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# Workshop II

## Objectives/Work Plan/Budget

— Making It Make Sense —  
August 28, 2024

# Welcome

## Introductions:

- Wiley Larsen, Director, SBIR/STTR & University Partnerships, Arizona Commerce Authority
- Dan Suhr, Independent Platform

## Goals of Workshop:

- Understand the SBIR Program - Differences Among Agencies.
- Align Projects with Strategic Investment Needs.
- Harness the Power of Partnering.
- Craft a Compelling Concept Write-up - the foundation of SBIR proposals.
- Support AZ Entrepreneurs in Proposal Submission.

# Agenda Workshop II

- Agency overview review
- Concept write up review
- Technical objectives (Specific Aims for NIH)
  - Innovation in context of state-of-the-art
- Work plan
- Budget

# Agency Topic Interest

Agency	Agriculture	AI & Adv. Computing	Computer Security	Defense	Disaster/Security	Education	Energy	Environment	Health & Biomedical	Rural Development	Sensors and Instrum.	Space Exploration
Department of Agriculture (USDA)	✓	✓				✓		✓	✓	✓	✓	
Department of Commerce (DOC)		✓	✓				✓	✓			✓	
Department of Defense (DoD)		✓	✓	✓	✓		✓		✓		✓	✓
Department of Education (DoEd)		✓				✓				✓		
Department of Energy (DOE)		✓	✓				✓	✓		✓	✓	
Department of Homeland Security (DHS)		✓	✓	✓	✓		✓				✓	
Department of Transportation (DOT)		✓	✓		✓			✓			✓	
Environmental Protection Agency (EPA)		✓			✓		✓	✓		✓	✓	
Health and Human Services (HHS)		✓	✓		✓	✓		✓	✓		✓	
National Aeronautics & Space Admin (NASA)		✓	✓	✓							✓	✓
National Science Foundation (NSF)	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓

# Agency Differences - Changes Rapidly - Read RFA

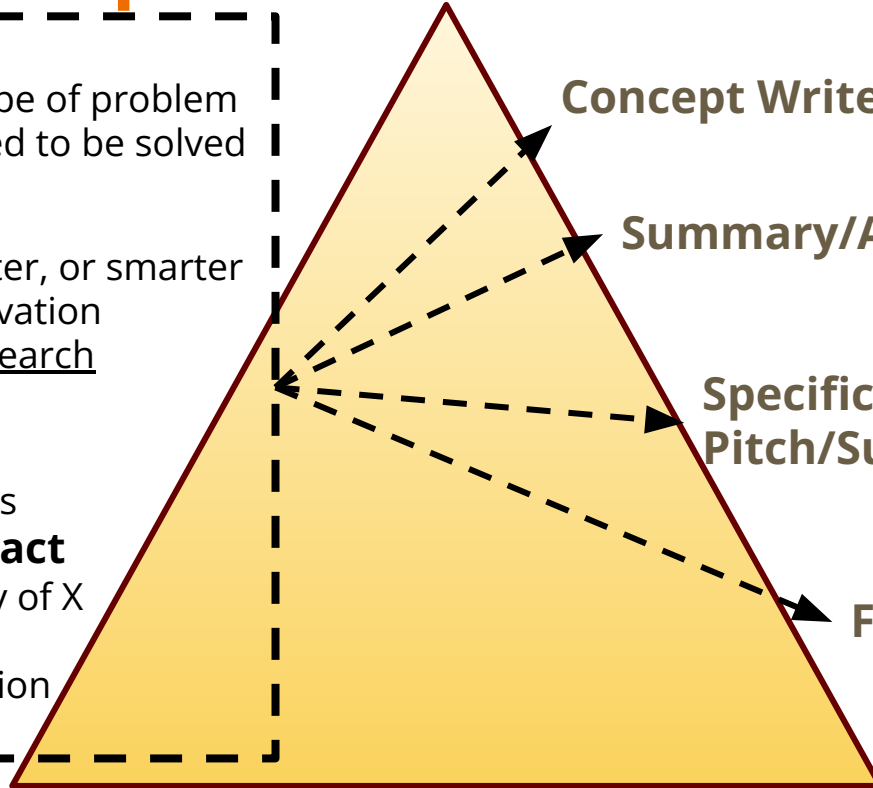
Agency	Total Funding	Phase I Funding	Phase II Funding	SBIR/STTR Available	Type
Department of Agriculture (USDA)	\$32M	\$125-175K	\$600K	SBIR/STTR	Grant
Department of Commerce (DOC)	\$15M	\$100K	\$400K	SBIR	Grant
Department of Defense (DOD)	\$1.9B	\$50K-\$250K	\$0.8-\$1.83M	SBIR/STTR	Contract
Department of Education (ED)	\$10M	\$250K	\$1M	SBIR	Contract
Department of Energy (DOE)	\$315M	\$200K	\$1.6M	SBIR/STTR	Grant
Department of Homeland Security (DHS)	\$18M	\$150K	\$1M	SBIR	Contract
Department of Transportation (DOT)	\$9M	\$200K	\$1M	SBIR	Contract
Environmental Protection Agency (EPA)	\$5M	\$100K	\$400K	SBIR	Contract
Health and Human Services (HHS)	\$1.2B	\$306K	\$1.83M	SBIR/STTR	Grant
National Aeronautics and Space (NASA)	\$174M	\$150K	\$1M	SBIR/STTR	Contract
National Science Foundation (NSF)	\$215M	\$275K	\$1M	SBIR/STTR	Grant

# Award Types

Award Type	Description
Phase I	Feasibility study to evaluate the scientific and technical merit of an idea. It usually lasts 6-12 months with funding up to \$306,000.
Phase II	Continuation of Phase I, focusing on R&D and commercialization. It typically lasts up to 24 months with funding up to \$2 million.
FastTrack	Combined application for Phase I and II, intended for projects with strong potential for commercialization, expediting the transition between phases.
Direct to Phase II	Allows companies to bypass Phase I if feasibility has already been demonstrated, moving directly into the development stage.
Supplemental Awards	Additional funding provided to support further development or address specific needs that arise during the project.
Commercialization Readiness Program	Provides additional support to advance the commercialization efforts of Phase II awardees, including partnerships and market entry strategies.

# Concept write up review

- **Problem**
  - Stats about scope of problem
  - Why does it need to be solved
- **Innovation**
  - Why better, faster, or smarter
  - Context of innovation
  - Preliminary Research
- **Work Plan**
  - Team
  - Objectives/Tasks
- **Outcome/Impact**
  - Prove Feasibility of X
  - Phase II efforts
  - Commercialization



Concept Write-up (1/2 Page)

Summary/Abstract

Specific Aims/Elevator  
Pitch/Summary (1 Page)

Full Proposal (7-20 Pages)

# SBIR Proposal Outline - 3 Different Agencies

DoD (20 Pages)	NSF (15 Pages)	NIH (7 Pages)
1 Identification/Significance of Problem	Project Summary	Specific Aims
2 Phase I Technical Objectives	Project Description	Research Strategy
3 Phase I Statement of Work	- Intellectual Merit	- Significance
4 Related Work	- Technical Solution	- Innovation
5 Relationship with Future R&D	Company/Team	- Approach
6 Commercialization Strategy	Broader Impacts	• Team
7 Key Personnel	Commercialization Potential	• Objectives
8 Foreign Citizens		• Description of Tasks
9 Facilities/Equipment		
10 Subcontractors/Consultants		
11 Current, or Pending Support		

- **Summary**
- Problem
- Innovation
- Workplan
- Outcome/Impact

**Problem**

**Innovation**

**Work Plan**

**Impact**

**Team**



# Concept Write-up

The most effective way to communicate with grant officials and collaborators.

Key components:

- Short, 250-words that can be included in the body of an email.
- Start the write-up with the **problem** - “Did you know that X million people are afflicted with Y with a cost of Z billion dollars a year?”
- Next talk about the **innovation** - “The purpose of the proposed research is to prove the feasibility of X.”
- To prove the feasibility of X, the following **work plan** will answer these 1 to 3 questions...
- When we do, the **outcome/impact** to the world is Y . . .

# Concept Write-up Observations

- Good identification of the **problem to solve**
- Decent descriptions of the **innovation**
- Difficulty to identifying the **work plan** - the specific research needed to support Technical objective
- Review past awards by key words - SBIR.gov

# Technical Objective and Context of Innovation

# Technical Objective

- **Clear, Specific and Measurable Goals**
- Alignment with Problem Statement
- Innovation and Technical Merit
- Feasibility and Approach - Timeframe and Milestones
- Expected Outcomes and Impact
- Risk Mitigation

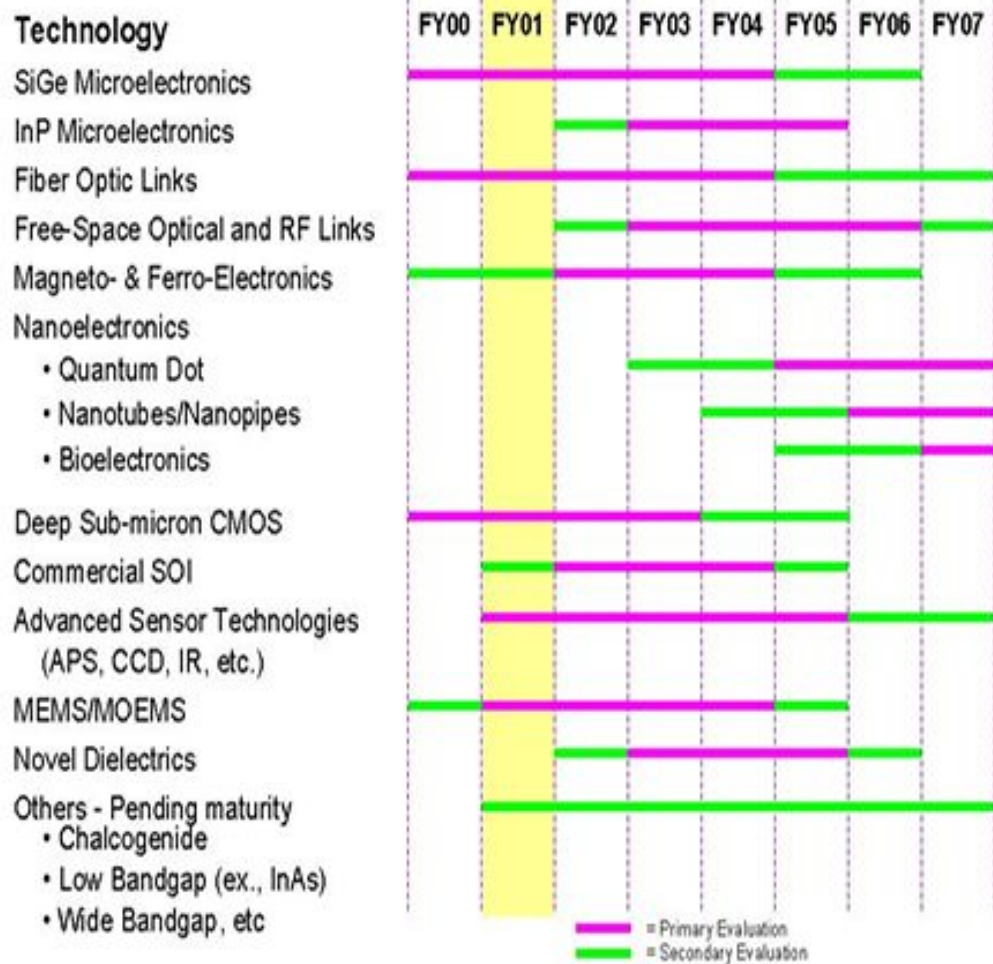
Funded NIH examples at:

<https://www.niaid.nih.gov/grants-contracts/sample-applications#r43r44>

# Context of Innovation - Roadmaps

- Demonstrate your knowledge of state of the art
- Consider dependent technologies and pace of change
- Catalog competitive approaches
- Systematically map science & technology to products

# Industry Roadmap Example



# Product Roadmap Example

## Product drivers

Core technology Area	Last Yr	Now	+1 Year	+2 Year	+3 Year	VISION	Import.	Compet. Position
<b>Weight/size</b>								
Baseband circuit	Interface ASIC	5735 Chip	ACA	Integrated Call signal proc.	Single Baseband Chip	"Soft Radio"	C	CF
	DSP	1832						
	Audio codec	CMOS						
	Audio front end	Bipolar discretes						
	Microcontroller	8 bit CISC	16 bit CISC	microcontroller				
Housing	1.7mm thick	1.4mm	1.2mm				C	CF
PWB	6 layer 1.5mm	6 layer 1mm	4 layer 0.8mm Flex	Molded-in			CF	CF
<b>Ease of use</b>								
Display	2-line LCD	4-line LCD	1/4 VGA	Touch Sensitive	Voice Interface		CF	CF
User interface	Navigation keys						CF	CF
Software	Menu driven	Configurable	Cust. adaptive				CF	CF
<b>Talk time</b>								
Battery	NiCd - 4.8V		NiMH - 3.6V		Altern. tech.		CF	CF
Power supply	Linear - 50% efficient		Switching (80% eff.)		~100% eff.		CF	CF
RF	Power amp	Module		MMIC-3V		Tunable, Homodyne	F	C
	Radio	Triple conversion	Double conversion	Homodyne				
Antenna	Dual band, High gain		Diversity					
<b>Audio quality</b>								
Voice coders	Vcelp		ITU, Qcelp13				CF	CF
DSP noise algorithms	Expander		IS-99 Data BER Improvement/echo cancel.				CF	CF
Microphone	First order gradient (FOG)					Steering array	CF	CF
Receivers	Piezoelectric	Noise canceling earpiece, miniaturized					CF	CF

**LEGEND: Technology Source:**  
 Devel. (Supplier) Internal Research

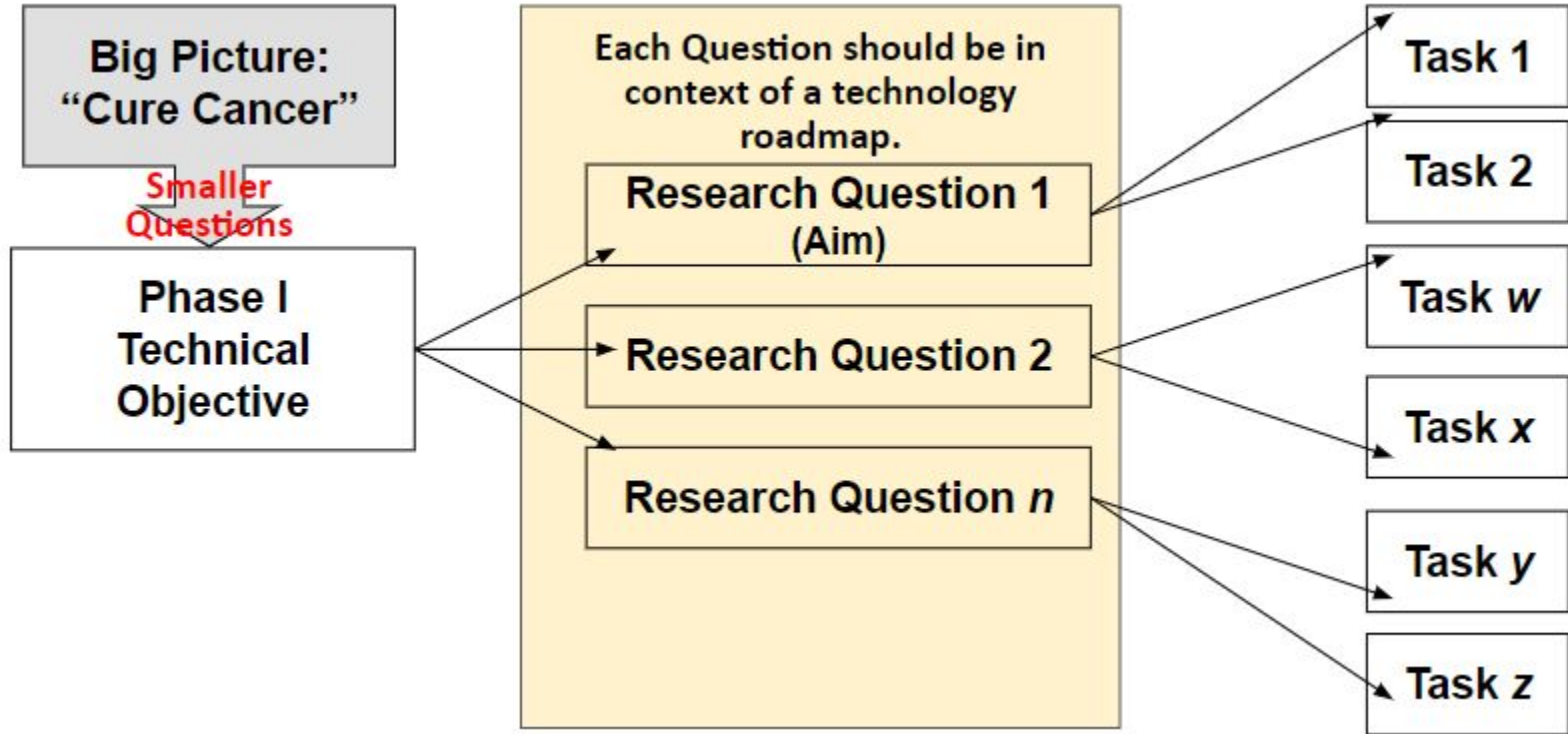
**Funding status:**  
 Staffed Planned Unplanned

L M H Lag Lead  
 C-current, F-future

# Work Plan



# Work Plan Structure



# Work Plan Overview (Agency Specific Instructions)

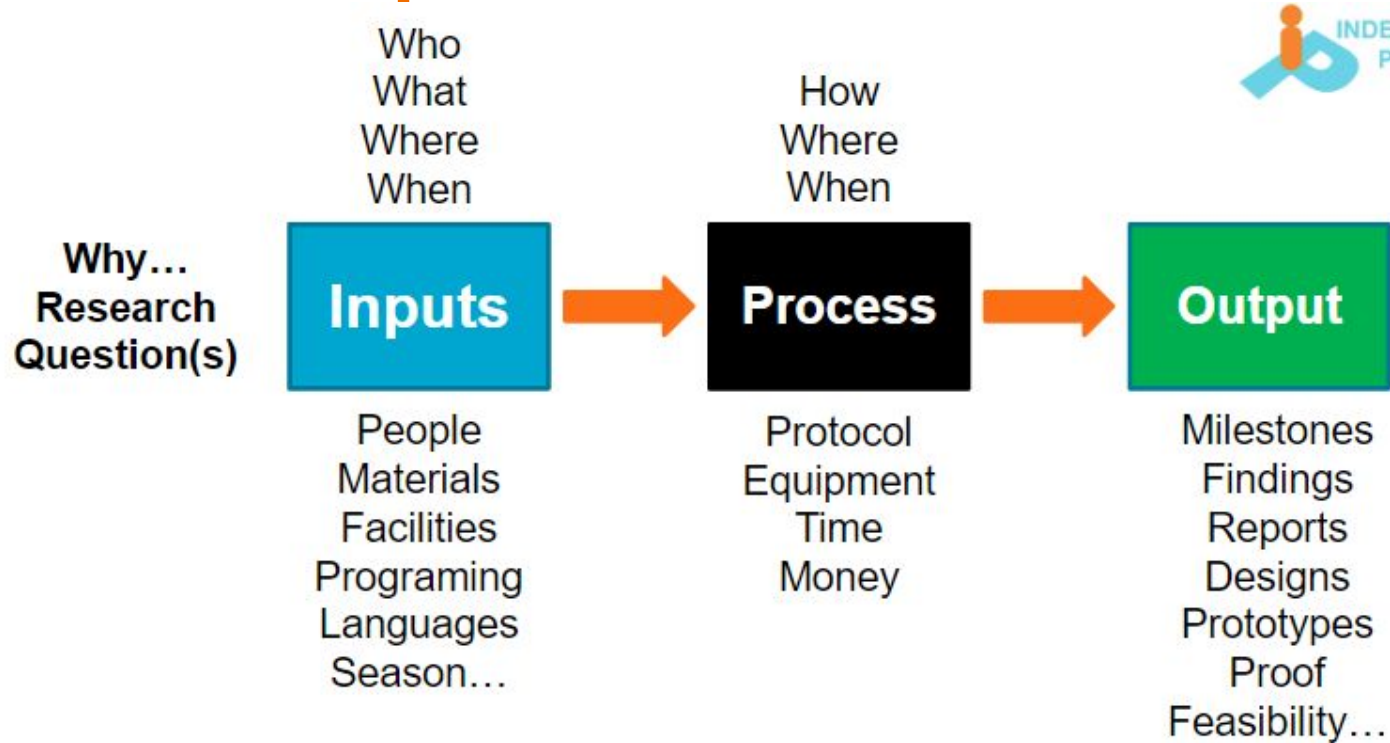
- What are tasks to be performed to answer each question?
- What is the output of each task?
- How long will each task take?
- What special knowledge or equipment is needed?
- Who will perform each task?
- Where will the work be performed?
- Demonstrate your knowledge of the state of the art.

# Work Plan Overview (Agency Specific Instructions)

Specific Aims (As questions)	Tasks to Answer Questions (indicate which are options)	Task Outputs or Deliverables/ Quantify Result Goals	Task Duration	Personnel skills/names and Location(s)	Task Scope in Hours per person	Equipment and Facilities	Sub-contractor and/or consultant	Human Trials or Animal Testing?

Source: Enable Ventures

# Work Plan Components



# Budget

# Key Budget Terms

**Direct Costs:** Expenses directly attributable to the project, including labor, materials, and supplies.

**Indirect Costs (Overhead):** Costs necessary for overall operations, such as utilities, administrative support, and facility maintenance. These are allocated to projects using an indirect cost rate.

**Fee/Profit:** An allowable fee or profit margin.

**Allowable Costs:** Expenses permitted meeting criteria for reasonableness, allocability, and conformity with regulations.

**Unallowable Costs:** Expenses that are not permissible, such as entertainment, marketing, or unrelated project costs.

**Budget Justification:** A detailed narrative explaining the necessity, reasonableness, and allocation of each budget item. It provides the rationale for the estimated costs.

**Cost Sharing:** Voluntary or required contribution of resources by the awardee or third parties. (Not required for Phase I but may be required for Phase II in some agencies).

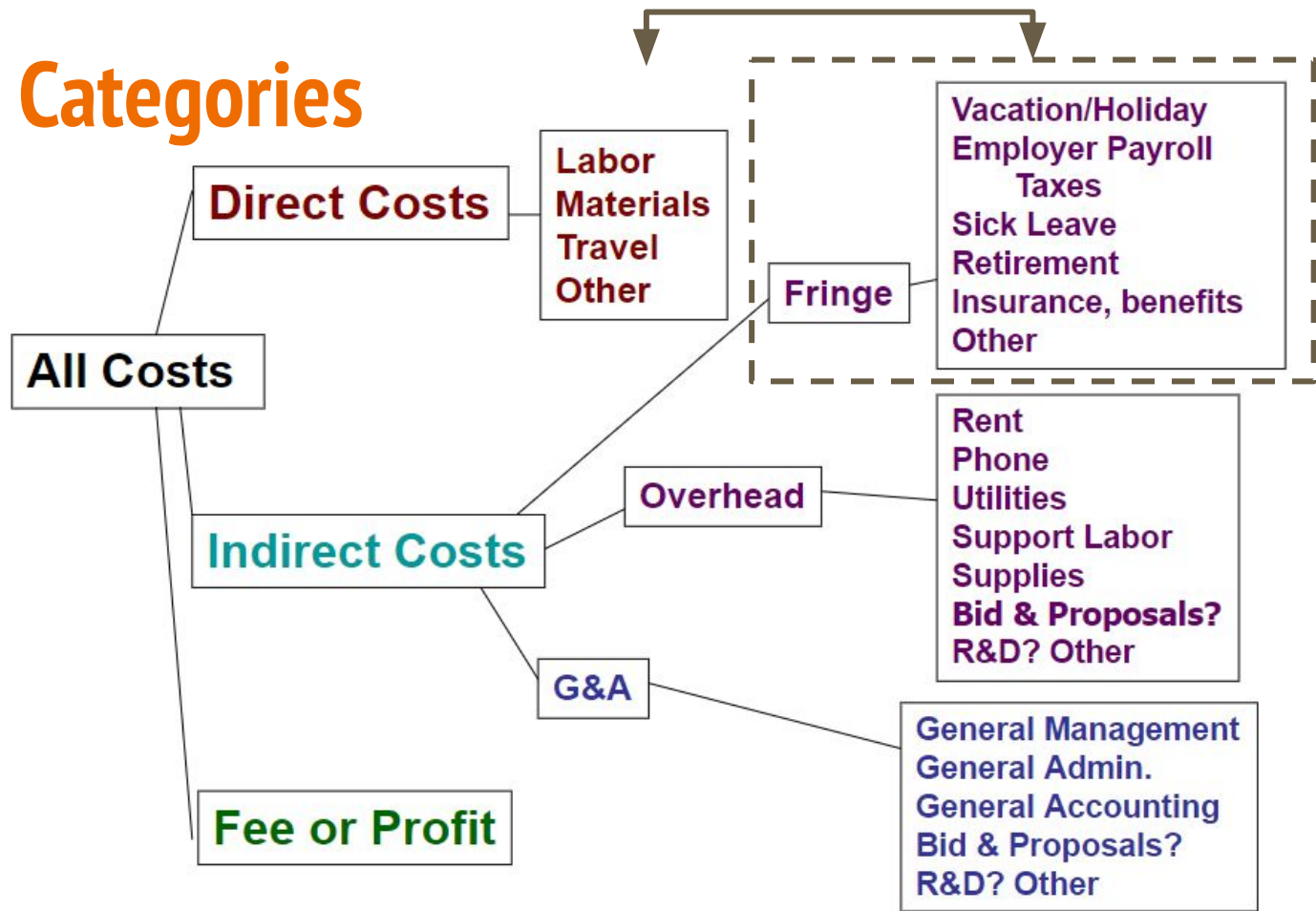
**Cost Allocation:** The process of distributing costs among various projects or activities according to a systematic methodology that reflects the relative benefits received.

**Period of Performance:** The duration during which the project tasks must be completed, and the funds must be utilized. Typically, Phase I lasts 6-12 months, and Phase II can extend to 24 months.

# Key Budget Concepts (Phase I Cost Proposal)

- Direct Labor (Salaries [BLS] of company employees)
- Direct Expenses
  - Consultants/Subcontracts are limited to  $\frac{1}{3}$  of budget for SBIR and 60% for STTR
  - No equipment over \$5,000
- Indirect Expenses (Use “Safe Rate”!)
- Fee (Always 7%)
- Total project cost (Direct + Indirect + Fee)
- **Never exceed the total award amount when generating your budget – your proposal will be rejected!**

# Budget Categories





# Allowable Expenses\* in SBIR/STTR

**Direct Labor Costs:** Salaries and wages for personnel directly involved in the project & fringe benefits (health insurance, retirement, etc.)

**Equipment:** Purchase or rental of equipment specifically needed for the project (items usually over \$5,000 with a useful life beyond one year)

**Materials and Supplies:** Consumables such as lab supplies, chemicals, and project-specific materials

**Travel:** Project-related travel costs (airfare, lodging, meals, etc.) directly related to the execution of the project

**Consultant Services:** Fees for external experts providing specialized knowledge or skills

**Subcontractors/Subawardees:** Costs associated with third-party organizations contributing to the project (e.g., universities, research labs)

**Other Direct Costs:** project-specific computing costs, fee for service, project specific facilities or equipment rental

**Indirect Costs (Overhead):** General operational expenses (administration, facilities, utilities, communications) tied to the project. Use "Safe Rate" for Phase I

**Fee/Profit:** Typically up to 7% of total costs, allowed under SBIR guidelines. Use the maximum allowed.

**\*Federal Acquisition Regulation (FAR) Part 31, Contract Cost Principles and Procedures**

# Unallowable Expenses\* in SBIR/STTR

**General and Administrative Expenses Not Tied to the Project:** Routine office supplies, general company administrative costs, and unrelated business expenses (Included in indirect rate)

**Entertainment and Alcohol:** Costs associated with entertainment, social activities, and alcohol

**Lobbying Costs:** Expenses related to influencing legislation or obtaining grants and contracts

**Marketing and Sales Costs:** Expenses associated with product marketing, sales, or business development activities

**Patent and Intellectual Property Costs:** Costs related to filing patents or other intellectual property expenses (unless explicitly allowed by the funding agency)

**Bad Debts and Fines:** Costs for uncollectible debts, fines, penalties, and damages

**Interest and Financing Costs:** Interest on loans, financing fees, or other debt-related costs

**Profit Distributions to Shareholders:** Dividends or other profit-sharing payments to company owners or shareholders beyond the collected “fee”

**Personal Use Items:** Items intended for personal use or not directly related to the project

**\*Federal Acquisition Regulation (FAR) Part 31, Contract Cost Principles and Procedures**

# Key Accounting Considerations

- Financial capability to perform
  - Especially when in a 'loss' financial position!
- Adequate accounting system:
  - Time Charging
  - Chart of Accounts
  - Budgets
- Job cost accounting:
  - Segregation of Project/Contract Costs
- Reporting (internal and external practices)
  - Billing, Reporting, Shipping and other forms

# Activity - Between Workshop II and Workshop III

- Interact with Program Managers/Partners with Concept Write-up
- Write Technical Objective
- Outline Work Plan Aim or Objective and Tasks to support each aim (3 aims MAX)
- Draft Budget

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# About Dan Suhr

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## Director of Research and Development/Co-Founder

Dan's roles at Independent Platform include overseeing company projects and coordinating technical staff. In addition he is a proposal/plan writing workshop instructor, Coach of startup clients, and moderator of topic-specific workshops. Dan specializes in addressing: Innovation Research, Partner Search, Research/Work Plans, Strategic Alliances, Roadmaps, Finance/Forecast, and Project Evaluation.

Dan's early experience was in the financial industry working for a Boston investment firm. He was subsequently drawn to the finance/cost accounting sciences in manufacturing organizations. These roles transitioned to strategic management and global mergers and acquisitions (M&A) efforts. Dan was founder of an internet startup and raised more than \$2M in capital for the venture. He has written and performed on grant awards since 2006.

Dan has a PhD in Political Science (Social Research) along with a MBA and his undergraduate Finance degree. Dan was adjunct faculty, teaching Strategic Management Capstone courses at Southern New Hampshire University's graduate school.