIR

- May want to include consultants, subcontractors to round-out your team
 - Can subcontract $\leq 33\%$ of Phase I
 - Can subcontract $\leq 50\%$ of Phase II
 - For profit or non profit
 - Large or small
 - Individual consultant or company

However, all work must be done in the U.S.

SBIR/STTR Budgets by Agency, FY2015



~ \$2.5B in FY2015 across all agencies

Agencies with SBIR and STTR Programs	Budget
Department of Defense (DOD)	\$ 1.070 B
Department of Health and Human Services (HHS), including the National Institutes of Health (NIH)*	\$797.0 M
Department of Energy (DOE), including Advanced Research Projects Agency – Energy (ARPA-E)	\$206.1M
National Aeronautics and Space Administration (NASA)	\$ 180.1 M
National Science Foundation (NSF)	\$176.0 M
Agencies with SBIR Programs	Budget
U.S. Department of Agriculture (USDA)	\$20.3M
Department of Homeland Security (DHS): Science and Technology Directorate (S&T) and Domestic Nuclear Detection Office (DNDO)	\$17.7 M
Department of Commerce: National Oceanic and Atmospheric Administration (NOAA) and National Institute of Standards and Technology (NIST)*	\$8.4M
Department of Transportation (DOT)	\$7.9 M
Department of Education (ED)	\$7.5 M
Environmental Protection Agency (EPA)	\$4.2 M

*NIH also issues contracts

SBIR PHASE I SOLICITATION SCHEDULE

Agency	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
USDA							—	—	—			
DoC-NIST	—	—	—									
DoC-NOAA	—									—	—	—
DoD	—	—			—	—		—	—			—
DoEd-IES	—										—	—
DoEd-NIDRR												
DoE	—	—					—	—	—		—	—
DHHS-NIH/CDC Contracts							—	—	—			
DHHS NIH/CDC/FDA Grants	—	—	—	—	—	—	—	—	—	—	—	—
DHS/HSARPA	—											—
DOT										—	—	
EPA								—	—			
NASA		—	—									
NSF			—	—	—	—			—	—	—	—

Agency		Release Date	Closing Date
USDA		Jul 5, 2017	Oct 5, 2017
Dept of Commerce	NIST	Jan 10, 2017	Mar 30, 2017
	NOAA	Oct 20, 2016	Jan 25, 2017
Dept of Defense	FY17.3 FY18.1 FY18.2	Aug 25, 2017 Nov 29, 2017 Apr 20, 2018	Oct 25, 2017 Feb 7, 2018 Jun 20, 2018
DoEducation-IES		Nov 21, 2016	Jan 5, 2017
DoEducation-NIDRR		Moved to NIH	
DoEnergy	Letter of Intent due	July 17, 2017 Oct 30, 2017	Oct 16, 2017 Feb 6, 2018
DHHS-NIH/CDC	Cntrcts	Jul 18, 2017	Oct 20, 2017
DHHS NIH/CDC/FDA	Grants	June 5, 2017 ~Jan25, 2018	Sep 5, 2017 Jan 5, 2018 Apr 5, 2018
Dept of Homeland Security		Nov 30, 2016	Jan 18, 2017
Dept of Transportation		Oct 19, 2016	Dec 21, 2016
Environ Protect Agency		Aug 30, 2016	Oct 20, 2016
NASA		~Jan 15, 2018	~Apr 1, 2018
NSF		Mar 15, 2017 ~Sep 15, 2017	Jun 14, 2017 ~Dec 15, 2017

MISCELLANEOUS

- SBIR Principal Investigator Involvement
 - Role
 - Must be primarily employed by the company during the contract or grant period
 - Cannot work full time for another employer
 - » Most agencies say <50%
 - Other agency-specific requirements
 - DOE: 111 hours on the Phase 1 project (3+ hrs/wk minimum)
 - NSF: PI must devote >1 FTE month on Phase 1 SBIR & 2 FTE on STTR, not more than 19.6 hours/week employed elsewhere
 - Don't assume leniency on this requirement
 - Can you say “jail time” if you violate?

NIH Response to Faculty Questions re: PI

1. General PI/PD guidance
 - a. SBIR: PI must be >50% at small business (SBC) thruout project, not full time elsewhere
 - b. STTR: PI >50% at SBC or univ thruout project, not full time elsewhere
 - c. NIH Financial conflict of interest (COI) rules apply to PhII, not PhI

2. Guidelines re: faculty wearing 2 hats (PI of company and PI at Univ subcontract)
 - a. “they cannot do this, it is illegal”
 - b. PI on SBIR can only be compensated by SBC
 - c. Prof must get leave of absence or part time appt if PI on an SBIR
 - d. STTR: primary employment at SBC or RI, not both. “No double-dipping and listing staff in both sides of grant. PI can draw from one side only”

3. Potential COI of students working on SBIR subcontract in which student supervisor is PI or small business owner
 - a. Only PI has employment requirement on SBIR (& STTR)
 - b. All COI here handled by university (not NIH) rules
 - c. Students on SBIR/STTR can be employees of SBC

4. Potential COI of being paid by SBIR company & university (i.e., during the summer)
 - a. “Illegal. Someone works either for the company or the university...and cannot be listed on both sides and draw funds from both sides. Summer months are irrelevant.”
 - b. “Many univ profs put their student or post-doc as the PI on their SBC & serve as consultants or sub back to their univ lab. They will have to mitigate and manage the COI in Phase II.”

SMALL BUSINESS TECHNOLOGY TRANSFER PROGRAM (STTR)

- Modeled after SBIR
- Small company must team with Federal Lab, University or other non-profit R&D entity
- Only 5 Federal agencies participating
 - DOD
 - Not all components, but MORE than pre-2014
 - DHHS/NIH
 - DOE
 - NSF
 - NASA
- “Small” compared to SBIR

SBIR vs STTR

	SBIR	STTR
Phase I duration	6-9 months	6-12 months
Phase II duration	24 months	24 months
Number of participating agencies	11	5
FY18 budget as % of outside R&D budget	3.2%	0.45%
Min. Phase I small business participation	67.0%	40.0%
Max. Phase I subcontractor participation	33.0%	60.0%
Min. Phase I subcontractor participation	0.0%	30.0%
Principal Investigator employer	Small Bsns	SB or RI *
Reauthorized through	2022	2022

Big increases in STTR funding & favorable treatment make STTR worth considering!

* STTR: PI can be at Research Institution (except at NSF).

NIH & NSF also have STTR-specific requirements on level of PI participation

RESEARCH ENTITY ELIGIBILITY FOR STTR PARTICIPATION

- Located in U.S. and meets one of the following:
 - Non-profit research institution per Stevenson-Wydler Technology Innovation Act of 1980
 - Owned/operated exclusively for scientific or educational purposes
 - No profits benefiting private shareholders or an individual
 - Non-profit college or university
 - Public or private
 - Non-profit medical or surgical hospital
 - Federal Laboratory
 - Only if it is a Federally Funded Research and Development Center (FFRDC)
 - www.federallabs.org

NOTE: a single research entity must qualify as the partner on an STTR (& receive $\geq 30\%$ but $\leq 60\%$ of funds)

STTR PARTICIPATING AGENCIES & SOLICITATIONS

Agency		Solicitation Released	Proposals Due
Dept of Defense	FY17.C	08/25/17*	10/25/17
	FY18.A	11/29/17*	02/07/18
	FY18.B	04/20/18*	06/20/18
Dept of Energy		07/17/17*	10/16/17**
		10/30/17*	02/06/18**
DHHS/NIH		~06/05/17	09/05/17
		~01/25/18	01/05/18 04/05/18
NASA		~01/15/18	~04/01/18
NSF		03/15/17	06/14/17
		~09/15/17	~12/06/17
Dept of Homeland Security		n/a	n/a

* DOD & DOE pre-release topics ~30 days before solicitation release date

** DOE requires mandatory letter of intent

NOTE: DoD STTR solicitation topics are entirely different than its SBIR topics!

PRIMARY DIFFERENCE SBIR vs STTR

Mandatory participation by
nonprofit R&D Institution in STTR

Participation by nonprofit R&D institution is
allowed but optional in SBIR

Secondary difference: STTR is an R&D “collaboration”
between the small business & the nonprofit

FINDING SBIR & STTR RESEARCH TOPICS

- Topics appear in Agency's SBIR & STTR Solicitation
 - a “Request for Proposals”
 - Aka “Funding Opportunities Announcement” (FOA) at DOE & NIH
 - Broad Agency Announcement (BAA) at DoD
- Proposals must be responsive to a topic or they will be tossed out (no technical review)
- Find agencies' SBIR/STTR solicitations/FOAs on their websites

MAJOR PH1 CHANGES IN 2011 REAUTHORIZATION

1. Increased budget (SBIR incr 29%, STTR incr 50% between FY11 & FY17), but this will not mean more Ph1 awards
2. Ph1 awards may not be needed to get Ph2s at DoD, NIH, DoEd
 - Pilot, but lasts all 6 years
 - Implications
 - Agency decision
3. If start with Ph1 SBIR/STTR, you can switch in Ph2 to STTR/SBIR
 - Intentional strategy, maybe
 - Bail out on a bad relationship, maybe
4. Fraction of agency's SBIR budget can go to previously ineligible firms
 - Firms majority owned by multiple VC/HF/PEFs
 - 25% of NIH, NSF, DoE
 - 15% of all other agencies
 - Agencies have to elect to do this or not

The 2016 Reauthorization

- SBIR & STTR Reauthorized “as is” through FY22 (9/30/2022)
 - Including funding levels
- Pilot programs under 2011 Reauthorization will expire 9/30/2017 unless additional Congressional action to continue
 - Direct to Phase II
 - NIH & DARPA already ended their DTP2 programs mid FY17
 - 3% Admin Tax
 - Commercialization Pilot Program at all agencies except
 - DoD (now CRP)
 - NASA (unique interpretation of policy)
- Plan: get security of 5 year reauthorization in place, then pursue legislation to make important changes
- Kudos to Small Business Technology Council (www.sbtc.org)

SBIR/STTR PHASE I DRAFT PROPOSAL STRATEGY

1st in a 4 step process for developing a competitive SBIR/STTR proposal

1. Formulate your proposal strategy

2. Draft the proposal
3. Get a review of the draft before submitting it
4. Get a debriefing after winners are announced

Step #1:

FORMULATE A STRATEGY

Simple translation: to what you should
give serious thought before you start
writing the proposal

THE 1ST THING TO THINK ABOUT

- *FROM A MARKET OPPORTUNITY PERSPECTIVE, WHY SHOULD THIS PHASE 1 TECHNICAL FEASIBILITY PROJECT BE UNDERTAKEN?*

--Paraphrasing NSF STTR FY12 Solicitation

- The agency's variation on this:
 - *What is the Phase 3 pay off if we fund Phase 1 and your innovation proves to be feasible?*
- Increasingly, if the agency can't see a reasonable market opportunity in Phase 3, then they won't fund a Phase 1 feasibility study
 - *"A recent National Academy of Sciences study of the DOE SBIR program found that 1/3rd of DOE Phase II SBIR/STTR awardees stop working on their technology after their Phase II award because they discover the market for their technology is too small. We don't want companies making this discovery after they complete their Phase II grant, but before they submit their Phase I proposal." DOE FY13.2*

SOME OTHER THINGS TO THINK ABOUT

- What can we afford to propose in our Phase I feasibility study?
- One of the most common Phase I problems (& criticisms of Phase I reviewers):
“overly ambitious work plan”
- How avoid?
 - Put the budget “horse” before the technical scope “cart”
 - Assume agency’s max is \$150k on Phase I proposals
 - Set aside your 7% profit/fee
 - $\$150k - (150k/1.07) = \$9,800$
 - Set aside your indirect allocation
 - Depends on your company’s unique indirect rate
 - We’ll use NIH max of 40% of all direct costs for newcomers without a negotiated indirect rate
 - $\$150k - 9.8k = \$140.2k - (140.2k/1.4) = \$40.1k$
 - What’s left over is what you can spend on the Phase I feasibility study
 - $\$150k - 9.8k - 40.1k = \$100.1k$
 - Therefore, do not scope more than a \$100k R&D project, including any consultants & subcontractors, materials, project travel, and other “direct costs”

SOME OTHER THINGS TO THINK ABOUT

- If we win, does this project take us toward our corporate goals?
- Do we possess the technical competence?
 - also, do we look like we're competent
- Are there other places we can submit a related proposal?
 - try to get double/triple duty out of the basic proposal
 - caution: don't plan to submit identical proposal to other agency or component
 - caution: scrutiny under False Claims Act (ditto "embellishments" in proposal or reports)
 - Expect this to be area highlighted in "waste, fraud & abuse" witch hunt per the Reauthorization

MORE THINGS TO THINK ABOUT

- What's the agency's need/opportunity that you must focus on?

"...should be thinking re: Phase 3 from the time you write the Phase 1 proposal..."
John Williams, Navy SBIR Program Mgr, Natl Conf, 11/09

"...no warfighter can stab the enemy with a research paper" Ph2s: 12-18 months typically
Shawn Patterson, SOCOM SBIR Program Mgr, Natl Conf, 11/09

"DARPA is committed to the boldest, creative leaps..."

Susan Nichols, DARPA SBIR Program Mgr, Natl Conf, 11/11

- Where might you find Phase II matching funds & Phase III funding sources?
- What are the commercial applications, what's your competitive advantage, and how would you get to the market?

"Think as long, hard, deep and creatively about commercial applications as you do about the R&D effort"

-Roland Tibbitts, NSF (ret)

YET EVEN MORE THINGS TO THINK ABOUT

What agency(ies) should I submit to?

- Who has the topic I'm interested in?
- Do I like contract vs. grant agencies?
 - Contract: possible/probable Phase 3 customer
 - Grant: plan your R&D/product development years in advance
- Is there a particular agency with which I have an "in" or an affinity to?
- Will you require human or animal subjects in Phase 1? If so, caution re: DoD & NASA

FINDING AN AGENCY INTERESTED IN YOUR IDEAS, INNOVATIONS, TECHNOLOGIES

- Suggestion: check the websites

www.sbir.gov *and* _____??_____

for databases & search engines where you compare your keywords with topics in

- Currently open solicitations
 - Recently closed solicitations
-
- Why? Because you may not know what you do not know
(See next slide)

WHAT AGENCIES FUND TOPICS IN YOUR AREA OF INTEREST?

	Info Processing	Electronics	Materials	Mechanical Performance	Energy	Environ & Natural Resources	Life Sciences
DOD	•	•	•	•	•	•	•
DOE	•	•	•	•	•	•	•
NASA	•	•	•	•	•	•	•
NIH	•	•	•	•	•	•	•
NSF	•	•	•	•	•	•	•
DOT	•	•	•	•	•	•	•
EPA		•	•	•	•	•	•
ED	•	•	•	•	•	•	•
USDA	•	•	•	•	•	•	•
DOC	•	•	•	•	•	•	•
DHS HSARPA	•	•	•	•		•	•



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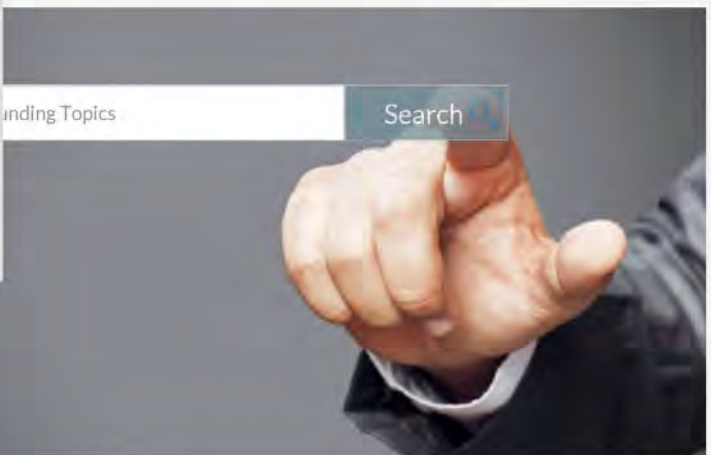
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- Phase I (289)
 - Phase II (123)
- Program

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If no search results for your keyword(s) were found, you are encouraged to review Agency omnibus solicitations for additional funding opportunities. Omnibus solicitations are structured to be broad, extensive Programmatic issuances with research areas related to the petitioning Agency and are not limited to predetermined Topics/Subtopics. If upon reviewing you have additional questions, you may consider reaching out to the respective Agency for clarification regarding acceptable proposals (<https://www.sbir.gov/agency-contacts>).

Displaying 1 - 10 of 315 results [Download](#)

Increasing the Utility of Forest-Grown Material

Release Date: 07-14-2016 Open Date: 07-14-2016 Due Date: 10-06-2016 Close Date: 10-06-2016

Research to improve the yield of lumber, pulp fiber and specialty chemicals from trees; utilizing a greater percentage of the tree through improved techniques of production, for the creation of new or improved reconstituted products; developing better met ...

SBIR Department of Agriculture

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- Phase I (8)
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Displaying 8 result(s)

Development of technologies and services that protect or enhance the environment while promoting economic development

Release Date: 07-14-2016 Open Date: 07-14-2016 Due Date: 10-06-2016 Close Date: 10-06-2016

solar energy (excluding biofuels). Department of Agriculture ...

SBIR Department of Agriculture

8.6: Rural and Community Development

Release Date: 07-14-2016 Open Date: 07-14-2016 Due Date: 10-06-2016 Close Date: 10-06-2016

Applications may be submitted for the development of new technology, or for the utilization of existing technology, that address important economic and social development issues or challenges in rural America.

SBIR Department of Agriculture

Natural Resources and Renewable Energy

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Greener Buildings



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The official link for this solicitation is: <https://www.fedconnect.net/fedconnect?abc=SOL-NC-16-00038&agency=EPA>

Agency:	Environmental Protection Agency
Branch:	n/a
Program / Phase / Year:	SBIR / Phase I / 2017
Solicitation:	SOL-NC-16-00038
Topic Number:	6

Release Date:	August 30, 2016
Open Date:	August 30, 2016
Application Due Date:	October 20, 2016
Close Date:	October 20, 2016 (closing in 38 days)

Description:

Interior Construction Materials

Floors, walls, and ceilings of homes are often made with materials that emit formaldehyde and other organic pollutants that are toxic to the people who live there. Developing non-toxic materials that can perform equally well in these interior construction applications will reduce the exposure to toxic off-gases by the residents. With this in mind, EPA is interested in supporting the development and commercialization of innovative technologies that address the following topic.

- **Topic Code 6A: Non-Toxic Interior Construction Materials for Homes:** Develop non-toxic alternatives for materials commonly used in the composition of floors, walls, and/or ceilings in homes. The technology must be affordable and at least as rugged and long-lasting as currently used materials.

Exterior Construction Materials

The exterior of buildings could be constructed with greener materials. They could include, for example, solar skins that produce energy for the building, cladding made with materials that are non-toxic, structural elements that weigh less and have less volume, materials that are easily re-cycled and re-used and do not leave parts that have to be sent to landfills or otherwise disposed, etc. As a result, there is a need for the development and commercialization of the following:

- **Topic Code 6B: Greener Exterior Construction Materials:** Develop construction materials for the exterior of buildings that are greener throughout their life cycle than currently used exterior construction materials. For example, the materials they are made of should be non-toxic, result from less polluting manufacturing processes than currently used, be easier to re-cycle and re-use than currently used materials. They should be stronger; more durable; last longer; weigh less; have lower volume; and cost less to produce, use in construction, re-cycle and re-use, and dispose than currently used materials. Comparison with currently-used materials

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 - National Institute of Standards and Technology (0)
 - National Oceanic and Atmospheric Administration (4)
- Phase
- Phase I (270)
 - Phase II (1)
- Program

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N162-081: Expeditionary Medical Refrigeration Unit

Release Date: 04-22-2016 Open Date: 05-23-2016 Due Date: 06-22-2016 Close Date: 06-22-2016

TECHNOLOGY AREA(S): Biomedical ACQUISITION PROGRAM: MARCORSSYSCOM, Program Manager Combat Support Systems, Battalion Aid Station (BAS) - AMAL 635 OBJECTIVE: The objective is to develop an innovative, energy efficient, small human transportable field refrigeration unit for field medical operations. The unit will be used to keep temperature sensitive human blood products, vaccines, an ...

SBIR Navy Department of Defense

N162-082: Pocket-sized Surface Flotation Device for Cold-Water Aviation Survival

Release Date: 04-22-2016 Open Date: 05-23-2016 Due Date: 06-22-2016 Close Date: 06-22-2016

TECHNOLOGY AREA(S): Air Platform, Human Systems ACQUISITION PROGRAM: PMA-261, H-53 Heavy Lift

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- [SBIR Events Calendar](#)
- [SBA FAST Awardees](#)
- [About SBIR Funding](#)
- [Federal Laboratories](#)
- [EPSCoR Program](#)

News Items

- [View Latest Solicitation News](#)
News Updated 11/03/12
- [DOE Releases FY-13 \(R2\) SBIR/STTR Topics](#)
Opens 11/26/12 Closes 2/5/13
- [New SBIR Policy Directive](#)
In effect on 11/13/12
- [NASA Opens 2 SBIR/STTR Solicitations](#)
Opens 9/17/12 Closes 11/29/12
- [NIH Opens PHS 2013-1 Contracts SBIR](#)
Opens 8/15/12 Closes 11/13/12

Search Services

- [Open SBIR/STTR Solicitation Topics](#)
Select an Agency's Open SBIR Topics
- [Closed SBIR/STTR Solicitation Topics](#)
Topics often recycled for future solicitations
- [Past SBIR/STTR Awards](#)
SBIR/STTR Awards Databases
- [Federal Laboratory Resources](#)
Keyword search for federal technology resources

National / Regional Conferences

Help & Assistance Services

National SBIR/STTR Gateway Search Service Results by Zyn Search®

Searched SBIR/STTR Topic files for "cancer" and found 2 matches.

Displaying hits 1 through 2.

1. [\(SBIR/STTR\) DHHS/NIH-NIA - Division of Aging Biology \(DAB\)](#)

Score: **** Division of Aging Biology (DAB) SBIR/STTR PHS 2015-2 Grants DHHS/NIH-NIA - National Institute on Aging (NIA) Opens: August 5, 2015 - Closes: Standard new NIH Receipt dates (see below) Division of Aging Biology (DAB) DAB sponsors research on the molecular, cellular, genetic, and physiological causes and consequences of aging processes...

2. [\(SBIR/STTR\) DHHS/NIH-NIA - Division of Geriatrics](#)

Score: **** Division of Geriatrics and Clinical Gerontology (DGCG) SBIR/STTR PHS 2015-2 Grants DHHS/NIH-NIA - National Institute on Aging (NIA) Opens: August 5, 2015 - Closes: Standard new NIH Receipt dates (see below) Division of Geriatrics and Clinical Gerontology (DGCG) DGCG supports clinical and translational research on health and disease in the aged and research on aging over the human life span and it...

[Perform New Search](#)
[Return to SBIR Gateway](#)

This Search Service is provided by The SBIR Gateway.
Please address your comments to: info@zyn.com

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Other Search Engines

1. grants.gov
2. sbir.defensebusiness.org
3. fbo.gov
4. Individual agencies, but...

The screenshot shows the SBIR/STTR Gateway search results page. The header includes the logo "SBIR · STTR America's Seed Fund™ POWERED BY SBA" and navigation links for HOME, ABOUT, FUNDING, AWARDS, NEWS, EVENTS, and RESOURCES. The search results are displayed under the heading "Open Topic Search". A search box contains the term "cancer", and the results are sorted by "Close Date (ascending)". A note states: "NOTE: The Solicitations and topics listed on this site are copies from the various SBIR agency solicitations and are not necessarily the latest and most up-to-date. For this reason, you should visit the respective agency SBIR sites to read the official version of the solicitations and download the appropriate forms and rules." Below the note, it says "Displaying 1 - 10 of 19 results". The first result is "001: Technologies for Improving Population Health and Eliminating Health Disparities (R41/R42)" with release, open, due, and close dates. A blue arrow points to the search results area.

OVERLAPPING TOPICS, BUT VERY DIFFERENT AGENCIES

“You need to know your agency. No two SBIR agencies are alike.”

–Charles Cleland, USDA SBIR Program Manager

OTHER SBIR/STTR AGENCY DIFFERENCES

DOD

- Pre- release of topics
 - Ok to ask topic author questions until black out period begins
 - CAUTION re: one Army office’s decision!
 - SITIS available during black out period
- Variations among components are increasing

DoD Component	Technical Volume Page Limit	Price	Duration	Phase I Option
Army	20 pages	Base NTE \$100,000 + Phase I Option NTE \$50,000	6 Month Base + 4 Month Phase I Option	Required
Navy	20 pages	Base NTE \$125,000 + Phase I Option NTE \$100,000	6 Month Base + 6 Month Phase I Option	Required
Air Force	20 pages	Base NTE \$150,000	9 Month Base	Not Applicable
CBD	20 pages	Base NTE \$150,000	6 Month Base	Not Applicable
DARPA	20 pages	Base NTE \$100,000 + Phase I Option NTE \$50,000	6 Month Base + 4 Month Phase I Option	Required
DHA	20 pages	Base NTE \$150,000	6 Month Base	Not Applicable
DLA	20 pages	Base NTE \$150,000	6 Month Base	Not Applicable
USSOCOM	20 pages	Base NTE \$150,000	6 Month Base	Not Applicable

- USAF: 9 month Phase I, but must prove feasibility in 1st 6 months
- MDA: Phase 2s up to \$2.5 million; more like SOCOM re: deployment
- ALWAYS propose an option if component “allows” it
- 3 SBIR solicitations, 3 STTR solicitations per year
 - Not all components in all solicitations
 - Topics usually are not repeated
- Can’t invite Ph2s any more but must select in 90 days



The New Submission Site is Here!

Better Tools | Additional Resources | Increased Functionality

Visit us at: <https://sbir.defensebusiness.org>



The DoD SBIR/STTR Help Desk is available Monday-Friday from 9:00 a.m. - 6:00 p.m. ET at [1-800-348-0787](tel:1-800-348-0787), or by email to the Help Desk at: sbirhelp@bytecubed.com.

DoD SBIR/STTR Awards by State - 2012



DEFENSE CONTRACT AUDIT AGENCY (DCAA)
 RESOURCE GUIDE FOR
 SMALL BUSINESS INNOVATION RESEARCH
 SMALL BUSINESS TECHNOLOGY TRANSFER

[CLICK HERE](#)

CONNECT WITH US:

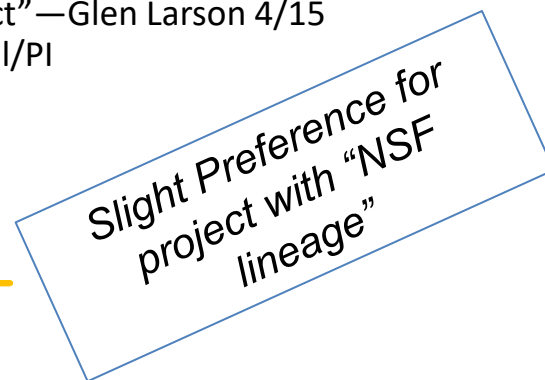
OTHER SBIR/STTR AGENCY DIFFERENCES

- **NIH Grants**

- Its revised “Fast Track” Program: Submit combined Ph I & II proposal
- Electronic proposal submission thru Grants.gov & era.nih.gov (Contracts proposal thru eCPS)
- FOA being reissued ~1/18 with new Grants.gov form Version E
- PhI proposals can be resubmitted multiple times (alternate sub/resub)
 - PhII can be resubmitted as FastTrack or Direct to PhII (not req'd to have non-SBIR feasib\$)
- Special “focused grants” within SBIR/STTR programs: PA’s & RFA’s
- ~~Commercializ Readiness Pilot Prgm: <\$3M extra for Ph2~~
- iCorps program for Ph1 recipients (~50/year)
- The “scoop” on Preliminary Data
- Strict page limits on Ph1 proposal: 7 pp for the research strategy+aims
- Innovation: 1. Challenges to current research or clinical practice paradigms; 2. Novel theoretical concepts, approaches or methodologies, instrument-tation or interventions; 3. Refinements, improvement or new applications of #2

- **NSF**

- “we fund almost anything that is a high quality project” —Glen Larson 4/15
- ≤1 proposal/company/”solicitation cycle,” ≤1 proposal/PI
- 12 Broad Topics for FY17.1 SBIR & STTR solicitations
 - Educational Technologies and Applications (EA)
 - Information Technologies (IC)
 - Semiconductors (S) and Photonic (PH) Devices and Materials
 - Internet of Things (I)
 - Electronic Hardware, Robotics and Wireless Technologies (EW)
 - Advanced Manufacturing and Nanotechnology (MN)
 - Advanced Materials and Instrumentation (MI)
 - Chemical and Environmental Technologies (CT)
 - Biological Technologies (BT)
 - Smart Health (SH)
 - Biomedical (BM) Technologies
 - Other Topics (OT)
- Letters of support, commun w/NSF Program Director “highly encouraged”
 - Talk re: innovation, business opportunity, relevance to NSF topic
- Heavy commercialization emphasis on Phase 1 proposal



Slight Preference for project with “NSF lineage”

OTHER SBIR/STTR AGENCY DIFFERENCES

- **DOE**
 - Eligible for SBIR & STTR funding if include research inst in proposal
 - Only agency to allow patent cost (PhII)
 - *“While NIH was exempting \$230 million in Stimulus \$\$\$s from SBIR/STTR, DOE actually put in another \$120 million in Phase 3 commercialization assistance”*
 - 2 solicitations per year (but each DOE office only participates once per year)
 - Pre-release of topics
 - Letter of intent mandatory
 - Commercialization Plan required in Phase I with \$revenue\$ estimates
- **NASA**
 - 6/25-27/17 webinar conference to discuss FY18 topics
 - Sessions recorded, available at NASA website
 - 20 PhI SBIR/STTR recipients selected for NSF I-Corps participation
 - Topics are “evolutionary” year-to-year—Tom Stanley, NASA Stennis ‘17
 - ≤10 SBIR & ≤10 STTR Proposals/Small Business/yr, ≤5 SBIR & ≤2 STTR awards/SB/yr
- **USDA**
 - 80-90% of winners have university/federal lab involvement
 - Subcontract to univ/USDA Fed labs “permitted & encouraged”-J Williams
 - *“Show connectivity to communities you serve”*-Bill Goldner
 - Webinar series Aug-Sept ‘16 available at <https://wrdc.usu.edu/htm/sbir/>
- **DHS**
 - 1 solicitation/year, combining S&T and Nuke
 - Greater emphasis on PhII
- **NIST**
 - Now making awards as grants
 - But topics, “fairness of opportunity” are still like contracts

MAJOR AGENCY DIFFERENCE: ELECTRONIC SUBMISSION

Grant Agencies

- NIH, DOE, USDA use www.grants.gov
 - NIH also requires eRA Commons registration
 - “Grants.gov sucks”
--Anonymous SBIR Program Mgr
- Registration on grants.gov “can take up to 8 weeks” –
Samuel Smith, eRA Service Desk Mgr, NIH Webinar 7/11
- Allow time to correct errors: grants.gov is picky, & points out errors only 1 at a time!
 - Submit 5 days in advance of deadline
- NSF uses FastLane, not grants.gov

Contract Agencies

- No expectation that all will adopt same electronic submission mechanism
- None expected to use grants.gov

“One benefit of electronic submission is that we are no longer receiving proposals written in crayon...” --anonymous SBIR/STTR Program Leader

To curb drug abuse: (1) legalize all drugs. (2) require addict to purchase drugs on grants.gov

DETERMINE IF THE AGENCY REALLY CARES ABOUT THE TOPIC

- Is it a “hot” topic?
- Have they already funded a solution?
- Funny things happen that result in topics in the solicitation: make sure the one you care about isn't a fluke

FIVE SOURCES OF INFORMATION ON A SPECIFIC SBIR/STTR TOPIC

1. People

2. Literature

3. People

4. Internet

5. People

IMPORTANT SOURCE: PEOPLE

- High priority: talk to the people who wrote the topic, and who will evaluate and select proposals for funding
- Why? No way you know everything they're thinking about by just reading a few paragraphs in the solicitation
- What you want to learn
 - Is it a hot topic?
 - Is funding available?
 - Who are your competitors?
 - Context
 - Other: _____
 - Past related work
 - Sources of more info
 - Attitude toward your idea
 - Reauthoriz-based changes
- DoD applicant: called & learned topic had been deleted. Spent ~4 minutes, saved 50-80 hrs of proposal writing
- Cautions
 - Not as applicable to SBIR/STTR grant solicitations (vs. contract ones), but still important to talk with agency reps
 - Most contract agencies limit when you can speak with them about topic-specific issues
 - Grant agencies more accessible cuz of external review process

ETIQUETTE ON TOPIC AUTHOR DISCUSSIONS

1. Set up call in advance (via email)
2. Thoroughly read solicitation & website 1st
3. Write down list of questions in priority order
4. Plan for ≤ 10 minutes
5. Don't exceed 10 minutes unless topic author wants to
6. Avoid sales pitch, but seek feedback on your approach

IMPORTANT SOURCE: PEOPLE

- Talk to potential users within a contract agency
 - #1 priority: understand their need, & find out if they like your approach to satisfying it
 - Golden rule applies: find out what they want, not what you think they should want
 - This does not usually apply to grant agencies
- Talk to other staffers in a grant agency
 - Program managers, grants management staff, etc
 - *“the person who has the most input into whether an application will be funded, or not, is the [NIH] Program Officer who is in charge of the specific program being targeted”*
- Talk to potential customers, funders, partners
 - Public & private sector
 - Get letters of support, include in your proposal!

--Russell & Morrison, The Grant Writer's Workbook

“Letters of support from potential customers, strategic partners or investors act as validation, add significant credibility, and are highly encouraged”

--NSF FY07.1 solicitation

- MDA, DARPA don't want DOD personnel writing these letters

Yes, but not really,
but maybe more so in
the future

AVOID THE TECHNOLOGY TRAP

Avoid this:

“I’ve got a nifty technology that I’m in love with, and let me tell you all about it”

- To avoid the technology trap, develop a theme
 - National priority/problem
 - Agency priority/problem
 - *Contract agencies may tell you what the theme should be in the topic description*
 - Examples:
 - lives or \$ saved
 - security
 - freedom
 - overcome discrimination
- Prepare to write the proposal around that theme
 - Develop the theme up front
 - Repeat it, concisely, throughout the proposal
 - 1 sentence reminder re: WHY agency should fund this

SUGGESTION: TRY TO FIND OUT HOW YOUR PROPOSAL WILL BE REVIEWED

- Importance in strategy: You want to know who you're writing to
 - tailor the level of your presentation
 - address the reader's hot buttons
- Problem: The review process varies tremendously among (and even within) agencies
 - single reviewer who wrote the topic
 - multiple levels, including peer review panel
- Check solicitation & agency website 1st for review process description, then ask the agency SBIR/STTR program manager re: any remaining questions
 - Never ask for specific reviewers' names

SBIR/STTR PHASE I PROPOSAL DRAFTING

2nd in a 4 step process for developing a competitive
SBIR/STTR proposal

1. Formulate your proposal strategy
- 2. Draft the proposal**
3. Get a review of the draft before submitting it
4. Get a debriefing after winners are announced

PHASE I EVALUATION PROCESS

I. Prescreening (aka “administrative review”)

- Responsive to a specific topic in agency’s current solicitation?
- Compliance with agency’s proposal requirements?
- ~5-10% of SBIR proposals get canned here
 - DOE FY11: 19% of 2,300 Ph1 proposals pre-screened out
 - NSF: 670 proposals rec’d, 600 got reviewed (FY08.2)
 - *“At least 10% of the [NIH] SBIR/STTR applications were RETURNED last round due to non-compliance with type size/page limitations”*
--JoAnn Goodnight, NIH, 3/28/03

II. Technical Review

a. R&D quality

- Scientific and technical quality of proposed research
- Anticipated benefits
- Qualifications of company and research staff
- Consistent with agency’s needs

b. Commercialization potential

III. Select Winners Based on Priorities

DOE FY11: 641 proposals were “fundable,”
but only 229 awards could be made

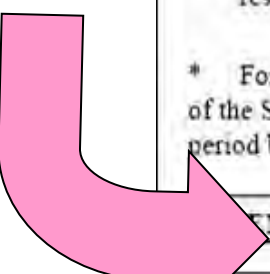
DOES THE APPLICATION SATISFY THE FOLLOWING REQUIREMENTS:

Use Drop-down
Menus

- √ DUNS # on cover page, if appropriate.
- √ One, and only one, topic from the Technical Topics Section identified on the cover page.
- √ One, and only one, subtopic from the Technical Topics Section identified on the cover page.
- √ The cover page is completed and signature blocks filled with **ALL CAPITAL NAME OF SIGNING AUTHORIZING PARTIES.**
- √ Principal Investigator will work a minimum of 195 hours or at least 5 hours/wk on the project.
- √ All certifications and questions on cover page marked Y (Yes) or N (No).
- √ Amount requested from Government is not in excess of Phase I (\$100,000) or Phase II (\$750,000) limit.
- √ Abstract contains no proprietary information and does not exceed space provided on the Project Summary Page (Appendix B).
- √ Main Text (technical content) is included as requested in Section 3.3.2
- √ Application should not be more than 25 pages. However, this checklist (Appendix D) and the Documentation of Multiple Phase II Awards (Section 3.3.4) will not be included in the 25-page count.
- √ No font smaller than 12 point times new roman in main text.
- √ Level of effort in compliance with Section 3.3.1c. (For SBIR, the small business must perform at least 2/3 of the research and analytical effort. For STTR, the small business must perform at least 40% and the research institution must perform at least 30%.)*

* For grant applications that are to be considered for both SBIR and STTR, prepare the grant application to meet the requirements of the SBIR Program. If the application is selected for STTR, budgetary adjustments can be completed during the negotiation period before the grant begins.

ATTENTION: GRANT APPLICATIONS NOT MEETING ALL THE ABOVE REQUIREMENTS WILL BE DECLINED WITHOUT FURTHER ACTION.



A KEY TASK

FOLLOW THE INSTRUCTIONS!

- Gets you through the prescreen
- Helps you organize & present the technical & commercial merits in the manner & order the agency wants

U.S. DEPARTMENT OF DEFENSE
SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM

PROGRAM SOLICITATION FY 16.2

Closing Date: June 22, 2016, no later than 6:00 a.m. ET

Commented [JG1]: Always review latest instructions for updates and changes

1.0 PHASE I PROPOSAL

1.1 Introduction

This solicitation and the DoD SBIR/STTR Submission Web site are designed to reduce the time and cost required to prepare a formal proposal. Since the guidance on allowable content may vary by Component, it is the proposing firm's responsibility to consult the Component-specific instruction for detailed guidance.

Commented [JG2]: Translation: there's a supplementary set of instructions at each DOD component with which you also must comply!

A complete proposal consists of four volumes:

- Volume 1: Proposal Cover Sheet
- Volume 2: Technical Volume
- Volume 3: Cost Volume
- Volume 4: Company Commercialization Report

Commented [JG3]: If you don't submit all 4, your proposal is incomplete and won't be reviewed by DOD

The Submission Web site provides a structure for providing these four sections but the proposing firm must begin entering its proposal by providing information for the Proposal Cover Sheet. Once the firm begins a Proposal Cover Sheet they will be assigned a proposal number. **Please make note of this proposal number and print it for future reference.**

Commented [JG4]: You MUST fill out Volume 1 first. It's easy, so just do it

To submit a proposal the proposer must click the green "Submit Proposal" button. If the proposal status is "In Progress" it will not be considered "Submitted" For a more detailed explanation visit FAQ's <https://sbir.defensebusiness.org/faqs>. The proposer may add the remaining volumes or modify the Proposal Cover Sheet until solicitation close. It is the proposing firm's responsibility to verify that the Technical Volume does not exceed the page limit after upload to the DoD SBIR/STTR Submission site by clicking on the "Verify Technical Volume" icon. For how a technical volume in excess of 20 pages is handled, refer to Component-specific instructions. **Some Components will reject the entire proposal if over 20 pages.** Signatures are not required on the electronic forms at the time of submission. If the proposal is selected for award, the DoD Component program will contact the proposer for signatures at the time of award.

Commented [JG5]: IMPORTANT CHANGE! DoD no longer automatically uploads as you write. If you don't hit "submit," it doesn't go to DOD and your proposal doesn't get reviewed

1.2 Summary of Component Programs

DoD Component	Technical Volume Page Limit	Price	Duration	Phase I Option
Army	20 pages	Base NTE \$100,000 + Phase I Option NTE \$50,000	6 Month Base + 4 Month Phase I Option	Required
Navy	20 pages	Base NTE \$80,000 + Phase I Option NTE \$70,000	6 Month Base + 6 Month Phase I Option	Required

Commented [JG6]: Others just stop reading after 20 pages, so DO NOT EXCEED 20 PAGES in Volume 2

Commented [JG7]: If Option is required, then you MUST include optional tasks and budget in your Phase I proposal, or it will be tossed out without review for not being in compliance with these instructions

Air Force	20 pages	Base NTE \$150,000	9 Month Base	Not Applicable
DARPA	20 pages	Base NTE \$100,000 + Phase I Option NTE \$50,000	6 Month Base + 4 Month Phase I Option	Required
DLA	20 pages	Base NTE \$100,000 + Phase I Option NTE \$50,000	9-12 Month Base + up to 6 Month Phase I Option	Required
DMEA	20 pages	Base NTE \$150,000	6 Month Base	Not Applicable
DTRA	20 pages	Base NTE \$150,000	7 Month Base	Not Applicable
MDA	20 pages	Base NTE \$100,000 + Phase I Option NTE \$50,000	6 Month Base + 6 Month Phase I Option	Required
OSD	20 pages	Base NTE \$150,000	6 Month Base	Not Applicable

*NTE – Not-to-Exceed

1.3 **Marking Proprietary Proposal Information**

Offerors that include in their proposals data that they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, shall:

(1) Mark the first page of each Volume of the proposal submission with the following legend:

"This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed-in whole or in part-for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offeror as a result of-or in connection with-the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in pages [insert numbers or other identification of sheets]"; and

(2) Mark each sheet of data it wishes to restrict with the following legend:

"Use or disclosure of data contained on this page is subject to the restriction on the first page of this volume."

The DoD assumes no liability for disclosure or use of unmarked data and may use or disclose such data for any purpose.

Restrictive notices notwithstanding, proposals and final reports submitted through the DoD Submission Web site may be handled, for administrative purposes only, by support contractors. All support contractors are bound by appropriate non-disclosure agreements.

1.4 **Phase I Proposal Instructions**

a. **Proposal Cover Sheet (Volume One)**

On the DoD Submission Web site at <https://sbir.defensebusiness.org/>, prepare the Proposal Cover Sheet. The Cover Sheet must include a brief technical abstract of no more than 200 words that describes the proposed R&D project with a discussion of anticipated benefits and potential commercial applications. **Do not include proprietary or classified information in the Proposal Cover Sheet.** If your proposal is selected for award, the technical abstract and

Commented [JG8]: Do it their way, or DOD isn't obligated to protect your sensitive/proprietary/confidential info. And don't include any more than absolutely necessary, and never give 100% of the recipe to your secret sauce

Commented [JG9]: Part 1 of your DOD Phase 1 proposal

Commented [JG10]: Guess what can happen if you exceed 200 words? Tossed out without review!

Commented [JG11]: Important if you don't want proposed toss in trash without consideration for award

discussion of anticipated benefits may be publicly released on the Internet. Once the Cover Sheet is saved, the system will assign a proposal number. You may modify the cover sheet as often as necessary until the solicitation closes.

b. **Format of Technical Volume (Volume Two)**

(1) Type of file: The Technical Volume must be a single Portable Document Format (PDF) file, including graphics. Perform a virus check before uploading the Technical Volume file. If a virus is detected, it may cause rejection of the proposal. **Do not lock or encrypt the uploaded file. Do not include or embed active graphics such as videos, moving pictures, or other similar media in the document.**

Commented [JG12]: Part 2 of your DOD Phase 1 proposal

Commented [JG13]: Just do it

(2) Length: The Technical Volume is limited to 20 pages.

(3) Layout: Number all pages of your proposal consecutively. Those who wish to respond must submit a direct, concise, and informative research or research and development proposal of no more than 20 pages (no type smaller than 10-point on standard 8-1/2" x 11" paper with one-inch margins). The header on each page of the Technical Volume should contain your company name, topic number, and proposal number assigned by the DoD SBIR/STTR Submission Web site when the Cover Sheet was created. The header may be included in the one-inch margin.

Commented [JG14]: Just do it

Commented [JG15]: Don't cheat or a clerical support person with a ruler will toss your proposal out of the "to be considered" pile

Commented [JG16]: Just do it

c. **Content of the Technical Volume (Volume Two)**

The Technical Volume should cover the following items in the order given below.

Commented [JG17]: Include ALL of these sections, in this order, and using the instruction title as the title of each section

(1) **Identification and Significance of the Problem or Opportunity.** Define the specific technical problem or opportunity addressed and its importance.

Commented [JG18]: NO REGURGITATION! Put this into your own words based on your understanding of the DOD topic you are responding to

(2) **Phase I Technical Objectives.** Enumerate the specific objectives of the Phase I work, including the questions the research and development effort will try to answer to determine the feasibility of the proposed approach.

Commented [JG19]: Notice it is plural? So include 2 or more objectives of the Phase 1 feasibility study

Commented [JG20]: This says, IMHO, that you need to list a series of questions you need to answer in Phase 1 to decide if your approach to solving the problem is a feasible one

(3) **Phase I Statement of Work (including Subcontractors' Efforts).**

a) Provide an explicit, detailed description of the Phase I approach. If a Phase I option is required or allowed by the Component, describe appropriate research activities which would commence at the end of Phase I should the Component elect to exercise the option. The Statement of Work should indicate what tasks are planned, how and where the work will be conducted, a schedule of major events, and the final product(s) to be delivered. The Phase I effort should attempt to determine the technical feasibility of the proposed concept. The methods planned to achieve each objective or task should be discussed explicitly and in detail. This section should be a substantial portion of the Technical Volume section.

Commented [JG21]: This is the GUTS of the DOD Phase 1 proposal. Unless you are a seasoned DOD SBIR/STTR winner, you MUST write an excellent SOW or you are in deep trouble. Reviewer wants to feel comfortable that you know how to do this R&D project

Commented [JG22]: A KEY WORD in defining what you need to write. Describe "how" you will do each task, and "how" you will accomplish each objective. You MUST go beyond saying "what" you will do, and describe "how" you are doing it

Commented [JG23]: Translation: make this 4-6 pages of Vol 2's 20 page limit.

b) This solicitation may contain topics that have been identified by the Program Manager as research or activities involving Human/Animal Subjects and/or Recombinant DNA. In the event that Phase I performance includes performance of these kinds of research or activities, please identify the applicable protocols and how those protocols will be followed during Phase I. Please note that funds cannot be released or used on any portion of the project involving human/animal subjects or recombinant DNA research or activities until all of the proper approvals have been obtained (see Sections 4.7 - 4.9).

Commented [JG24]: DOD has really softened its concerns with human subjects, but still is an issue. Per the instructions, look for topic to say if human subjects are anticipated or not

(4) **Related Work.** Describe significant activities directly related to the proposed effort, including any conducted by the principal investigator, the proposing firm, consultants, or others. Describe how these activities interface with the proposed project and discuss any planned coordination with outside sources. The technical volume must persuade reviewers of the proposer's awareness of the state-of-the-art in the specific topic. Describe previous work not directly related to the proposed effort but similar. Provide the following: (1) short description, (2) client for which work was performed (including individual to be contacted and phone number), and (3) date of completion.

Commented [JG25]: Present 2 things here. First, your prior work that shows you are qualified to do the proposed Phase 1. Second, your knowledge of what others are doing that is relevant ("state of the art")

Commented [JG26]: Explain RELEVANCE to the proposed Phase 1, and also explain DIFFERENCE between the other work and this project. NEVER assume the reviewer will "figure it out" on their own

(5) **Relationship with Future Research or Research and Development.**

Commented [JG27]: Define where you will be at end of Phase 1 if it proves feasible. THEN briefly draw your vision of what you will do in Phase 2

- a) State the anticipated results of the proposed approach if the project is successful.
- b) Discuss the significance of the Phase I effort in providing a foundation for Phase II research or research and development effort.
- c) Identify the applicable clearances, certifications and approvals required to conduct Phase II testing and outline the plan for ensuring timely completion of said authorizations in support of Phase II research or research and development effort.

**Latest Navy "Template"
says 1-2 pp for Com Strat**

(6) **Commercialization Strategy.** Describe in approximately one page your company's strategy for commercializing this technology in DoD, other Federal Agencies, and/or private sector markets. Provide specific information on the market need the technology will address and the size of the market. Also include a schedule showing the quantitative commercialization results from this SBIR project that your company expects to achieve.

Commented [JG28]: A VERY important part of this proposal!

Commented [JG29]: Because it isn't strictly limited, I suggest expanding to ~2 pages to surpass your competitors and show DOD how important this is to you

(7) **Key Personnel.** Identify key personnel who will be involved in the Phase I effort including information on directly related education and experience. A concise technical resume of the principal investigator, including a list of relevant publications (if any), must be included (Please do not include Privacy Act Information). All resumes will count toward the applicable page limitation.

Commented [JG30]: Don't get confused: Each component of DOD only cares about its own need for your product/service (exception: the think tank of DARPA). "Private sector" means DOD Prime Contractors in this case. Do not worry about selling this to any other customer, or putting on shelves of Wal-Mart. Discuss how you envision getting this into the hands of the warfighter to solve the stated problem

Commented [JG31]: How many units does the DOD component need? If only 4, then that's not a sustainable market, and you should talk about how you are going to sell to other customers besides DOD to make this a commercialization success for your company

(8) **Foreign Citizens.** Identify any foreign citizens or individuals holding dual citizenship expected to be involved on this project as a direct employee, subcontractor, or consultant. For these individuals, please specify their country of origin, the type of visa or work permit under which they are performing and an explanation of their anticipated level of involvement on this project. Offerors frequently assume that individuals with dual citizenship or a work permit will be permitted to work on an SBIR project and do not report them. This is not necessarily the case and a proposal will be rejected if the requested information is not provided. Therefore, firms should report any and all individuals expected to be involved on this project that are considered a foreign national as defined in Section 3.5 of the solicitation. You may be asked to provide additional information during negotiations in order to verify the foreign citizen's eligibility to participate on a SBIR contract. Supplemental information provided in response to this paragraph will be protected in accordance with the Privacy Act (5 U.S.C. 552a), if applicable, and the Freedom of Information Act (5 U.S.C. 552(b)(6)).

Commented [JG32]: At minimum, should have bio for PI

Commented [JG33]: So KISS applies! Do not have any bio exceeding 1-2 pages

Commented [JG34]: Note the dual citizenship. Disclose, and try to allay DOD concerns that any foreigners will be a threat to the project or National Security

Commented [JG35]: DoD's VERY serious about this!

(9) **Facilities/Equipment.** Describe available instrumentation and physical facilities necessary to carry out the Phase I effort. Justify equipment purchases in this section and include detailed pricing information in the Cost Volume. State whether or not the facilities where the proposed work will be performed meet environmental laws and regulations of federal, state

Commented [JG36]: Let us clarify: this refers ONLY to equipment you propose to buy as DIRECT charges to the Phase I project (doesn't apply to what you buy with indirect or profit. WARNING: DOD retains ownership of equipment you buy with Direct dollars

(name), and local Governments for, but not limited to, the following groupings: airborne emissions, waterborne effluents, external radiation levels, outdoor noise, solid and bulk waste disposal practices, and handling and storage of toxic and hazardous materials.

Commented [JG37]: Hint: insert name of your state here

- (10) **Subcontractors/Consultants.** Involvement of a university or other subcontractors or consultants in the project may be appropriate. If such involvement is intended, it should be identified and described according to the [Cost Breakdown Guidance](#). A minimum of two-thirds of the research and/or analytical work in Phase I, as measured by direct and indirect costs, must be carried out by the proposing firm, unless otherwise approved in writing by the Contracting Officer. SBIR efforts may include subcontracts with Federal Laboratories and Federally Funded Research and Development Centers (FFRDCs). A waiver is no longer required for the use of federal laboratories and FFRDCs; however, proposers must certify their use of such facilities on the Cover Sheet of the proposal.

Commented [JG38]: Also needs to be explained here in terms of what assistance was needed, and why your sub/consultant is the best provider of it

Commented [JG39]: Good! Reauthorization removed this dumb practice

- (11) **Prior, Current, or Pending Support of Similar Proposals or Awards.** If a proposal submitted in response to this solicitation is substantially the same as another proposal that was funded, is now being funded, or is pending with another Federal Agency, or another or the same DoD Component, you must reveal this on the Proposal Cover Sheet and provide the following information:

Commented [JG40]: Looks like goody, bureaucratic section, but IT IS CRITICALLY IMPORTANT that you disclose here anything proposal or award that is in any way "similar" to the Phase I you are proposing here

Commented [JG41]: Broaden to ANY source to stay "squeaky clean" on this high priority section of the proposal

Commented [JG42]: Also explain the relevance and differences between these other proposals/projects and the Phase 1 you're proposing here

- a) Name and address of the Federal Agency(s) or DoD Component to which a proposal was submitted, will be submitted, or from which an award is expected or has been received.
- b) Date of proposal submission or date of award.
- c) Title of proposal.
- d) Name and title of principal investigator for each proposal submitted or award received.
- e) Title, number, and date of solicitation(s) under which the proposal was submitted, will be submitted, or under which award is expected or has been received.
- f) If award was received, state contract number.
- g) Specify the applicable topics for each SBIR proposal submitted or award received.

Note: If this does not apply, state in the proposal "No prior, current, or pending support for proposed work."

d. **Content of the Cost Volume (Volume Three).**

Commented [JG43]: Part 3 of your DOD proposal

Complete the Cost Volume in the format shown in the Cost Breakdown Guidance by using the on-line [cost volume form](#) on the DoD Submission Web site. Some items in the Cost Breakdown Guidance may not apply to the proposed project. If that is the case, there is no need to provide information on each and every item. What matters is that enough information be provided to allow us to understand how you plan to use the requested funds if a contract is awarded.

Commented [JG44]: Form used to be nice, intuitive, well organized, logical. It was therefore eliminated, to be replaced with one that is everything but. We recommend you do the budget on an Excel spreadsheet, then enter the data in the goofy order requested by the "improved" DOD form

- (1) List all key personnel by name as well as by number of hours dedicated to the project as direct labor.
- (2) While special tooling and test equipment and material cost may be included under Phases I, the inclusion of equipment and material will be carefully reviewed relative to need and appropriateness for the work proposed. The purchase of special tooling and test equipment must, in the opinion of the Component Contracting Officer, be advantageous to the Government and should be related directly to the specific topic. These may include such items as innovative instrumentation or automatic test equipment. Title to property furnished by the Government or acquired with Government funds will be vested with the DoD

Commented [JG45]: Again, this ONLY applies to equipment you want to purchase as DIRECT costs on the Phase I project. It does not apply to that you are buying with any other money, including indirect dollars or profit on this Phase I

- Component, unless it is determined that transfer of title to the contractor would be more cost effective than recovery of the equipment by the DoD Component.
- (3) Cost for travel funds must be justified and related to the needs of the project.
 - (4) Cost sharing is permitted for proposals under this solicitation; however, cost sharing is not required nor will it be an evaluation factor in the consideration of a Phase I proposal.
 - (5) A Phase I Option (if applicable) should be fully costed separately from the Phase I (base) approach. Additional cost volume information may be required at the end of your technical volume (see Component Instructions, Section 12.0).
 - (6) All subcontractor costs and consultant costs must be detailed at the same level as prime contractor costs in regards to labor, travel, equipment, etc. Provide detailed substantiation of subcontractor costs in your cost proposal. Enter this information in the Explanatory Material section of the on-line cost proposal form.

Commented [JG46]: The correct wording is "MUST BE." You must include an option here in Volume 3, and it must be described in Scope of Work in Volume 2

Commented [JG47]: Not acceptable to just plug in a total dollar amount for your subcontractor. Must explain its major parts in the budget narrative, aka "Explanatory material"

When a proposal is selected for award, you must be prepared to submit further documentation to the Component Contracting Officer to substantiate costs (e.g., an explanation of cost estimates for equipment, materials, and consultants or subcontractors). For more information about cost proposals and accounting standards, see the DCAA publication titled "Audit Process Overview – Information for Contractors" available at: <http://www.dcaa.mil>.

Commented [JG48]: Review, but do not expect this to be all that helpful. It is generic to DOD, and not specific to SBIR/STTR

e. **Company Commercialization Report (Volume Four).** The Company Commercialization Report is the fourth section of a complete proposal package. The Company Commercialization Report is prepared through the DoD Submission Web site (<https://sbir.defensebusiness.org/>). A Company Commercialization Report is required even if the proposing firm has not previously received SBIR or STTR awards. Follow the instructions on the Web site and enter the quantitative commercialization results of your firm's prior Phase II projects. Include the items listed below as well as other information relative to your firm's commercialization track record.

Commented [JG49]: Part 4 of your DOD Phase I proposal

- (1) Sales revenue from new products and non-R&D services resulting from Phase II technology;
- (2) Additional investment from sources other than the federal SBIR/STTR Program in activities that further the development and/or commercialization of Phase II technology;
- (3) Whether the Phase II technology has been used in a fielded DoD system or acquisition program and, if so, which system or program;
- (4) The number of patents resulting from the contractor's participation in the SBIR/STTR Program;
- (5) Growth in number of firm employees; and
- (6) Whether the firm has completed an initial public offering of stock (IPO) resulting, in part, from a Phase II project.

Commented [JG50]: Note this, and keep reminding yourself of this as you fill out the CCR form. It will ask questions of you that are highly, and perhaps even totally, irrelevant to you (unless you are a previous winner of Phase II SBIR/STTR awards). But you MUST fill out this irrelevant form, or your proposal will be rejected without review because it is incomplete. JUST FILL OUT THE IRRELEVANT FORM

All prior DoD and non-DoD Phase II projects must be reported, regardless of whether the project has any commercialization to date.

Commented [JG51]: See? Unless you have prior Phase 2 awards, the CCR/Volume 4 is irrelevant to your company. JUST FILL OUT THE IRRELEVANT FORM.

The Web site will compare these results to the historical averages for the DoD SBIR Program to calculate a Commercialization Achievement Index (CAI) value. Only firms with four or more Phase II projects that were awarded at least two years prior to this solicitation will receive a CAI score; otherwise the CAI is not applicable (see the Company Commercialization Report section of the DoD Submission Web site for more details). Firms with a CAI at the 20th percentile or below will be rated

no higher than “Marginal” for this factor. This report shall only be prepared once and submitted with all your proposals for this solicitation. A report showing that a firm has received no prior Phase II awards will not affect the firm's ability to obtain an SBIR award.

Commented [JG52]: So even though it is irrelevant and you will have nothing to report, it doesn't work against you. What is deadly is to not submit this irrelevant form, so JUST DO IT

Additional explanatory material relating to the firm's record of commercializing its prior SBIR or STTR projects may be included in the Commercialization Track Record Narrative section of the Company Commercialization Report. Examples of the additional information include: commercialization successes in government or private sector markets that are not fully captured in the quantitative results (e.g. commercialization resulting from your firm's prior Phase I projects); any mitigating factors that could account for low commercialization; and recent changes in the firm's organization or personnel designed to increase the firm's commercialization success.

Commented [JG53]: If you have a prior track record of Phase 2 and their commercialization, use this to expand and explain how you are actively and aggressively pursuing commercialization of your previous SBIR/STTR work

1.5 Phase I Proposal Checklist

The Offeror's proposal shall be in accordance with Section 5.0. A complete proposal consists of four volumes:

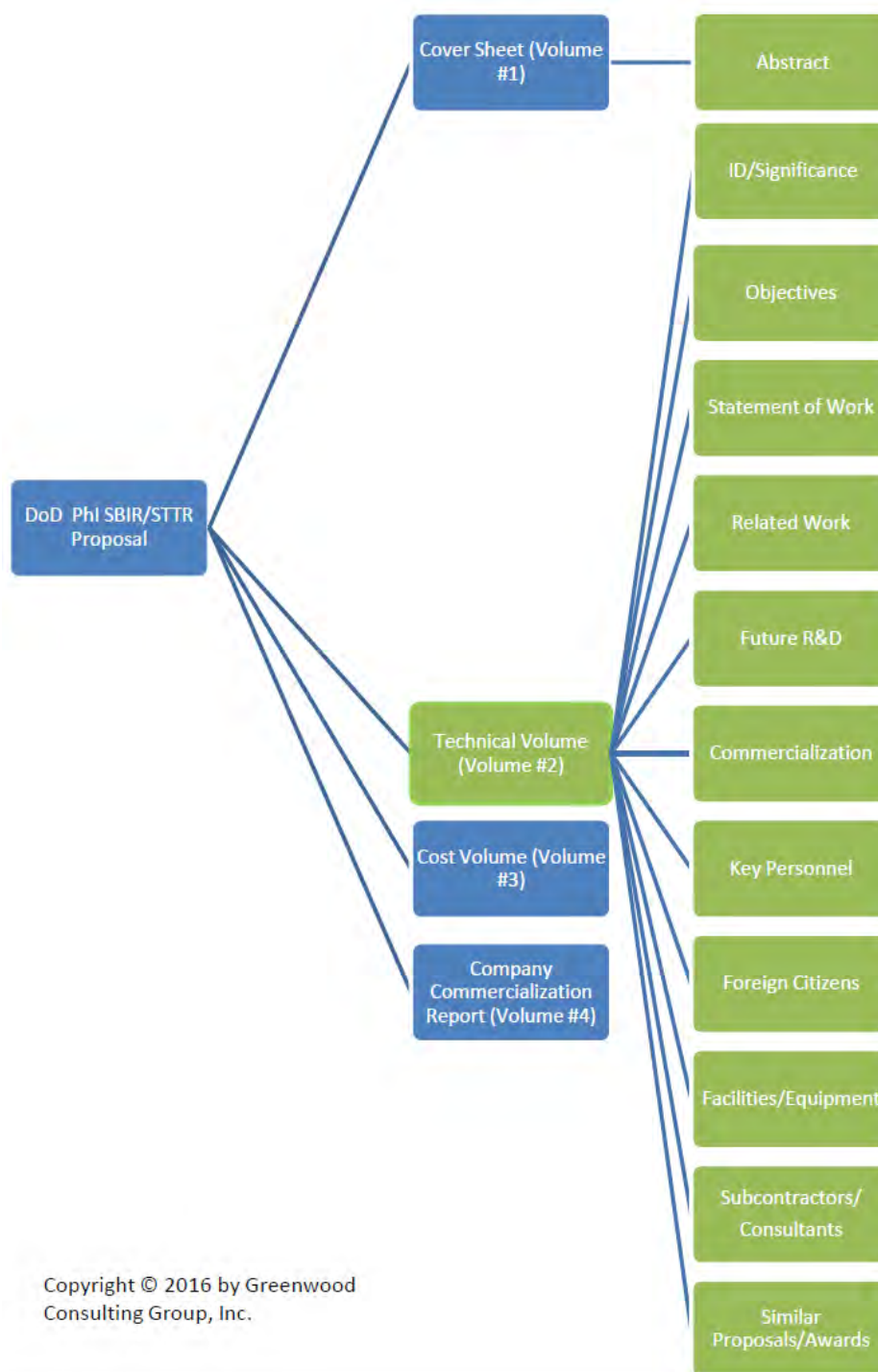
- Volume 1: Proposal Cover Sheet
- Volume 2: Technical Volume
- Volume 3: Cost Volume
- Volume 4: Company Commercialization Report

Commented [JG54]: Whenever you see the word “Checklist,” recognize that this includes SOME of the things that the agency will use to decide if your proposal is reviewed for technical merits, or thrown in the trash as “unresponsive.” Therefore, comply with all things listed here if you want any chance of success

Those responding to this solicitation should note the proposal preparation tips listed below:

- a. Read and follow all instructions contained in this solicitation, including the instructions in Section 12.0 of the DoD Component to which the firm is applying.
- b. Register the firm on the secure, password-protected DoD Submission Web site at <https://sbir.defensebusiness.org/> and, as instructed on the Web site, prepare the firm's submission.
- c. Register the firm with SBA's Company Registry at www.sbir.gov and provide the SBA SBC Identification Number on each proposal coversheet submitted in response to this solicitation.
- d. Check that the cost adheres to the Component criteria specified and the cost on the Cover Sheets matches the cost in the Cost Volume.
- e. Check that the Project Abstract and other content provided on the cover sheets contain NO proprietary information.
- f. Mark proprietary information within the Technical Volume as instructed in Section 5.3.
- g. The content in the Technical Volume, including the option (if applicable), includes the items in Section 5.4.c.
- h. That the header on each page of the technical volume should contain the company name, topic number, and proposal number. (The header may be included in the one-inch margins.)
- i. The Company Commercialization Report is submitted online in accordance with Section 5.4.e. This report is required even if the firm has not received prior SBIR funding.
- j. Limit your Technical Volume to 20 pages.

Commented [JG55]: Both numbers should be the same!



Now let's look at NSF's Phase I Instructions...

WHY, YOU ASK?

Why Are We Showing You NSF Instructions?

- Because NSF considers any “high quality proposal” on any topic
- Therefore, you can always submit
 - a version of your DoD Phase I proposal to NSF
 - Be sure you disclose to NSF that you have submitted it to DoD already
 - a proposal that DoD “ought to be interested in,” but for which there is no DoD SBIR/STTR topic
 - But beware: NSF emphasis on commercialization says you better have a DoD/Prime client on board!

Small Business Innovation Research Program Phase I (SBIR)

June 2017 Submission

PROGRAM SOLICITATION

NSF 17-544

REPLACES DOCUMENT(S):

NSF 16-599



National Science Foundation

Directorate for Engineering
Industrial Innovation and Partnerships

Full Proposal Deadline(s) (due by 5 p.m. submitter's local time):

June 14, 2017

Commented [JG1]: Note requirement. Determined by your primary address

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Commented [JG2]: These double lines indicate I've cut out text between the preceding and next section of the solicitation

Registrations. Start Now - *These registrations take time and are required to receive funding. You must register the same information in the same way in each of these systems to avoid problems later. (See the Additional Eligibility section for more details). We recommend that you register in the following order:*

Commented [JG3]: Good advice!

1. [Dun and Bradstreet Data Universal Numbering System \(DUNS\)](#)
2. [System for Award Management \(SAM\)](#)
3. [Small Business Administration \(SBA\) Company Registry](#)
4. [NSF FastLane - register company and Principal Investigator \(PI\)](#)

Commented [JG4]: More good advice. Details in a later section of these instructions

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Proposal Preparation and Submission Instructions

Commented [JG5]: Yes, it says "Instructions", but they really aren't

A. Proposal Preparation Instructions

- **Letters of Intent:** Not required
- **Preliminary Proposal Submission:** Not required
- **Full Proposal Preparation Instructions:** This solicitation contains information that deviates from the standard *NSF Proposal and Award Policies and Procedures Guide (PAPPG)* proposal preparation guidelines. Please see the full text of this solicitation for further information.

B. Budgetary Information

- **Cost Sharing Requirements:**

Inclusion of voluntary committed cost sharing is prohibited.

- **Indirect Cost (F&A) Limitations:**

Indirect costs plus fringe benefits are limited to a maximum rate of 150% of direct salaries and wages. This limitation may entail mandatory committed cost sharing by the organization. In such cases, it constitutes an exception to NSF's cost sharing policy.

Commented [JG6]: Important!

- **Other Budgetary Limitations:**

Other budgetary limitations apply. Please see the full text of this solicitation for further information.

C. Due Dates

- **Full Proposal Deadline(s)** (due by 5 p.m. submitter's local time):

June 14, 2017

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V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

Commented [JG7]: Yes, it says "instructions" (again) but they really aren't (again)

A. Proposal Preparation Instructions

Full Proposal Instructions: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the guidelines specified in the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG). The complete text of the PAPPG is available electronically on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=papp. Paper copies of the PAPPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-PUBS (7827) or by e-mail from nsfpubs@nsf.gov.

See PAPPG Chapter II.C.2 for guidance on the required sections of a full research proposal submitted to NSF. Please note that the proposal preparation instructions provided in this program solicitation may deviate from the PAPPG instructions.

This solicitation contains the information needed to prepare a proposal and refers to specific sections of the PAPPG only when necessary. The instructions in this solicitation take precedence over instructions in the PAPPG in the event of a conflict.

Soliciting Pre-Submission Feedback. Potential proposers may (but are NOT required to) email a 1-2 page executive summary to the cognizant SBIR/STTR Program Director to help gauge whether a project meets the program's intellectual merit and broader/commercial impact criteria. The summary should discuss: the company and team; the market opportunity, value proposition, and customers; the technology/innovation; key technology risks to be addressed by this effort; and the competition. Program Director contact information can be found on the technology area page on the [SBIR/STTR website](#). Potential proposers are discouraged from submitting an executive summary to multiple Program Directors in parallel. Please note that responsiveness of Program Directors will be limited as the solicitation deadline approaches.

Commented [JG8]: Good idea to do this. I HIGHLY recommend it! After you send Exec Sum & Prog Director responds, you can then open a dialog (probably via email, even though phone would be better)

Phase I Proposal and Program Objectives. An SBIR Phase I proposal must describe the research effort needed to establish the feasibility of the proposed scientific or technical innovation. The primary objectives of the Phase I effort are to (i) determine whether the innovation has sufficient technical and broader/commercial impact merit for proceeding into a Phase II project and (ii) to assess commercial feasibility of the proposed innovation. The deliverable of an SBIR Phase I grant is a report describing technical accomplishments that will be included as part of the Phase II proposal package in FastLane.

Commented [JG9]: KEY statement: this is what your Phase I proposal needs to do!

Unacceptable Objectives. Examples of project objectives that are not acceptable for SBIR include proposed efforts directed toward systems studies; market research; commercial development of existing products or proven concepts; straightforward engineering design for packaging; laboratory evaluations not associated with the research and development process; incremental product or process improvements; evolutionary optimization of existing products; and evolutionary modifications to broaden the scope of an existing product or application. Projects determined unacceptable will be returned without review to the proposer. Phase I proposals returned without review by NSF are **NOT** eligible for reconsideration under the same program solicitation; however, proposals may be resubmitted under a subsequent solicitation after substantial revisions have been made.

Commented [JG10]: Equally important! Here are things to AVOID proposing to NSF in Phase I

Commented [JG11]: So NSF's big emphasis on commercialization does NOT mean they will support these kinds of projects. You must have a scientific or technical innovation that needs its feasibility proven, and then look to move it into commercialization by Phase III

Marking Proprietary Information. To the extent permitted by law, the Government will not release properly identified and marked technical and commercially sensitive data. If the proposal contains proprietary information, check the box at the bottom of the proposal cover page and identify proprietary technical data in the proposal by clearly marking the information and also providing a legend. Typically, proprietary information is marked in the text either with an asterisk at the beginning and end of the proprietary paragraph, underlining the proprietary sections, or choosing a different font type. An entire proposal should not be marked proprietary.

Commented [JG12]: Each agency has its own way that they want you to mark IP, so be sure to follow NSF's reqmts here

Debriefing on Unsuccessful Proposals. When a proposal is declined, verbatim copies of reviews (excluding the names of the reviewers) summaries of review panel deliberations, if any, and a description of the process by which the proposal was reviewed will be available electronically. Phase I proposals that have been declined or returned without review by NSF are NOT eligible for resubmission under the same program solicitation; however, proposals may be resubmitted under a subsequent solicitation after substantial revisions have been made.

Proposal Format and Sample Limitations. Samples, videotapes, slides, appendices, or other ancillary items will not be accepted. Websites containing demonstrations, etc., may be cited in the proposal, but reviewers are not required to access them. Multiple column formats are not accepted. Arial, Courier New, or Palatino Linotype at a font size of 10 points or larger or Times New Roman or Computer Modern fonts at a font size of 12 points or larger, should be used.

B. Registrations

Small businesses applying for NSF Phase I must complete the required registrations outlined below, prior to submitting the proposal in the NSF FastLane system. You must register the company name, address and other information identically in each of these systems. We recommend that you register your small business in the following order:

1. Dun and Bradstreet Data Universal Numbering System (DUNS). In accordance with the Office of Management and Budget policy directive 75 FR 22706, each proposer must have a DUNS number prior to submission of a proposal to NSF. Any subawardees named in the proposal must be registered in FastLane, which also requires the company's DUNS number (<https://iupdate.dnb.com/iUpdate/viewiUpdateHome.htm>).

2. System for Award Management (SAM) Registration. Each proposer (excluding subawardees) must initiate their company's registration in the SAM database prior to submission of the proposal. The SAM is the primary registrant database for the U.S. Government. This SAM registration must be maintained with current information at all times during which the organization has an active award or a proposal under consideration by NSF. To register in the SAM, go to <https://www.sam.gov/>. NSF is able to determine whether or not a firm has registered in SAM upon submission; no special documentation is required.

During proposal submission in FastLane, you may receive a warning that your firm's SAM registration is not active. This warning occurs if either 1) your firm is not registered in SAM; or 2) your firm's registration information in SAM does not match the firm's information in FastLane exactly. *This warning does not prevent proposal submission.* However, please contact the FastLane Help Desk in the days following the deadline to resolve the SAM registration warning message as this must be fixed to receive a federal award.

Commented [JG13]: Don't comply? NSF may toss out proposal for being "unresponsive"

Commented [JG14]: Here's details on the 4 required registrations. Begin immediately!

Commented [JG15]: Good advice! Even omitting a comma or inconsistent capitalization can cause problems

Commented [JG16]: Ask for a DUNS for government contractors, so you can get it immediately and at no charge

Commented [JG17]: SAM is an abbreviation for Pain In The Pants

Commented [JG18]: Has to be renewed annually. Make sure yours doesn't expire before the proposal submission date

3. Small Business Administration (SBA) Company Registration. Receipt of an SBC ID is required prior to submission of the proposal. SBA maintains and manages a Company Registry for proposing SBIR/STTR companies at <http://www.sbir.gov/registration/> to track ownership and affiliation requirements. The SBIR/STTR policy directive requires each small business concern (SBC) applying for a Phase I or Phase II award to register in the Company Registry prior to submitting an application. All SBCs must report and/or update ownership information to SBA prior to each SBIR/STTR application submission or if any information changes prior to award. Please see the SBA registration documentation section of the Proposal Submission Instructions.

Commented [JG19]: An easy registration

4. FastLane (NSF's electronic proposal submission system):

<https://www.fastlane.nsf.gov/n1/N1AddInst.html>.

Commented [JG20]: This is NSF's electronic proposal submission system that you MUST use (Can't use grants.gov)

C. Do's and Don'ts of Proposal Preparation and Submission

For more detailed help in preparing and submitting a proposal via the NSF FastLane system, please see the SBIR/STTR FastLane Submission Guide on the [SBIR/STTR website](#).

The following list shows the **DO's and DON'Ts** of proposal submission. Failure to comply with this list means that a proposal may be returned without review.

DO's of NSF SBIR Phase I Proposal Submission:

INCLUDE ALL REQUIRED ELEMENTS. Submit a proposal that is complete. Even if the FastLane system allows a proposal to be submitted without these items, **ALL** proposals must have each of the items listed below, **WITHOUT EXCEPTION**.

Commented [JG21]: Include them in this order with titles that match those in this list

- [Project Summary](#)
- [Project Description](#)
- [References Cited](#)
- [Biographical Sketches](#)
- [Budget and Subaward Budgets](#)
- [Budget Justification](#)
- [Current and Pending Support](#)
- [Collaborators and Other Affiliations](#)
- [Facilities, Equipment and Other Resources](#)
- [Supplementary Documents \(all that are applicable\)](#)

DO provide a company commercialization history (if applicable). Submit a [Company Commercialization History form](#) (on the NSF template) if your company has received an SBIR/STTR Phase II proposal previously (from any agency). **DO NOT** modify the NSF Company Commercialization template to include additional narrative or information beyond what is required on the form.

Commented [JG22]: Only submit if have any prior Phase IIs from any agency

DO NOT submit late. FastLane will not permit submission after 5:00 p.m. "proposer's time" on the deadline date. **Proposer's time is determined by the time zone of the company's address as registered with NSF.** Late proposals may not be accepted or will be returned without review.

- **DO NOT** submit a Project Description that is more than 15 pages long.
- **DO NOT** submit a Budget exceeding \$225,000.
- **DO NOT** include anything on Lines E2, F or G2 of the Budget. These are not allowable costs under a Phase I proposal.
- **DO NOT** submit a "Collaborative Proposal" (a special proposal type in FastLane). Collaboration with research institutions is encouraged; however, only one proposal, submitted by the company and with subawards to the research institution(s), should result.
- **DO NOT** submit a proposal that lacks sufficient technical/commercial potential substance to justify review; does not contain research proposed in science, engineering, or education; or contains **unacceptable objectives**.
- **DO NOT** upload additional information, beyond what is specifically required and permitted, into the proposal (marketing materials, research results/academic papers, patent applications, etc.)
- **DO NOT** upload any documents to the "ADDITIONAL Single Copy Documents" subsection under the "Single Copy Documents" section in FastLane with the following exceptions: 1) you must complete the "**Collaborators and Other Affiliations**" section; and 2) at your option, you may also complete the "List of Suggested Reviewers" section.
- **DO NOT** upload documents to the Supplementary Documents except those described in **Supplementary Documents**.

Commented [JG23]: Foreign travel, participant support costs, publication costs

Commented [JG24]: Key advice

D. Detailed Instructions on Proposal Preparation

1. Cover Sheet and Certification. Complete topic and subtopic fields should be included on the cover sheet. Designate one, and only one, topic and subtopic. All proposals must be electronically signed. If a proposer fails to disclose on the proposal cover sheet whether another Federal Agency has received this proposal (or an equivalent or overlapping proposal), the proposer could be liable for administrative, civil or criminal sanctions. NSF will not make awards that duplicate research funded or expected to be funded by other agencies, although in some cases NSF may fund portions of work described in an overlapping proposal provided that the budgets appropriately reduce costs and allocate costs among the various sponsors.

Commented [JG25]: FINALLY! Here are the actual instructions!

Commented [JG26]: Don't mess with them! Disclose if anything is similar or "overlapping" in any way

2. Project Summary [One (1) page MAXIMUM]. The Project Summary should be written in the third person, informative to other persons working in the same or related fields, and, insofar as possible, understandable to a scientifically or technically literate lay reader. It should not be an abstract of the proposal. Do not include proprietary information in the summary.

Commented [JG27]: But actually it is...

Proposals that do not contain a complete Project Summary will not be accepted by FastLane or will be returned without review. The Project Summary is completed in FastLane by entering information into the three text boxes in the Project Summary module. **Information MUST be entered into all three text boxes, or the proposal will not be accepted. Do not upload your Project Summary as a PDF file.**

Commented [JG28]: Got to fill SOMETHING in each of the 3 boxes

- **Box 1: Overview, Key Words, and Subtopic Name:** Describe the potential outcome(s) of the proposed activity in terms of a product, process, or service. Provide a list of key words or phrases that identify the areas of technical expertise to be invoked in reviewing the proposal; and the areas of application that are the initial target of the technology. Provide the subtopic name.
- **Box 2: Intellectual Merit:** This section MUST begin with "This Small Business Innovation Research Phase I project". Address the intellectual merits of the proposed activity. Do not include proprietary information in the summary. Briefly describe the technical hurdle(s) that will be addressed by the proposed R&D (which should be crucial to successful commercialization of the innovation), the goals of the proposed R&D, and a high-level summary of the plan to reach those goals.
- **Box 3: Broader/Commercial Impact:** In the short term, the proposed R&D activity is expected to bring the innovation closer to commercialization under a sustainable business model. In this box, describe the potential impacts the commercialization of this innovation will have on society. Examples include generating larger economic impacts, meeting societal needs, and enabling further scientific / technological understanding.

Commented [JG29]: i.e., COMMERCIALIZATION

Commented [JG30]: Fail to do? Proposal could be tossed out without technical review for being non-compliant

Commented [JG31]: Important!

Commented [JG32]: Boxes 1 & 3 have commercialization tone. Box 2 is the technical description

3. Project Description. [Fifteen (15) pages MAXIMUM]. The project description is the core of the proposal document, where you convince the SBIR Program Director and the expert reviewers that your proposed R&D project meets the NSF's criteria for intellectual merit and broader/commercial impact. Present evidence that the proposed technology is innovative, that development of it entails high technical risk, and that you have a credible plan to establish technical feasibility during Phase I. Convince the reviewers that the company and the project team have the necessary expertise, resources, and support to carry out the project, and that they are committed to building a viable business around the product/service being developed. Finally, present a compelling case that the project objectives will significantly advance the readiness of the technology and strengthen and validate its commercial position. **Proposals that fail to adequately address the required sections below in the Project Description may be returned without review.**

Commented [JG33]: The guts of the NSF Phase I proposal. You will (should) fill the 15 pages

Commented [JG34]: Remember, this is a sales document!

Elevator Pitch (no more than one page)

- The Customer. Describe the expected customer for the innovation. What customer needs or market pain points are you addressing?
- The Value Proposition. What are the benefits to the customer of your proposed innovation? What is the key differentiator of your company or technology? What is the potential societal value of your innovation?

Commented [JG35]: Wow, what a strange way to start the project description! But you need to follow NSF instructions and format. This is a 1 page commercialization sales pitch

- The Innovation: Succinctly describe your innovation. This section can contain proprietary information that could not be discussed in the Project Summary. What aspects are original, unusual, novel, disruptive, or transformative compared to the current state of the art?

Commented [JG36]: This is 1st of 3 times you will be asked to describe the innovation. Do not just repeat/regurgitate, but say something new or differently each time—but make sure all are consistent and compatible

Commented [JG37]: But mark it as such to protect it

The Commercial Opportunity (recommended length: 2-4 pages)

- Is there a broader societal need you are trying to address with this commercial opportunity? Please describe.
- Describe the market and addressable market for the innovation. Discuss the business economics and market drivers in the target industry.
- How has the market opportunity been validated? Describe your customers and your basic business model.
- Describe the competition. How do you expect the competitive landscape may change by the time your product/service enters the market?
- What are the key risks in bringing your innovation to market?
- Describe your commercialization approach. Discuss the potential economic benefits associated with your innovation, and provide estimates of the revenue potential, detailing your underlying assumptions.
- Describe the resources you expect will be needed to implement your commercialization approach.
- Describe your plan and expected timeline to secure these resources.

Commented [JG38]: The strangeness continues! NSF wants you to focus initially on commercialization, so comply or risk having your proposal tossed as non-compliant

Commented [JG39]: Good point: your competitors won't stand idly by as you enter the market and steal customers, so how might they react to your entry?

The Innovation (recommended length: 1-3 pages)

- Briefly describe the innovation. At what stage of technical development is the innovation? (A more detailed description can be provided in the Technical Discussion and R&D Plan, as described below).
- Describe the key technical challenges and risks in bringing the innovation to market. Which of these will be your focus in the proposed Phase I project?
- Describe the status of the intellectual property associated with this project and how you plan to protect it.
- NSF Lineage: Does your project have roots in non-SBIR/STTR NSF funding, either to the company or other organizations/institutions? If possible, please list the NSF award number(s) and division(s).

Commented [JG40]: Good point: you likely don't have all the marketing, sales and commercialization staff that you will need (depending on your Phase III strategy), so when/how will you secure that expertise?

Commented [JG41]: Here's the 2nd of 3 times you address your innovation in the PD. Consistent/compatible but no regurgitation

Commented [JG42]: Note this section of the Project Description still has a commercialization focus.

Commented [JG43]: Think twice if you are relying completely on patents!

The Company/Team (recommended length: 1-3 pages)

- Describe the company founders or key participants in this proposed project. What level of effort will these persons devote to the proposed Phase I activities? How does the background and experience of the team enhance the credibility of the effort; have they previously taken similar products/services to market?
- Describe your vision for the company and the company's expected impact over the next five years.

Commented [JG44]: This is a "transition" section, where you still talk about commercialization, but also start talking about technical capes of your team

- If the company has existing operations, describe how the proposed effort would fit into these activities. Describe the revenue history, if any, for the past three years. Include government funding and private investment in this discussion.
- Will you have consultants or subawardees working on this project? If so, what is their expertise, affiliation, and contribution to the project?

Technical Discussion and R&D Plan (minimum length: 5 pages, recommended length: 5-7 pages)

- Describe the **innovation** in sufficient technical depth for a knowledgeable reviewer to understand why it is innovative and how it can provide benefits in the target applications. Supplement this description with any necessary background information.
- Describe the **key objectives** to be accomplished during the Phase I research, including the questions that must be answered to determine the technical AND commercial feasibility of the proposed concept.
- Describe the **critical technical milestones** that must be met to get the product or service to market.
- Present an **R&D plan, with timeline**. What are the objectives, and what experiments, computations, etc. are planned to reach those objectives?

4. References Cited. Provide a comprehensive listing of relevant references, including patent numbers and other relevant intellectual property citations. A list of References Cited must be uploaded into the system. If there are no references cited in the proposal, please indicate this by putting the statement "No References Cited" into this module.

5. Biographical Sketches. Provide a resume for the Principal Investigator (PI) and senior personnel (individuals with critical expertise who will be working on the project and are employed at the proposing company or at a subaward institution). Information regarding consultants should also be provided in this format but instead uploaded as part of the preliminary Budget Justification. Biographical sketches should not exceed two pages per person. Do not include personal information such as home address in biographical sketches. Provide information in the following sections: **(I) Education:** Institution, Location, Major/Concentration, Degree, and Year. **(II) Relevant Experience:** Include technical and/or commercial experience. List in reverse chronological order beginning with the current position. **(III) Products:** Includes patents, publications, etc. Up to 5 may be listed that are related to the proposed work and up to 5 that are significant but not related to the proposed work. You are not required to use the NSF Biographical Sketch template.

6. Budget and Subaward Budgets. Detailed documentation of all budget line items is required and MUST be documented in detail on the Budget Justification page (see next section). The proposed budget should reflect the needs of the proposed R&D project. Line numbers below refer to the required budget format in FastLane, NSF's proposal

Commented [JG45]: Finally! Here is the technical section of the Project Description. It should be only about 50% of the PD, with the first half being all of the commercialization sections covered above

Commented [JG46]: Here's the 3rd time you describe the innovation in the PD. Do you think the innovativeness of your project is an important consideration?? Consistent/compatible but not a regurgitation

Commented [JG47]: Important part of the R&D plan

Commented [JG48]: Don't forget to include the questions!

Commented [JG49]: Important part of the R&D plan

Commented [JG50]: I suggest listing tasks for each objective. Include a graphical timeline. DETAILS on HOW you are going to do this R&D work

Commented [JG51]: Important. Would be VERY unusual for an NSF proposal to not include literature references

Commented [JG52]: Important

Commented [JG53]: So consultants' bios go elsewhere

Commented [JG54]: Important!

Commented [JG55]: Put all bios in this format, with these headings, in this order

Commented [JG56]: The "streamlined budget pilot" is no more (thankfully)

submission system. The total budget shall not exceed \$225,000 for the Phase I proposal.

Line A - Senior Personnel. List the Principal Investigator and Senior Personnel by name, their time commitments (in calendar months), and the dollar amount requested. Senior Personnel are individuals with critical expertise who are employed at the proposing company. The PI must be budgeted for a minimum of one month to the proposed project and may be budgeted for more than two months (deviates from PAPPG-Chapter II.C.2g(i)(a)). The best source in determining an appropriate salary request is the [Bureau of Labor Statistics](#). In the Budget Justification provide the title; annual, monthly, or hourly salary rate; time commitment; a calculation of the total requested salary; and a description of responsibilities for the PI and each of the Senior Personnel.

Commented [JG57]: As well as not working >19.6 hrs/wk elsewhere during the Phase I project

Commented [JG58]: What you are currently paying staff, and what you have to pay to get and retain quality people are also considerations. Use BLS data to demo that your labor rates are "reasonable"

Line B - Other Personnel. List the number of additional general personnel (technicians, programmers, etc.) and the total monetary and time commitment for these personnel. These personnel must be employed at the proposing company. The details of the individual commitments, roles, and requested funds should be provided in the Budget Justification. Do NOT list company employees under B.1, B.3, or B.4 in the main budget. Post-doctoral scholars and students (undergraduate and graduate) should be listed on a subaward budget to a research institution, unless they are employees of the company, in which case they may be listed under Lines A, B.2, or B.6, as appropriate.

Line C - Fringe Benefits. It is recommended that proposers allot funds for fringe benefits here ONLY if the proposer's usual (established) accounting practices provide that fringe benefits be treated as direct costs. Otherwise, fringe benefits should be included in Line I, Indirect costs. (Line I+ Line C) should not be more than 150% of (Line A + Line B).

Commented [JG59]: But to clarify: only put the fringe related to DIRECT labor on line C (that related to INDIRECT labor should be rolled into your indirect rate at Line I)

Line D - Equipment. Equipment may NOT be purchased on an NSF SBIR Phase I grant. Equipment is defined as an item of property that has an acquisition cost of \$5,000 or more (unless the organization has established lower levels) and an expected service life of more than one year.

Commented [JG60]: Clarification: can't be bought out of DIRECT portion of NSF Phase I budget. Can buy out of indirect (depreciation expense) and/or fee (aka "residual funds")

Line E.1 - Travel. One domestic travel trip for up to two persons (normally the PI and an individual associated with business operations) is required to attend a two-day Grantee Conference in the DC area. The intent of this workshop is to discuss the research program with a program director, learn about preparing a Phase II proposal, and learn what steps and skills will be needed to succeed in Phase I, II, and beyond. Therefore, this trip must be included in the Phase I budget. An explicit statement acknowledging attendance at the grantee workshop is required on the Budget Justification page. A reasonable budget estimate is \$2,000 per person to cover the conference registration fees and travel expenses. All other budgeted travel must be necessary for the successful execution of the Phase I R&D. Travel for purposes other

than the project R&D (e.g. marketing, customer engagements) is not permitted in the Phase I budget.

Line E.2 - Foreign travel expenses (Line E.2) are NOT permitted.

Line F - Participant Support Costs. Participant support costs are NOT permitted on a Phase I grant.

Line G.1 - Materials and Supplies. Materials and supplies are defined as tangible personal property, other than equipment, costing less than \$5,000, or other lower threshold consistent with the policy established by the proposing organization. The proposal Budget Justification should indicate the specifics of the materials and supplies required, including an estimated cost for each item. Items with a total cost exceeding \$5,000 should be accompanied by pricing documentation (e.g. quote, link to online price list, prior purchase order or invoice), to be included in the budget justification.

Line G.2 - Publication Costs/Documentation Costs. Publication Costs/Documentation costs are NOT permitted on a Phase I proposal.

Line G.3 - Consultant Services. Consultant services include specialized work that will be performed by professionals that are not employees of the proposing small business. Purchases of analytical services, other services, or fabricated components from commercial sources should not be listed under consultant services and should instead be reported in the budget under Other Direct Costs/Other (Line G.6). No person who is an equity holder, employee, or officer of the proposing small business may be paid as a consultant unless an exception is recommended by the Program Director and approved by the Division Director for the Division of Industrial Innovation and Partnerships. All research on an SBIR project, including that conducted by consultants, must be carried out in the U.S. (See definition of [Place of Performance](#).)

Commented [JG61]: IMPORTANT POINT: such services do NOT count towards the 33% maximum that you can subcontract in Phase I

Letters of Collaboration. Each consultant, whether paid or unpaid, must provide a signed statement that confirms availability, time commitment, role in the project, and the agreed consulting rate (not to exceed \$600 per day; see below). Provide this letter as part of the Budget Justification and NOT as a Supplementary Document.

Consultant Rate. The consulting rate under this solicitation can be a maximum of \$600 per day (NSF defines a day as 8 hours). Consultant travel should be shown under the domestic travel category, E-1, but counts as an outsourcing expense for the purpose of determining whether the small business concern meets the minimum level of effort for an SBIR proposal.

Commented [JG62]: Clarification: consultants can't charge their LABOR at over \$600/day, but they can also charge their indirect and profit, so consultant's daily rate can exceed \$600 by those amounts

Biographical Sketch. Provide a biographical sketch for each consultant. Maximum of two pages per person. Provide this in the Budget Justification section, NOT in the Biographical Sketches section.

Line G.4 - Computer Services. Funds may be allocated for computer services. Requested items with a total cost exceeding \$5,000 should be accompanied by pricing documentation (e.g. quote, link to online price list, prior purchase order or invoice), to be included in the budget justification.

Line G.5 - Subawards. Subawards may be utilized when a significant portion of the work will be performed by another organization and is generally not commercially available, such as work performed by a university or research laboratory. Purchases of analytical services, other services, or fabricated components from commercial sources should not be listed under subawards and should instead be reported in the budget under Other Direct Costs/Other (Line G.6).

Subawards require a separate sub-budget and Sub-budget Justification in FastLane. The format for the sub-budget and Sub-budget Justification are the same as for the main budget. Subawardees (the institution, not the individual PI or researcher) should also provide a letter of collaboration that confirms the role of the subaward organization in the project and explicitly states the subaward amount. Provide this letter as part of the Budget Justification and NOT as a Supplementary Document.

Commented [JG63]: Required of subcontractors, not consultants

Line G.6 - Other. This line includes the purchase of analytical services, other services, or fabricated components from commercial sources. Requested items with a total cost exceeding \$5,000 should be accompanied by pricing documentation (e.g. quote, link to online price list, prior purchase order or invoice), to be included in the budget justification.

The grantee may spend up to \$10,000 as a direct charge on line G.6 to this Phase I award for the following specific purposes:

Commented [JG64]: That's nice, but odd that such accounting costs can be treated as direct (usually are indirect) costs

- Hiring a certified public accountant (CPA) to prepare audited, compiled, or reviewed financial statements
- Hiring a CPA to perform an initial financial viability assessment based on standard financial ratios so the awardee organization would have time to improve their financial position prior to submitting the Phase II proposal
- Hiring a CPA to review the adequacy of the awardee's project cost accounting system
- Purchasing a project cost accounting system

If the grantee elects to budget funds for one of the above purposes, the budget justification should include a brief description of the desired use of funds, and the use of funds must be approved by the cognizant Program Director, prior to award. These funds may **NOT** be spent for any other commercial or business purpose, such as to support business development, marketing activities, regulatory affairs, or to solicit investments or other funding.

Line I - Indirect Costs. Indirect costs are defined as costs that are necessary and appropriate for the operation of the business, but which are not specifically allocated to

the NSF SBIR project. Specify the base and rate. Indirect costs plus fringe benefits is limited to an effective rate of 150% of salaries and wages. That is, (Line I+ Line C) should not be more than 150% of (Line A + Line B). Common indirect cost expenses include legal and accounting expenses, employee health insurance, fringe benefits, rent, and utilities. The following expenses will NOT be funded as part of the indirect cost pools, so any established indirect costs rates and calculations for a company should be reduced for the purposes of this proposal to exclude:

- Independent research and development
- Patent and patent related expenses will not be funded as either a direct or indirect cost
- Sales and marketing expenses
- Business development
- Manufacturing and production expenses

Line K - Small Business Fee. Up to seven percent (7%) of the total indirect and direct project costs may be requested as a fee. The fee is intended to be consistent with normal profit margins provided to profit-making firms for R&D work. The fee applies solely to the small business concern receiving the award and not to any other participant in the project. The fee is not a direct or indirect "cost" item and may be used by the small business concern for any purpose, including additional effort under the SBIR award (i.e., the "Prohibited Expenditures" list does not apply).

Prohibited Expenditures (including but not limited to Lines D, E.2, F, and G.2). Equipment, patent expenses, tuition costs, and foreign travel are not allowable expenditures. However, these expenses may be permitted if budgeted under Line K - Small Business Fee. (maximum 7% of the total direct plus indirect costs).

7. Budget Justification

The Budget Justification is uploaded in the Budget Module of FastLane. Provide details for each non-zero line item of the budget, including a description and cost estimates. Identify each line item by its letter and number (e.g., G.5 - Subawards). Each non-zero line item should be described in the Budget Justification, but several sections also require more specific information and are listed below:

Lines A and B - Personnel. Provide the names and titles of all personnel and a concise description of their responsibilities on the project, including their budgeted time commitment. Provide the actual annual salary information and calculation that justifies the amounts requested.

Line C - Fringe Benefits. Describe what is included in fringe benefits and the calculations that were used to arrive at the amount requested.

Line E.1 - Domestic Travel. Describe the purpose for domestic travel and acknowledge attendance at the grantee workshop. For trips other than the grantees

Commented [JG65]: 150% is NSF maximum. 50% is their "Safe Rate."

Commented [JG66]: Aka "unallowables"

Commented [JG67]: Note what the WON'T pay for

Commented [JG68]: ASK FOR IT!

Commented [JG69]: So apparently will not allow any consultants or subcontractors to get fee/profit

Commented [JG70]: THIS IS WHY YOU MUST ASK FOR FEE!! YOU CAN DO WHATEVER YOU WANT WITH IT, INCLUDING EXPENSES LISTED ABOVE AS "UNALLOWABLE"

Commented [JG71]: Key point! Kudos to NSF for saying so. Do NOT list in the budget justification how you plan to use the fee

Commented [JG72]: MUST be included

conference, include the expected number of trips, number of persons travelling, length of each trip, purpose and destination of each trip, and a rough breakdown of the expected cost of each trip.

Line G.1 - Materials and Supplies. Provide an itemized list of the materials and supplies, with the quantity, unit cost, and total cost for each item. Items with a total line item cost over \$5,000 should have quotes or pricing documentation included as separate pages in the Budget Justification.

Line G.3 - Consultant Services. Include a copy of the signed Letter of Collaboration. Include a biographical sketch for each consultant.

Line G.5 - Subawards. Include a few sentences describing the scope and objective of the subaward.

Line G.6 - Other. Any single cost of more than \$5,000 should be documented by inclusion of pricing info (e.g. a quote, past purchase order, link to online price list).

Line I - Indirect Costs. Provide the calculations that were used to arrive at the amount requested. Please briefly indicate the major cost categories that are included as indirect costs.

Line K - Small Business Fee. Provide the calculation that was used to arrive at the amount requested.

Please note that there is no page limit for the Budget and Sub-budget Justification. That is, the PAPPG restriction on page limits is not enforced for this solicitation, but all content in the Budget Justification must be related to the Budget.

You can find a sample Budget, Sub-budget, Budget Justification, and Sub-budget Justification here:

https://www.nsf.gov/eng/iip/sbir/documents/PhaseI_Budget_Guide.pdf

8. **Current and Pending Support of Principal Investigator and Senior Personnel.**

Information in this module is collected so that reviewers have visibility into the potential availability of company personnel during the period of performance, if awarded.

Types of Support / Activities. For the PI and each of the senior personnel (individuals with critical expertise who will be working on the project and are employed at the proposing company or at a subaward institution), provide information regarding each of the following that could require effort during the proposed NSF SBIR Phase I performance period, regardless of whether the person will receive a salary from the activity:

- All current and pending support for ongoing projects and proposals (from any source), including continuing grants funding.

Commented [JG73]: Disclose completely, including this proposal

- Proposals submitted. Note that concurrent submission of a proposal to other organizations will not influence its review by NSF.
- Upcoming submissions.
- **The Phase I proposal being submitted – note that this is considered "pending" and therefore MUST appear in the Current and Pending Support form for each PI and senior personnel.**

Commented [JG74]: How clear is your crystal ball? How do you know what customers may want in the future? Or what topics DOD will have for SBIR/STTR?

Information Needed

- Name of sponsoring organization.
- Total award amount (if already awarded) or expected award amount (if pending) for the entire award period covered (including indirect costs).
- Title and performance period of the proposal.
- Annual person-months (calendar months) devoted to the project by the PI or senior personnel.

9. Collaborators & Other Affiliations Information: For the PI and each of the senior personnel, list all institutional affiliations (other employers, consulting relationships, officer/director/trustee roles, etc.) and collaborators (co-authors, scientific partners, student/advisor relationships) that have occurred in the last four years, as a single PDF file. This document will not be viewable by reviewers, but will be used by NSF to help identify potential conflicts or bias in the selection of reviewers. Also see guidance in the [PAPPG](#).

Commented [JG75]: Relatively new section, used to identify reviewers with "potential conflicts or bias."

10. Facilities, Equipment and Other Resources. Specify the availability and location of significant equipment, instrumentation, computers, and physical facilities necessary to complete the portion of the research that is to be carried out by the proposing firm in Phase I. **Purchase of equipment is NOT permitted in a Phase I project.** If the equipment, instrumentation, computers, and facilities for this research are not the property (owned or leased) of the proposing firm, include a statement signed by the owner or lessor which affirms the availability of these facilities for use in the proposed research, reasonable lease or rental costs for their use, and any other associated costs. Upload images of the scanned statements into this section.

Commented [JG76]: Show you have access to everything needed to do this project

11. Supplementary Documents. The supplementary documents permitted in a Phase I proposal are limited to the following (if applicable):

S1. Data Management Plan (required). Proposals MUST contain a supplementary document labeled "Data Management Plan (DMP)", which should include the statement, "All data generated in this SBIR Phase I project is considered proprietary." This single sentence is sufficient to fulfill the DMP requirement, but applicants may add more detail about how the resulting data will be managed if they desire. See exceptions: https://www.nsf.gov/eng/general/ENG_DMP_Policy.pdf

Commented [JG77]: Read this carefully. Read it again. Get it? Your DMP is 1 sentence, and they tell you what that sentence should be. Any questions?

S2. Mentoring Plan (required if the budget includes subawards requesting funds for postdoctoral scholars). If a proposal requests funding to support post-doctoral

scholars at a research institution, a Postdoctoral Mentoring Plan MUST be uploaded to the system. Describe only the mentoring activities that will be provided to all postdoctoral researchers supported by the project. A template can be obtained here: https://www.nsf.gov/eng/iip/sbir/documents/Sample_Postdoc_Mentoring_Plan.doc.

S3. Letter(s) of Support (strongly recommended; no more than three letters).

Letters of support act as an indication of market validation for the proposed innovation and add significant credibility to the proposed effort. Letters of support should demonstrate that the company has initiated dialogue with relevant stakeholders (potential customers, strategic partners or investors) for the proposed innovation and that a legitimate business opportunity may exist should the technology prove feasible. The letter(s) must contain affiliation and contact information for the signatory stakeholder. Letters and supporting documents from consultants and subcontractors (or any personnel identified in the preliminary Budget Justification) are NOT considered letters of support and instead should be included in the preliminary Budget Justification section.

Commented [JG78]: We agree—STRONGLY RECOMMEND that you include these letters.

Commented [JG79]: 3 key categories of folks from whom you want letters of COMMERCIALIZATION SUPPORT

S4. Company Commercialization History (if applicable). A Company

Commercialization History is required for all proposers certifying receipt of previous Phase II awards from any Federal agency on the third page of the Cover Page in question # 11. The [NSF Commercialization History Template](#) MUST be used. All items must be addressed in the format outlined in this template. Changes to the NSF template, additional narratives and/or commercialization history documents from other agencies are not permitted.

S5. Human Subjects and Vertebrate Animals (if applicable). If human subjects

Institutional Review Board (IRB) approval is indicated, it must be in-hand at the time of submission or there must be a plan for such approval. A supporting letter regarding IRB approval should be provided under supplementary documents. The approval must be readily attainable within six weeks of informal notification of recommendation for award to ensure continued processing for funding. The small business has three basic options with regard to human subjects review: 1) Establish your own IRB (see Office for Human Research Protections (OHRP) at Health and Human Services (HHS) <http://www.hhs.gov/ohrp/assurances/index.html#registernew>; 2) Use the review board of a (usually local) university or research institution, either via consultants to the project, a project subcontract, or directly through its own contacts; 3) Use a commercial company. Please refer to the [instructions here](#) on the necessary supplementary documents. Note that in some cases, product testing involves human subjects. Look for federal-wide assurances under the Office for Human Research Protections website (<http://www.hhs.gov/ohrp/index.html>). Animal use in funded projects requires approval of the company or collaborating institutions' Institutional Animal Care and Use Committee (IACUC). Please refer to <http://www.aphis.usda.gov/> for additional information.

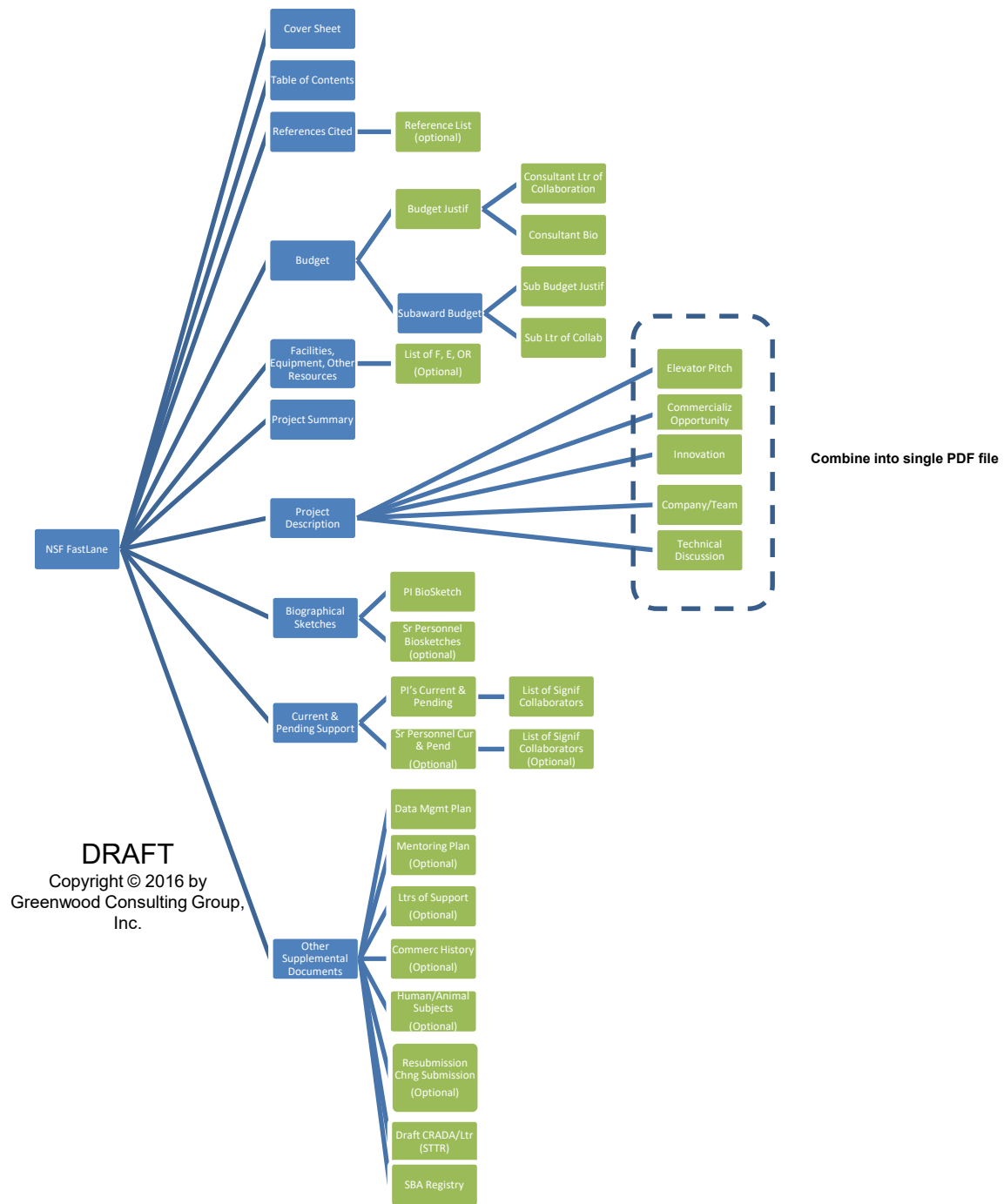
S6. Resubmission Change Description (if applicable; no more than one page). A

declined proposal may be resubmitted, but only after it has undergone substantial

Commented [JG80]: If resubmitting this proposal, this is a great opportunity to explain how you have atoned for your sins (made changes recommended by NSF reviewers)

revision. A resubmitted proposal that has not clearly taken into account the major comments or concerns resulting from the prior NSF review may be returned without review. The Foundation will treat the revised proposal as a new proposal, subject to the standard review procedures. If a Phase I proposing company indicates on the cover sheet that the proposal is a resubmission, the proposal must include a one-page maximum document in the Other Supplementary Documents module detailing the substantial revisions that have been made to the original submission.

Proposers are reminded to identify the NSF publication number (located on the first page of this document) in the program solicitation block on the NSF Cover Sheet For Proposal to the National Science Foundation. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.



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“Must Cover” Items for Typical PhI Proposal Sections

1. Identification/Significance

- Include the theme
- What’s innovative about your approach
- What’s the feasibility question/measure/success criterion?
- Why should the reader care about this project?
- *“It doesn’t matter how good the approach is, how innovative the idea is, how great the PI/team is, how excellent the research facilities are if what you are proposing lacks significance...”*

--JoAnn Goodnight, NIH Program Manager

2. Technical objectives

- Determination of feasibility should be one objective

3. Work plan

- Relationship of tasks to objectives (see #2 above)
- Tasks required to conclude feasibility
- Timeline
- Clarify how each task is being done, and by whom

4. Related R&D

- What your people have done/are currently doing relevant to this?
- How do these experiences give you credibility on this project?
- How is the current project different from the other work?
 - Important in “Waste, Fraud & Abuse” environment of the reauthorization
- Summarize key contributions to state-of-the-art

“Must Cover” Items for Typical PhI Proposal Sections

5. Key players

- Updated resumes, showing position with proposing company
- Relevant education & experience
- KISS the publications & presentations
- Emphasize small company, but include subs & RIs
- Clarify roles of each player
- Justify why subs & RIs were chosen for this project
- Limit # of players in Phase 1
- Avoid gaps in technical expertise and Phase 3 application/market

6. Future R&D

- Phase 2 vision
- Other Phase 1's that might come from success of this project
- Filling the Phase 2 \Rightarrow 3 gap

7. Commercialization

- Contract agencies: how will you get this into their hands in Phase 3?
- Quantify but state and justify assumptions
- Avoid WAGS and voodoo assumptions

8. References

- KISS & Relevant

9. Cost Proposal

- Always ask for indirect/G&A/F&A/overhead
- Always ask for fee/profit
- Advanced or Partial payments, not progress payments

A CRITICAL PART OF THE PROPOSAL: THE ABSTRACT

- Assume the reviewer is bored from reading dull proposal after dull proposal...
 - Your abstract needs to wake him or her up
- Assume the reviewer already has read more good proposals than he or she can fund
 - Convince him/her quickly that yours deserves consideration
- Assume you win an SBIR/STTR award
 - The abstract will be published--what do you want the world to know about your project?

ADVICE ON THE ABSTRACT

- Always follow your agency's requirements re: content, length, etc.
- Avoid long-winded background descriptions
- Avoid typos, misspellings, bad grammar, etc
 - You only have one chance to make a good first impression
- Do not use, verbatim, sentences or paragraphs in abstract that also appear in proposal body

Title:	Durable, Low Friction Coating for Variable Speed Refueling Drogue (VSRD)	Award Amount:	\$149,984.00
Agency:	DOD		

Abstract:

ABSTRACT: Current surface modification and lubricant technologies are either ineffective or too expensive and difficult to apply on US Air Force refueling drogue components. A low-cost, non-toxic, environmentally benign, easy to apply lubricant could significantly reduce US Air Force cost burdens to perform aerial refueling exercises and missions. We propose an advanced lubricant technology that, in its first-generation form, exhibited full compliance to MIL-L-23398 performance specifications, and has been fully characterized using sophisticated optical, FTIR, XPS, and AFM spectroscopic techniques. Our permanent, ultra-low coefficient of friction, durable, extreme-pressure resistant lubricant is offered as a cost-effective surface pre-treatment that will synergistically enhance the hydrodynamic performance of liquid lubricants and greases presently in service. Management of friction and wear of drogue refueling components with our lubricant technology will allow the US Air Force to achieve its performance and operating cost targets. An added benefit of our technology will be to extend the service life of the lubricated part and ultimately the life of the drogue refueling system. BENEFIT: Air Force personnel will be pleased with the immediate cost, performance and application benefits from our proposed low-cost, ultra-low coefficient of friction, non-toxic, zero-VOC, environmentally benign, non-flammable, corrosion inhibiting, durable, high load-carrying capacity lubricant coating. Our lubricant technology will have a very low cost relative to mechanical grinding and polishing processes, and traditional lubricants and greases. In addition to outperforming those dated, well-worn products and expensive procedures, our lubricant provides application simplicity through HVLP, VOC-compliant aerosol spray, dip or brush application. We have direct experience developing a successful first-generation lubricant technology through the SBIR program. Advancements to this technology will be conducted to meet further US Army, ASTM, SAE and STLE tribological test standards, specifications and efficiency improvement requirements. Potential Commercial Applications include aerospace servomotor applications, camshaft lobes, recreational rifle bolts and actions, tracked vehicle pins, ring and pinion gear sets, piston skirts, aircraft engine thrust bearings, ring and bore assemblies, and valve seats.

Principal Investigator:

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alopez4@yahoo.com

Business Contact:

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Small Business Information at Submission:

Texas High Energy Materials 7301 Ranch Road 620 N. Suite 155.276 Austin, TX -	
EIN/Tax ID:	273330689
DUNS:	N/A
Number of Employees:	
Woman-Owned:	No
Minority-	Yes

Title: A mechanism-based computational tool to optimize pulmonary drug delivery

Agency: HHS

Contract: 1R43HL120517-01

Award Amount: \$196,237.00

Abstract:

DESCRIPTION (provided by applicant): Coronary artery disease (CAD) is a national and worldwide epidemic that places the largest clinical and economic burden on the healthcare system of any disease condition. Patients with stable and acute coronary conditions are often treated with percutaneous coronary intervention (PCI), including stenting. Up to 85% of all coronary stents are under-deployed leading to higher target revascularization rates (TVR), in-stent restenosis, in-stent thrombosis, and therefore, higher mortality. Under-deployment is related to several factors, including inaccurate manufacturer ex vivo versus in vivo pressure/diameter compliance relationships, and thus requires further post-dilatation typically with a stiffer, non-compliant balloon. However, post-dilatation balloons still fail to provide adequate expansion because, similar to the stent deployment balloons, they also rely on ex vivo compliance charts to determine in vivo size. Consequently, a tool is needed to provide accurate balloon sizing information to the clinician in real-time during balloon inflation. A novel conductance balloon (CB) catheter system has been developed that functions as a typical post-dilatation catheter, but with additional functionality for accurate measurement and display of real-time balloon size. The CB catheter utilizes a simple physical law (Ohm's Law) to determine the balloon cross-sectional area (CSA)/diameter through electrical voltage measurements made inside the device during inflation. The sizing results are displayed in-real time on a simple bed-side console display to aid the physician during balloon expansion (i.e., similar to current displays that show pressure during inflation). Preliminary results with the CB catheter system on the bench and in vivo in healthy swine showed excellent accuracy (1.4% diameter error), repeatability (1.1% diameter error), and safety. However, additional work is needed to update the console and catheter and further validate the system in atherosclerotic swine (this Phase I application) before translation to the clinic (future Phase II application). Therefore, in this Phase I application, we propose the creation of a clinically-ready CB catheter system and its validation in vivo in atherosclerotic swine. Based on the strong physics foundation of the technology, the excellent preliminary results, and the previously known safety of a related system, the CB catheter system is expected to provide highly accurate and repeatable real-time digital display of balloon size across the entire coronary stent range in any type of diseased vessel condition with virtually no physician training required. After the completion of this Phase I project, we expect a quick and logical translation of the CB catheter system to a Phase II project in man. This project has the ability to impact patients with multiple comorbidities and reach across various NIH Institutes and Centers including the NIDDK, NHLBI, and NINDS. PUBLIC HEALTH RELEVANCE PUBLIC HEALTH RELEVANCE: A post-dilatation device that does not rely on inaccurate pressure/diameter compliance charts is needed to ensure minimal stent area and stent apposition during percutaneous coronary intervention. The purpose of this Phase I proposal is the development and validation (in atherosclerotic swine) of a clinically relevant conductance balloon catheter system that relies on electrical voltage measurements to provide accurate, real-time sizing measurements during stent post-dilatation.

Principal Investigator:

Template for Volume Two: Technical Proposal

1. Identification and Significance of the Problem or Opportunity.

Define the specific technical problem or opportunity addressed and its importance. (one page)

2. Phase I Technical Objectives.

Enumerate the specific objectives of the Phase I work, including the questions the research and development effort will try to answer to determine the feasibility of the proposed approach.

3. Phase I Statement of Work (including Subcontractors' Efforts).

- (a) Provide an explicit, detailed description of the Phase I approach. If a Phase I option is required or allowed by the Component, describe appropriate research activities which would commence at the end of Phase I should the Component elect to exercise the option. The Statement of Work should indicate what tasks are planned, how and where the work will be conducted, a schedule of major events, and the final product(s) to be delivered. The Phase I effort should attempt to determine the technical feasibility of the proposed concept. The methods planned to achieve each objective or task should be discussed explicitly and in detail. This section should be a substantial portion of the Technical Volume section.
- (b) Due to the short timeframe associated with Phase I of the SBIR process, the Navy does not recommend the submission of Phase I proposals that require the use of Human/Animal Testing, or Recombinant DNA. This solicitation may contain topics that have been identified by the Program Manager as research or activities involving Human/Animal Subjects and/or Recombinant DNA. In the event that Phase I performance includes performance of these kinds of research or activities, please identify the applicable protocols and how those protocols will be followed during Phase I. Please note that funds cannot be released or used on any portion of the project involving human/animal subjects or recombinant DNA research or activities until all of the proper approvals have been obtained. (see DoD 2013.1 SBIR Solicitation Sections 4.7 – 4.9).

(Objectives and Statement of Work, 10-12 pages)

4. Related Work.

Describe significant activities directly related to the proposed effort, including any conducted by the principal investigator, the proposing firm, consultants, or others. Describe how these activities interface with the proposed project and discuss any planned coordination with outside sources. The technical volume must persuade reviewers of the proposer's awareness of the state-of-the-art in the specific topic. Describe previous work not directly related to the proposed effort but similar. Provide the following: (1) a short description, (2) the client for which work was performed (including the individual to be contacted and phone number), and (3) date of completion. (one page)

5. Relationship with Future Research or Research and Development.

- (a) State the anticipated results of the proposed approach if the project is successful.
- (b) Discuss the significance of the Phase I effort in providing a foundation for a Phase II research or research and development effort.

Navsea Ph1 "Template" at
<http://www.navsbir.com/navsea>
(10-12 pp objectives + work plan)

There is now a Forms-D version, but will be replaced by Forms-E version ~Jan '18

http://grants.nih.gov/grants/ElectronicReceipt/files/Annotated_Forms_FORMS-C_SmallBus-1.pdf



Small Business Grant Applications:
Annotated SF424 (R&R) Form Set
* FORMS-C Series *



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7	R&R Senior/Key Person Profile (Expanded)
8	R&R Budget
12	R&R Subaward Budget Attachment(s) Form
13	SBIR/STTR Information
15	PHS 398 Cover Page Supplement
17	PHS 398 Research Plan
18	Planned Enrollment Report
19	Cumulative Inclusion Enrollment Report

Important Notes

- The Application Guide and Supplemental Instructions found at <http://grants.nih.gov/grants/funding/424/index.htm>, and the announcement text for the target Funding Opportunity Announcement (FOA) remain the official documents for defining application requirements. This resource is meant to complement, not replace, those documents.
- Don't forget to periodically check the Related Notices section of the FOA for any updates to instructions or policies since the opportunity was posted. At a minimum, check this section when you download the application and again a week or two before the due date.
- The red outlined boxes are fields required by Grants.gov for all federal agencies. The Application Guide and this resource describe NIH form requirements above what is marked on the federal-wide forms.
- The blue boxes throughout this resource represent processing notes and eRA system business rule checks (i.e., validations).
- Upon submission, NIH eRA systems check submitted applications against many of the business rules defined in the Application Guide. Not all system validations are contained in this resource. For a complete list of validations that are systematically enforced see: <http://grants.nih.gov/grants/ElectronicReceipt/files/SP-eSub-validations.pdf>. Be aware that additional manual application checks may be conducted by NIH staff – especially for FOA-specific requirements.
- All application attachments must be in PDF format. PDF Guidelines can be found at: http://grants.nih.gov/grants/ElectronicReceipt/pdf_guidelines.htm.

SF 424 (R&R) APPLICATION FOR FEDERAL ASSISTANCE Page 2

14. PROJECT DIRECTOR/PRINCIPAL INVESTIGATOR CONTACT INFORMATION

Prefix: [] First Name: [] Middle Name: []
 Last Name: [] Suffix: []
PDI/PI first/last name should match name on file for Commons ID provided in the Credential field of the R&R Senior/Key Person Profile (Expanded) form.

Position/Title: []
 Organization Name: []
 Department: [] Division: []
 Street1: []
 Street2: []
 City: [] County/Parish: []
 State: [] Province: []
 Country: [USA: UNITED STATES] ZIP/Postal Code: []
 Phone Number: [] Fax Number: []
 Email: []

15. ESTIMATED PROJECT FUNDING

Manually enter amounts. Guideline: SBIR/STTR Phase I - \$150K, Phase II - \$11M.

a. Total Federal Funds Requested []
 b. Total Non-Federal Funds []
 c. Total Federal & Non-Federal Funds []
 d. Estimated Program Income []

16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?

a. YES THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON: DATE: []
SBIR/STTR: Check "No-Program is not covered by E.O. 12372".

b. NO PROGRAM IS NOT COVERED BY E.O. 12372; OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR.

17. By signing this application, I certify (I) [] organization that is directly generated by the proposed project. The statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances * and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may be subject to criminal, civil, or administrative penalties. (U.S. Code, Title 18, Section 1001)

I agree. See Supplemental Grant Application Instructions for full list of NIH policies and certifications.

*The list of certifications and assurances, with Internet addresses you may obtain this list, is contained in the announcement or agency specific instructions.

18. FULL (Disclosure of Lobbying Activities) or other Explanatory Documentation

[] Add Attachment

19. Authorized Representative

Prefix: [] First Name: [] Middle Name: []
 Last Name: [] Suffix: []
 Position/Title: []
 Organization: []
 Department: [] Division: []
 Street1: []
 Street2: []
 City: [] County/Parish: []
 State: [] Province: []
 Country: [USA: UNITED STATES] ZIP/Postal Code: []
 Phone Number: [] Fax Number: []
 Email: []

Authorized Organization Representative (AOR) in Grants.gov must have signature authority for the organization. The electronic signature of the submitting AOR is recorded with submission.
 In eRA Commons individuals with signature authority are called Signing Officials (SOs).

Signature of Authorized Representative [] Date Signed []
Completed on submission to Grants.gov Completed on submission to Grants.gov

20. Preapplication [] Add Attachment

21. Cover Letter Attachment []
Cover Letter will be posted as a separate document in eRA Commons and is not part of the assembled application image. Content is only made available to select agency staff. See Application Guide for suggested cover letter format.

THE KEY QUESTIONS YOUR PROPOSAL MUST CLEARLY ANSWER

1. What is the proposed innovation?
2. What are the technical risks/unknowns associated with the proposed innovation?
3. What is the technical feasibility question to be addressed in the project?
 - List all relevant questions about unknowns, explain why this one is “the” key one
 - State that other questions will be answered in Phase 2
4. What is the project plan that clearly answers the feasibility question & meets the research objectives?
5. What set of metrics will you use to assess the success of the innovative research described in that plan?
6. How are you going to know if the Phase 1 feasibility study is successful?

--after NSF Program Manager correspondence to proposer, 6/06

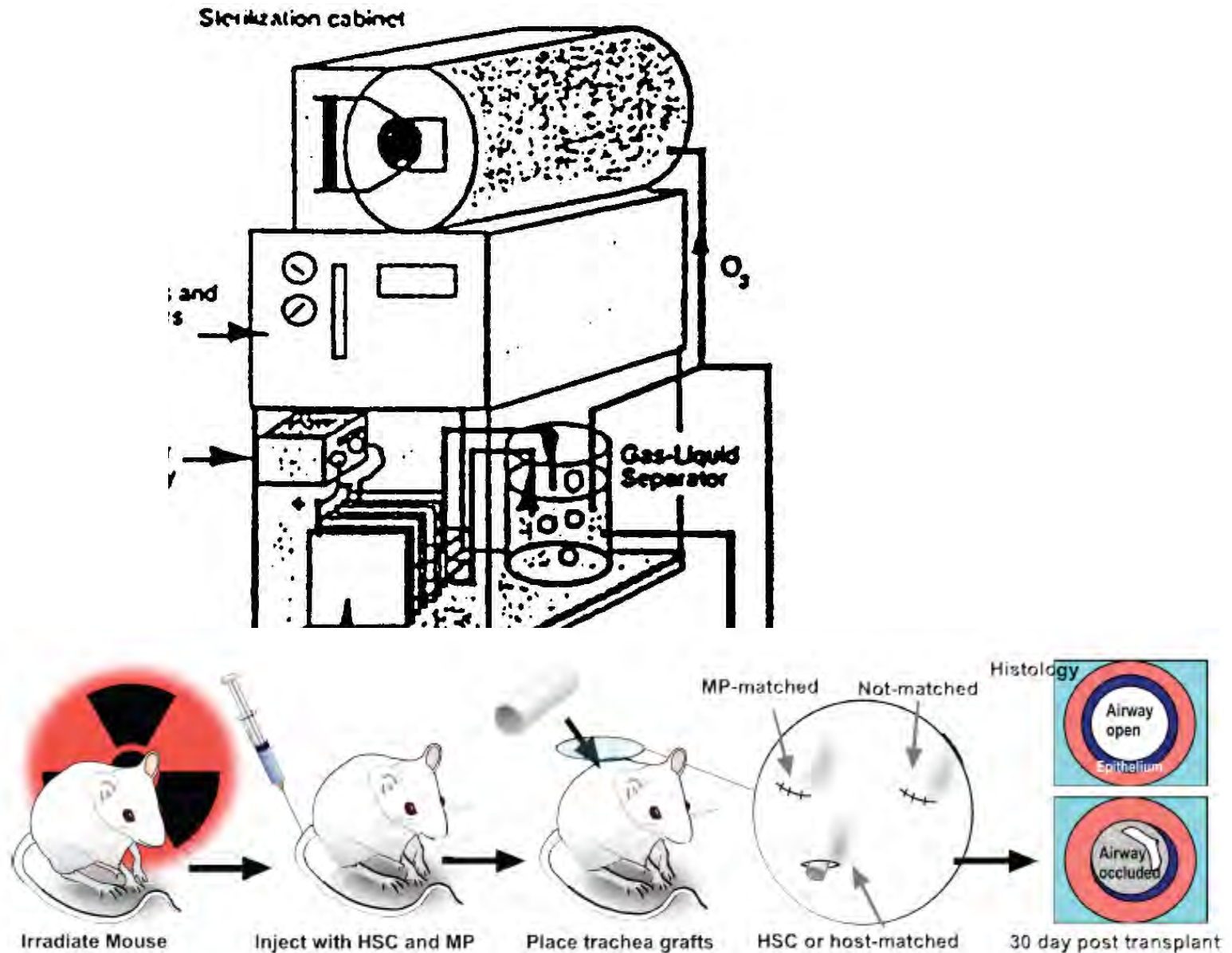
CAREFULLY DO THE COMMERCIALIZATION DANCE

- Commercialization is a high priority, even in Ph I
Many of the weakest proposals scored low on...the potential for commercial application...
--DARPA FY07.2 solicitation
- But Phase I still a technical project
- Convincingly discuss markets & commercialization strategy
 - A few well conceived markets beats a slew of vague ones
- Avoid the “dreaded words of sin,” BS & SB (smoke blowing)
 1. _____
 2. _____
 3. _____
 4. _____
- And remember, the DoD likes to use the term “transition” to mean “commercialization” (sometimes)

SUGGESTION: USE GRAPHICS IN YOUR PROPOSAL

- A picture is worth a thousand words
 - Show how Phase I links with Phase II
 - Show how the elements of Phase I link together
 - Flow chart
 - Show your vision of the prototype and/or final product
 - See next slide for example
 - Show the Phase I schedule
 - Timeline or Gantt Chart
- But beware:
 - Make sure its the right thousand words
 - Not amateurish or hand-drawn
 - Reference & describe the graphic in the text
 - USE but do not RELY ON color
 - “Most proposals will be printed out on black and white printers so make sure all graphics are distinguishable in black and white” --
USAF 10.3 STTR solicitation*

A SIMPLE PICTURE WORTH 1000+ WORDS



Timothy Fong, Cellerant Therapeutics, sample winning proposal posted by NIAID at <http://www.niaid.nih.gov/researchfunding/sb/apply/Pages/Samples.aspx>

DOE Phase 0 Program

- Assistance for
 - a. Minority and Women Owned Businesses
 - b. Companies in “underrepresented states”
 - AK, DC, GA, HI, IA, ID, IN, KS, LA, ME, MN, MS, MT, NC, ND, NE, NY, OK, PA, PR, RI, SC, SD, WA, WI
 - c. Companies teaming with a DOE Federal Lab in an “underrepresented state”
 - IA: Ames Laboratory
 - ID: Idaho National Laboratory
 - NY: Brookhaven National Laboratory
 - SC: Savannah River National Laboratory
 - WA: Pacific Northwest National Laboratory
- Services available if applying for DOE SBIR/STTR Program
 - LOI submission assistance
 - Phase I proposal prep, review, submission assistance
 - Training & mentoring
 - Communication & market research assistance
 - Technology advice & consultation
 - IP consultation
 - Indirect rate & cost proposal assistance
- Apply at <http://www.dawnbreaker.com/doephase0/>

IF WE HAD A NICKEL FOR EVERY TIME WE SAW THESE COMMON PROPOSAL WEAKNESSES...

- Lack of clarity, consistency
 - *The strategy to be followed by the UJCL would be a project management path to ensure an objective, reliable and practical project implementation approach for accomplishing the project output towards satisfying the desired result.*
- Lack of technical detail
 - Especially vague research/work plans
- No evidence of innovation or uniqueness
- No statement of the feasibility question, risk, or solution measure
- Much too much background stuff: the technology trap discussed earlier
- Fail to present a credible commercialization story
- Lack of credible PI &/or team
- Lack of credible/defensible/sensible cost proposal

SBIR/STTR PHASE I DRAFT PROPOSAL CRITIQUE

3rd in a 4 step process for developing a competitive SBIR/STTR proposal

1. Formulate your proposal strategy
2. Draft the proposal
- 3. Get a review of the draft before submitting it**
4. Get a debriefing after winners are announced

BEWARE OF THE TYPO....

- Meant to write *“Bridge monitoring system”*
 - Actually wrote *“Bride monitoring system”*
- Meant to write *“turnkey system”*
 - Actually wrote *“turkey system”*
- Meant to write *“Due to the threat of nuclear war”*
 - Actually wrote *“Due to the treat of nuclear war”*
- Meant to write *“...a member of the burn unit of the hospital”*
 - But wrote *“..a member of the bum unit of the hospital”*
- Wrote *“...useful in rug screening and testing...”*
- Wrote *“Ass president/CEO of our firm, he designed...”*
- *“...capable of withstanding...a 3 foot drop test onto a herd surface.”*
- *“...for this technology from Lockheed Martin Missiles and Fir Control...”*
- *“...will be taught by a certified Tai Chi mater...”*
- *“...to identify each functional requirement and asses...”*
- *“...in order to reduce engine fowling...”*
- *“We have two millstones in our Phase I project...”*
- *“The PI has access to the field tasting range at Tyndall AFB...”*
- *“...establish a mentor broad...”*
- *“...urgent massage from ...”*
- *The PI’s roll in this project will be...”*
- *“..bipartisan leadership grop of Senators and Representatives agreed...”*
- *“We propose to tie a wench to a post and apply pressure...”*

NOTE: Spellchecker caught none of these!

GETTING A PRE-SUBMITTAL REVIEW OF YOUR SBIR/STTR PROPOSAL

- Why?
 - Get some “fresh eyes” on the proposal
 - Get different perspective
 - Take advantage of other experience & expertise
 - ADA Technologies: 75% of their proposals that got a pre-submittal review have led to SBIR awards
 - Waste, Fraud & Abuse gives xtra incentive to get another opinion re: accuracy & complying with instructions
- Who?
 - University profs (technical)
 - Federal Lab scientists, engineers (technical)
 - SBDC, Consultants (marketing, commercialization)
 - DoEd SBIR Program Mgr (Inst of Educ Sci)
 - The Greenwoods (Logic flow, readability, completeness, responsiveness to topic & agency preferences)
 - Teenage daughter (Nit-picks)
- When?
 - Not the last week before due date

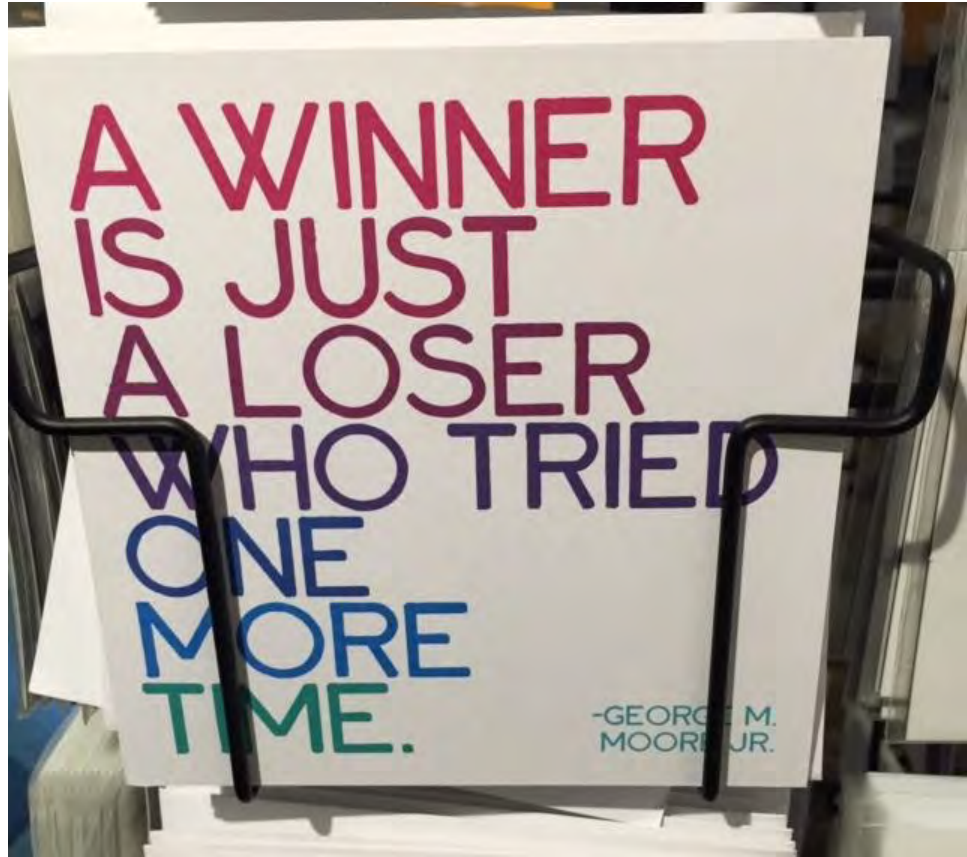
SBIR/STTR PHASE I PROPOSAL DEBRIEFING

4th in a 4 step process for developing a competitive SBIR/STTR proposal

1. Formulate your proposal strategy
2. Draft the proposal
3. Get a review of the draft before submitting it
- 4. Get a debriefing after winners are announced**

GET A POST-SELECTION DEBRIEFING

- After agency picks winners, non-winners are entitled to a debriefing
 - Some agencies provide them automatically; you must request it from others
 - Most debriefings are written, usefulness varies
- It points out strengths & weaknesses of your proposal, in the eyes of the reviewer(s)
- Use to decide if you should consider resubmitting
 - Good idea presented poorly vs a bad idea
- Learn things to do differently on your next proposal
 - *“Debriefings are provided to help improve the offeror’s potential response to future solicitations”* –DTRA, DoD FY11.2 Solicitation
- Always ask for a debriefing, even if you won



NIH: “COMMON REASONS CITED BY REVIEWERS FOR AN APPLICATION’S FAILURE TO GAIN THEIR ENTHUSIASM”

1. Unconvincing case for commercialization/societal impact
2. Poorly defined feasibility test
3. Methods unsuited to the objectives
4. Problem is more complex than proposer seems to realize
5. Not significant to health-related research
6. Lacking detail in the research plan, incl no recognition of pitfalls
7. Overly ambitious work plan
8. Direction or sense of priority not well defined
9. Lack of focus in the hypotheses, aims, and/or research plan
10. Lack of innovation
11. Investigator(s) inexperienced
12. Driven by technology rather than a problem or pressing need
13. Relevancy of tasks to objectives not clear
14. Lack of alternatives if primary approach does not work out
15. Proposed model system inappropriate for proposed questions
16. Relevant controls not included
17. Insufficient consideration of statistical needs
18. Not clear what data are from the company and what are from other sources

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SBIR/STTR Sample Applications

The SBIR (R43/R44) and STTR (R41/R42) programs support domestic small businesses to engage in research and development with the potential for commercialization.

PI and Grantee Institution	Sample Application
Jose M. Galarza of Technovax, Inc. "Broadly protective (universal) virus-like particle (VLP) based influenza vaccine" (SBIR Phase I / R43)	Full Application
Mark Poritz* of BioFire Diagnostics, LLC. "Rapid, automated, detection of viral and bacterial pathogens causing meningitis" (SBIR Phase I / R43)	Full Application
Patricia Garrett of Immunetics, Inc. "Rapid Test for Recent HIV Infection" (SBIR Phase II / R44)	Full Application
Michael J. Lochhead of MBio Diagnostics, Inc. "Point-of-Care HIV Antigen/Antibody Diagnostic Device" (SBIR Phase II / R44)	Full Application
Kenneth Coleman of Arietis Corporation "Antibiotics for Recalcitrant Infection" (SBIR Fast-Track)	Full Application
Timothy C. Fong of Cellerant Therapeutics, Inc. "Novel indication for myeloid progenitor use: Induction of tolerance" (STTR Phase I / R41)	Full Application
Raymond Houghton, InBios International, and David AuCoin, University of Nevada School of Medicine "Antigen Detection assay for the Diagnosis of Melioidosis" (STTR	Full Application

Firm
InformationCover
SheetsTechnical
VolumeCost
VolumeCompany
Commercialization
ReportVerify
Proposal
SubmissionPrint
Proposal
SubmissionSF298
Final
ReportPhase
Enhance

7. Key Personnel
8. Foreign Citizens
9. Facilities and Equipment
10. Subcontractors/Consultants
11. Prior/Current/Pending support of similar proposals or awards
12. (And a Cost Volume, if not using the web site's online Cost Volume form)

Q Where do I find a sample Technical Volume?

A Follow the links to a [sample Phase I Technical Volume](#) or a [sample Phase II Technical Volume](#)

Q What do I upload?

A The DoD SBIR program is requesting all technical uploads be in PDF format. You are responsible for checking for viruses on the Technical Volume file prior to upload. Uploaded files with viruses will be deleted immediately.

Q Am I required to upload a Technical Volume?

A All agencies (Air Force, Army, CBP, DARPA, DHP, DLA, DMEA, DTRA, MDA, Navy, NGA, OSD and SOCOM) require

DOD Sample Phase I Proposal

SUPERADHERENT HARD COATINGS BY ION BEAM ENHANCED DEPOSITION

(FIGURES AND TABLES ARE UNAVAILABLE ON THIS WEBSITE.)

1. COVER SHEET (see attached)

2. IDENTIFICATION & SIGNIFICANCE OF THE OPPORTUNITY

The objective of this proposal is to demonstrate the feasibility of producing superadherent protective coatings at low processing temperatures using energetic ion beams in conjunction with conventional deposition techniques. This process, coined Ion Beam Enhanced Deposition (IBED), is depicted in Figure 1 and promises a new generation of exotic coatings with superior adhesion, near theoretical densities, very high hardness, and, at the same time, capable of being deposited at low temperature. The effect of the ion beam (e.g., N) is to initially "intermix" the deposited atoms (e.g., Ti) with the substrate for superior adhesion as well as to provide energy to the grown layer for effectively "high temperature" processing at low substrate temperature. Highly adherent coatings of "TiN" with low friction (Figure 2) have already been demonstrated by Kant et al(1) at Naval Research Laboratory by N-bombardment of deposited Ti. This proposal is to extend the range of protective coatings produced by IBED to include HfN, Al₂O₃ and to characterize such films for mechanical and chemical properties as well as microstructural analyses. Evaluation of mechanical properties will include adhesion tests and wear tests. Initially laboratory pin-on-disc tests will be used for screening purposes with in-situ component tests planned for later. Microstructural analyses deemed necessary include 1) sputter Auger electron spectroscopy for compositional analysis, 2) sputter ESCA for composition and chemical bonding information, 3) glancing x-ray analysis for lattice structure, 4) ion backscattering for nondestructive composition vs. depth information, and 5) SEM and TEM for grain structure and lattice microstructure information.

Hard, extremely adherent hard coatings synthesized by the ion beam enhanced deposition technique will be of immediate use to SDI. Primary candidates for these (ultra) thin coatings would be for i) precision aerospace bearings and ii) precision micropositioning platforms where a very thin (i.e., 0.1-0.5 micrometer) antifriction antiwear coating could be used without remachining or respecifying dimensions of critical components. Besides being an end-of-line process not requiring production changes, IRED coatings promise a convenient retrofit to existing tribological problems involving precision mechanisms.

2.1 BACKGROUND

There is an acute need for development of high quality, low temperature thin film deposition techniques that can achieve thin film qualities found in high temperature processes. Present low temperature thin film deposition techniques sometimes result in inferior microstructural features within the film such as columnar growth and not the preferred equiaxed grain structure ordinarily found in high temperature processes. Conventional methods of laying down films result in a greater or lesser degree of departure from bulk material properties (density, grain structure, etc.) depending, among other things, on the energy of the atoms as they arrive at and arrange themselves on the substrate surface.

Table 1 shows the typical energy ranges associated with various physical vapor deposition and ion beam based techniques.

The three PVD processes in the table above, namely evaporation, sputtering, and ion plating are discussed here briefly since eventually any coating produced by a new method, such as IBED, will have to be compared with

The Spire tribology laboratory is equipped to characterize the mechanical properties of the hard coatings. For hardness measurements, either Tukon microhardness tester or Mhos scratch tests can be used. To measure wear resistance and mechanical integrity, several pin-on-disc testers are available. A Dectak surface profile plotter is available to analyze resultant wear and decohesion areas.

The services of Cornell University will be used to provide Rutherford Backscattering analysis and the services of SUNY at Stony Brook will be used to provide SEM, TEM and x-ray measurements.

10. CONSULTANTS

No consultants are presently foreseen for the Phase I program. If a need should arise, Spire has several well known consultants available from the facilities of M.I.T., Harvard, Boston University and other local universities.

11. PRIOR, CURRENT OR PENDING SUPPORT

Spire has no prior, current or pending support for a similar proposal.

12. COST PROPOSAL

See attached.

13. REFERENCES

1. R.A. Kant and B.D. Sartwell, Proc. of 1983, MRS Symposium, North Holland, NY, in press.
2. R. Bunshah, ed., "Deposition Technologies for Films and Coatings", Noyes Publications, (1982).
3. J. Thornton, Ref. 2.
4. D. Niattox, Ref. 2.
5. J.M.E. Harper and R.J. Gambino, "Combined Ion Beam Deposition and Etching for Thin Film Studies", J. Vac. Sci. Tech. 16 (6), (1979), pp. 1901-1905.
6. L. Pranevicius, "Structure and Properties of Deposits Grown by Ion Beam Activated Vacuum Deposition Techniques", Thin Solid Films 64 (1979), pp. 77-85.
7. L. Pranevicius, and S. Tamulevichus, "The Physical Properties of Thin Ag Films Formed Under the Simultaneous Ion Implantation in the Substrate", Nucl. Instr. Meth. 209-210, (1983), pp. 179-184.
8. C. Weissmantel, G. Reisses, H.J. Erler, F. Henny, K. Bewilogua, U. Ebershach and C. Schurer, "Preparation of Hard Coatings By Ion Beam Methods", Thin Solid Films 63, (1979), pp. 315-325.
9. C. Weissmantel, K. Bewilogua, D. Dietrich, H.J. Erler, J.H. Hinneberg, S. Klose, W. Nowick and G. Reisses, "Structure and Properties of Quasi-Amorphous Films Prepared by Ion Beam Techniques", Thin Solid Films 72, (1980), pp.19-31.
10. J. Colligon, and A.E. Hill, "Applications of Dynamic Recoil Mixing", 6th National Conference on Interaction of Atomic Particles with Solids, Minsk USSR, (Sept. 1981).
11. C. Weissmantel, K. Bewilogua, H.J. Erler, J.H. Hinneberg, S. Klose, W. Nowick and G. Reisse, "Ion-Activated Growth of Special Film Phases", Ion Phys. Conf. Ser. No. 54 Chapter 6 (1980).
12. J.E. Greene and S.A. Barnett, J. Vac. Sci. Technol. 21 (2) 1982.
13. P.J. Martin, H.A. MacLeod, R.P. Netterfield, C.G. Pacey, and W.G. Sainty, Appl. Optics, 22 (1), (1983), p. 178.
14. J. Franks, P.R. Stuart and R.B. Withers, "Ion Enhanced Film Bonding", Thin Solid Films 60, (1979).
15. D.W. Hoffman and M.R. Gaertner, "Modification of Evaporated Chromium by Concurrent Ion Bombardment", J. Vac. Sci. Technol. 17, (1980), pp. 425-428.
16. R.F. Bunshah, J. Vac. Sci. Technol. 11, (1974), p. 633.

No date on proposal,
but you guess it

A11-095 TITLE: Edge Enabled Systems for ISR Applications

XYZ Title: Cognitive Information Processing for Edge Enabled Operations

ABSTRACT:

XYZ has developed fundamental technologies to improve situation awareness and agility in dynamic, uncertain environments. For instance, in a USMC SBIR CPP, XYZ is developing real time situation awareness for Sense and Respond Logistics. In a Phase II DARPA SBIR, XYZ is developing a graphical user interface collaborative whiteboarding application incorporating distanced teams for problem solving and rapid response. XYZ is completing an Army Phase II SBIR that has developed a cognitive fusion architecture enabling models to continuously evolve. We propose to combine these core technologies to design and develop an edge enabled system (EES) for ISR applications. Using our framework called We-Share, warfighters will develop, extend and combine ISR applications for their particular needs. Situation awareness and response time will improve through sensing and reasoning applications that evolve out of the common needs of individual soldiers. In addition to improving access to information for the dismounted soldier, our approach to EES will increase the relevance of incoming information to a soldier's mission by allowing them to customize how the information is acquired, processed and interpreted. We-Share will be developed for Android-based devices with secure access to the warfighter network, such as the General Dynamics GD300 wearable computer.

COMMERCIAL POTENTIAL/DUAL-USE APPLICATIONS:

Technologies developed in this proposed effort will be directly applicable to security, law enforcement and homeland security missions including border patrol and counter narcotics missions. They can also be used for emergency response to provide a common operating picture and customizability to rescue personnel.

The commercial potential of We-Share is derived from the emerging need to integrate human intelligence and coordinate distributed action. Many commercial applications have been imagined that harvest and integrate dynamic human feedback from cell phones, social networking sites, focus groups, blogs, on-line opinion polls to form solutions to multi-scale problems. We see We-Share and our related graphical user interface (GUI) products providing the technical foundation for these commercial pursuits. The complete line of GUI products will leverage human insight for prediction, social problem-solving and decision-making. These tools have the potential to change the way communities, agencies, political and non-profit organizations address pressing issues affecting world societies– such as inflation, unemployment, natural disasters, climate change and energy sustainability.

KEYWORDS: Edge Enabled Systems, Mobile Applications, Application development, Intelligence, Surveillance, Reconnaissance, ISR, Situation Awareness