Developing a Standardized Electronic Cigarette

for clinical research studies

Slides will be posted with the solicitation

https://www.fbo.gov/spg/HHS/NIH/NIDA-01/N43DA-15-8921/listing.html

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NIH Interest in Electronic Cigarettes

Impact on Public Health is Unknown

Questions of interest include:

- Can e-cigarettes reduce harm to smokers
- How safe are the e-liquids?
- Can e-cigarettes be used to quit smoking?
- How safe is “second-hand” vapor?

Providing scientific data to inform public policy decisions is part of the NIH mission

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How to Answer the Questions

Electronic Cigarette Clinical Research

Inpatient Laboratory Studies

(1-3 years duration)

- Nicotine absorption studies
- Craving studies
- Vaping style / efficiency studies *(Puffing Topography)*

Outpatient Studies

(2-5 years duration)

- Comparisons of e-cigarettes
- Preferences vs. tobacco cigarettes
- Smoking cessation, harm reduction, *etc*

Clinical Studies Need a Defined Standard

- E-cigarette must be well characterized with known nicotine delivery capabilities (per puff, duration of cartridge / tank, *etc*).
- The chosen design must be available for a substantial period (5+ years).
- Clinical studies that could support a therapeutic claim will require an FDA-approved *Investigational New Drug application (IND).*

What is an IND?

Consists of two parts:

Study design

- Clinical study protocol provided by investigator.

Drug Master File (DMF)

- *Chemistry Manufacturing and Controls* (CMC) Shows all ingredients are manufactured according to *current Good Manufacturing Practices* (cGMP).
- Safety and device delivery characteristics.

Why Participate in Developing a Clinical Standard?

- **Informing Product Development-** Characterizing your existing product will aid future design efforts.
- **Diversified Income Stream-** Clinical researchers in the US (and beyond) represent a *limited / no-competition market niche,* where a *stable device design is prized.*
- **"Free" Clinical Data-** The supplier would be free to publicize the source of the standard used in a clinical study.
- **Other Benefits-** Corporations have found individual ways to benefit from an association with the world's largest medical research funding agency (NIH).

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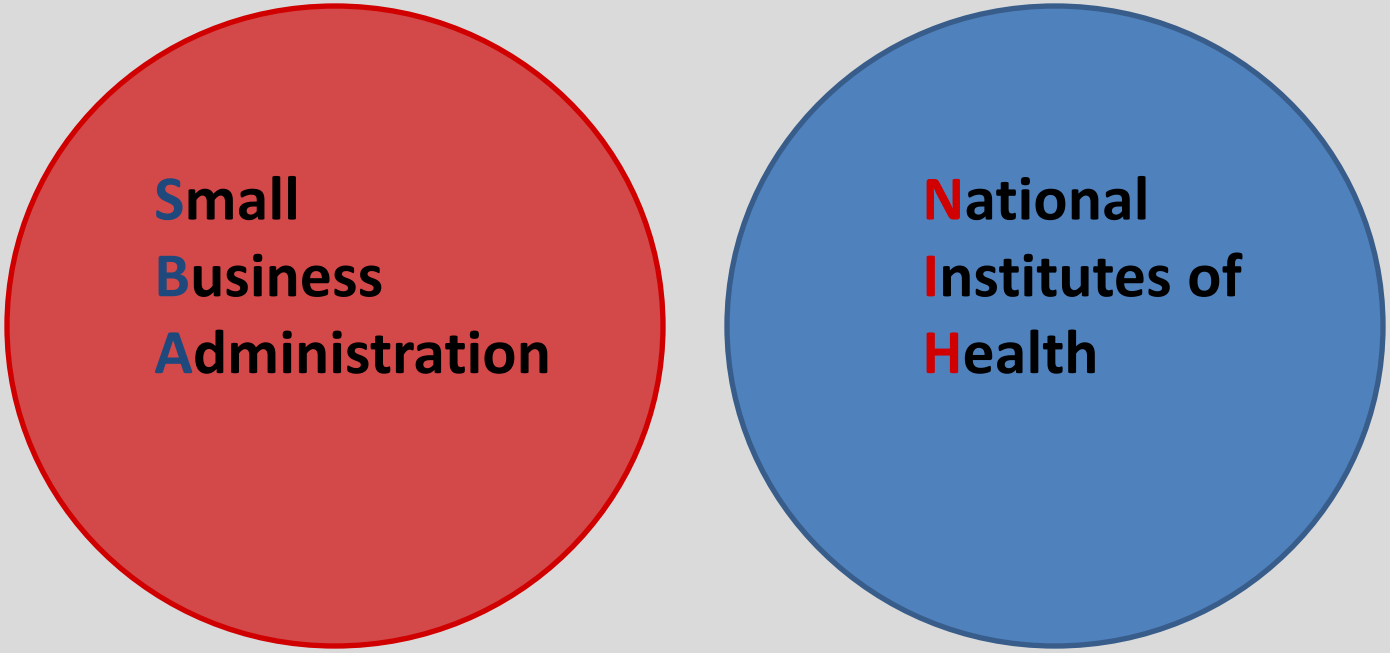
What is an SBIR?



SBA

Promotes development of American owned business with < 500 employees.

NIH

27 Institutes and Centers that conduct and sponsor Public-Health related scientific research

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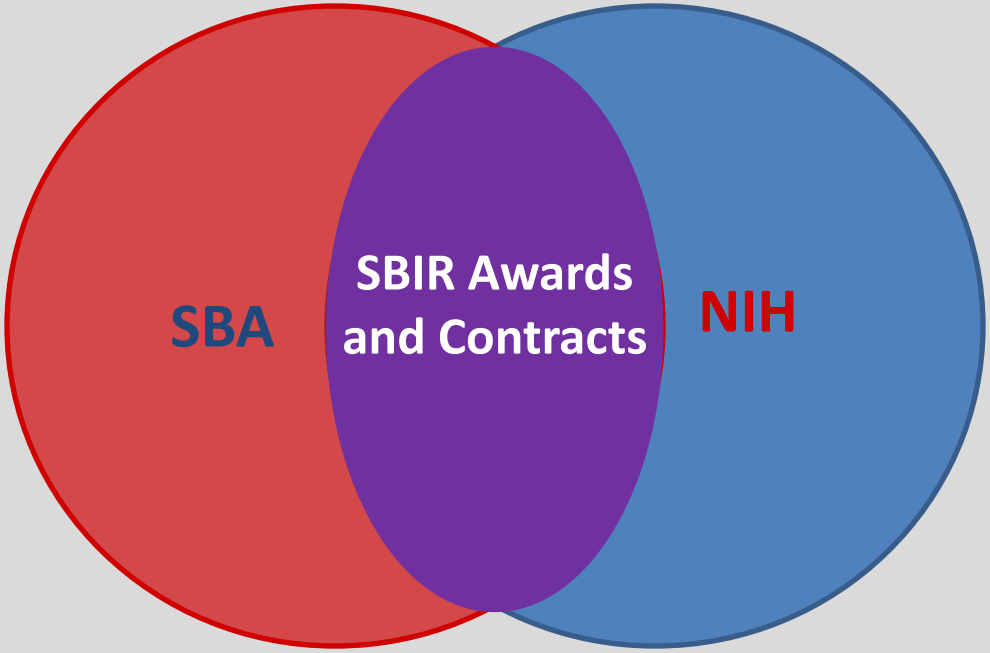

Small **B**usiness **I**nnovation **R**esearch

Research with a *viable commercial product or service* as the end-product and scientific / public health value.

What Are SBIR Contracts?

Differs from a *Build & Supply* government contract:

- SBIR funds enable development of a viable business venture in an area of significance to Public Health.
- The final product is not supplied exclusively to the US government.

SBIR Contracts have two phases:

Phase1

Data generation to demonstrate product feasibility.

Phase2

Product development phase.

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Details of the Phase 1 Contract

Six month contract with a value of $225,000

Phase 1: Development and filing of a DMF, including:

- Certificate of Analysis (CoA) for the e-liquid ingredients.
- CoA for the vapor produced using a standard puffing protocol.
- Demonstration of cGMP manufacturing capacity for both device and e-liquid.
- Demonstration of batch reproducibility.
- Initiation of stability studies. 30 day stability data to be included in Phase 1 report.

Up to four Phase 1 contracts will be issued

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Details of the Phase 2 Contract

Up to two contracts will be issued, with a value of $1.5 million for a period of 18 months.

Phase 2 : human studies

- **Part I:** Clinical study to assess nicotine delivery to the blood stream (12 subjects). *NIDA may assist with study design and finding clinical partners*.

REQUIRED MILESTONE: **>15ng/ml nicotine in blood after 30 minutes use.**

- **Part II:** One week outpatient study to evaluate the palatability, usability and durability of the device (24 Subjects).

If device fails the milestone, another Phase 2 applicant will be invited to initiate studies.

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How Does One Apply for Phase 1?

- **Read the Solicitation (RFP).** Complete project details and deliverables are on p44-46.
  https://www.fbo.gov/utils/view?id=802d74c2caa07b040ee9a3891a790c8c
- **Examine SBIR Eligibility Requirements.**
  http://grants.nih.gov/grants/funding/sbir/eligibility.htm
- **Register with Award Management.** http:// www.sam.gov
- **Register with SBA Company Registry.** http://sbir.gov/registration
- **Submit an Intent to Apply by Aug 31 2014**.
  http://www.drugabuse.gov/funding/funding-opportunities/nida-requests-contract-proposals-rfps/proposal-intent-response-sheet
- **Submit *paper copies* of your full proposal by Sept 30 2014**

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How Does One Apply for Phase 1?

The proposal has four parts:

Item 1: Technical Element (1 Original, 10 Copies)

- Proposal Cover Sheet (Appendix A) - http://grants.nih.gov/grants/funding/SBIRContract/ContractAppendixA.docx
- Table of Contents
- Abstract of the Research Plan, (Appendix B) - http://grants.nih.gov/grants/funding/SBIRContract/ContractAppendixB.docx
- Technical Element Contents

Item 2: Pricing Proposal (Appendix C, 1 Original, 10 copies)

- http://grants.nih.gov/grants/funding/SBIRContract/ContractAppendixC.docx

Item 3: SBIR Application VCOC Certification (If applicable)

Item 4: Proof of Registration in the SBA Company Registry

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Important information:

- **Please communicate any questions as early as possible.** The Contract Officer may be unable to respond 2-3 weeks prior to application deadline.
- **Questions and responses may be publically posted.** In order to equally inform all applicants, Q&A will be published on the solicitation web site.

Address proposals and questions to:

Mr. Brian O'Laughlin
Phone: (301) 443-6677. **E-mail:** bo50d@nih.gov

Address: NIDA R&D Contracts Management Branch,
Office of Acquisitions,
NIDA 6001 Executive Boulevard, Room 4211, MSC 9559
Bethesda, MD 20892-9559 (use *Rockville,* MD *20852, if hand-delivered or by overnight service*)

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Questions and Answers

Q: Will the e-cigarette reference device identify the manufacturer and model?

A: No, the device will be unmarked or carry a generic label such as *"Reference Electronic Cigarette".*

Q: Could the clinical standard supplier publicize the results of NIH supported studies using their device?

A: NIH strongly encourages researchers to publish the data from their studies. As such the results would be public information.