

# Preparing To Write an SBIR/STTR Federal Research Grant

**Kafryn W. Lieder, PhD**  
**The Well-Tempered Word, LLC**  
**October 13, 2011**



UW-Madison  
Small Business Development  
Center

**WISCONSIN**  
SCHOOL OF BUSINESS



**WISCONSIN**  
ENTREPRENEURS' NETWORK

**Wiscontrepreneur**  
A Program of the UW-Madison Office of Corporate Relations

the  
well-tempered  
**WORD**  
LLC

# Overview

- **Why SBIR? (recap)**
- Registrations
- Plan your proposal
- Write your proposal
- The application package – the rest of the submission
- Post-submission tasks
  - Not funded: Resubmit?
  - Funded: Next steps

# Value of SBIR/STTR funding

- Non-dilutive investment; increase equity
- Vetted by federal agency
- Increases business credibility, visibility, recognition
- Supports R&D for new products; stimulates economy
- Helps bootstrap start-up company – attract investors
- Encourages academic-industrial partnerships

# SBIR/STTR: Three phases

## Phase I (\$80–150k+) – *focus of talk*

- Proof of principle/feasibility study
- 6–24 months
- [DoD: Quad chart & white paper]

## Phase II (\$500k–1M+)

- Validation study
- 2–3 years

## Phase III

- Commercialization
- No SBIR/STTR funds

# Funding is tight

- $\leq 10\text{--}15\%$  funded
- Consider submitting to more than one agency

# Overview

- Why SBIR? (recap)
- **Registrations**
- Plan your proposal
- Write your proposal
- The application package – the rest of the submission
- Post-submission tasks
  - Not funded: Resubmit?
  - Funded: Next steps

# Registrations

- Set up company (EIN)
- DUNS (Data Universal Numbering System) number
  - “Universal identifier for applicants for Federal grants or cooperative agreements”
- Central Contractor Registry (CCR)
- Grants.gov
- eRA Commons; FastLane; DoD
- ***Help desk***

# Registrations – Timing

- Set up company: days to months
- DUNS number:  $\leq 1$  week
- CCR:  $\leq 1$  week
- Grants.gov:  $< 1$  week
- FastLane:  $< 1$  week
- eRA Commons:  $\leq 2$  weeks
- DoD:  $\leq 1$  week
- ***Track information!***

# Overview

- Why SBIR? (recap)
- Registrations
- **Plan your proposal**
- Write your proposal
- The application package – the rest of the submission
- Post-submission tasks
  - Not funded: Resubmit?
  - Funded: Next steps

# Plan your proposal

*The 8 Ps: Prior planning and proper preparation and processes prevent poor performance.*

- **Phase I proposals: 200–450 h**
- Unmet need; fits your technology
- Commercializable
- Patentable
  - IP protected
- Business model
- ***Then, find funding!***

# *But wait!* Timing

- Idea → submission
  - Funding gap ( $\geq 6$  months)
- Phase I: 6–24 months
  - Funding gap ( $\geq 6$  months)
- Phase II: 2–3 years
  - Funding gap
- Phase III: commercialization
  - If FDA approval needed: years

# OK – Find funding

- Not quick, simple, or trivial
- Useful websites
  - [www.sbir.gov](http://www.sbir.gov)
  - [www.zyn.com/sbir](http://www.zyn.com/sbir)
  - [www.grants.gov](http://www.grants.gov)
  - [www.fbo.gov](http://www.fbo.gov) (Federal business opportunities)
- ***Subscribe to notices!***

# More about funding

- ***Network!***
- Visit agency websites
  - Agency's mission
  - Identify end-user(s)
  - Understand requirements, if funded (e.g., DCAA (Defense Contract Audit Agency)-compliant accounting system)
- Attend government-hosted industry days
- Attend conferences & outreach events
- Attend national or single-agency SBIR/STTR conferences

# Preliminary steps

*You might not need a business plan, but you **do** need a plan for your business.*

- Find and read solicitation ***carefully***
  - Inter-agency consistency non-existent
  - Note timing for contacting Program Officer
  - Note (and abide by) requirements
  - Note (and abide by) deadlines

# Basic project planning

- Confirm team and consultants
- Assign tasks
- Determine budget
- Literature search (bibliography)
- Market research
- Graphics

# External documents (agency-specific: a sampling)

- ***Request these promptly!***
- Letters of support for technology
- Biosketches, letters of support
  - Consultants
  - Co-PIs
- Consortium arrangements
  - Letter of intent
  - Subaward budget and justification
  - Facilities and equipment

# SBIR/STTR *not* R01

- Solve a problem, an unmet need
- Commercializable idea
- Mark proprietary language
- Shorter grant periods
- Ad hoc, not standing, review committees – *not* specialists
- Compelling/Interesting proposal

# Contact program officer

- Timing varies by agency (e.g., DoD vs. NIH and NSF)
- Contact program officer *early*
- Assemble information on
  - Your company
  - Overall project
  - Specific aims/Technical objectives
  - Team (internal and external)
  - Budget
  - Phase II
  - Commercialization

# Overview

- Why SBIR? (recap)
- Registrations
- Plan your proposal
- **Write your proposal**
- The application package – the rest of the submission
- Post-submission tasks
  - Not funded: Resubmit?
  - Post-submission tasks – funded

# Write your proposal

- *More time than expected!*
- Focused proposal (especially Ph. I)
- Assign tasks to team
- Literature search
- Assemble preliminary data/graphics
- Market research/Competitive landscape
- Experimental design
- Think ahead to Phases II and III

# General writing tips

- *Scientific American* style
- Show minimal math formulae
- Use subheadings
- Summarize key points
- Break up text with graphics and tables
- Use color (when permitted)

# More writing tips

- Be critical of technology
  - Think like competitors and customers
- Copy key points from instructions into proposal outline while drafting
- Mark proprietary language
- Re-read topic after each draft
  - Requirements met?

# Common-sense tips

- Spell check
- Define acronyms when first used (repeat, if appropriate)
- Note and abide by formatting guidelines (page limits, font size, etc.)
- Have ***at least*** one outsider read your proposal

# Aims/Objectives

- Write first and re-write
- Usually  $\leq 1$  page
- Brief introduction
  - Problem/Need
  - Your solution
  - Overall goal
- 1–5 aims/objectives
  - Sub-aims OK
- Concrete milestones/expected outcomes
  - Achievable **and** innovative
- Think ahead to Phase II and Phase III
  - Long-term objectives

# Experimental design or work plan

- Write second
- Summary table of project
- Well-developed/Well thought-out plan
  - Not just **what**, but **how**
- Potential commercial applications
- Milestones
- Potential pitfalls/Alternative approaches
- Timeline for project

# Preliminary results/data

- Write third
- *“Not required”*
- Establish credibility/skill
- Choose data/graphics wisely
- Summarize results
- Experiments
  - Purpose
  - Approach used
  - Importance of results
- Potential commercial applications

# Background/Significance

- Write later
- Current situation
  - History (knowledge of field)
  - Limitations (need for better solution)
  - What your company has accomplished
- Your solution
  - Concept diagram
  - Focus on problem/need, **not** your technology
- Current market
  - Knowledge of competitive landscape
  - Commercial potential

# Innovation

- Put the **I** in SB**I**R
- Write later
- Distinguish your approach from others
  - Advantages
  - Characteristics of ideal
- Demonstrate novelty or uniqueness
  - Know your competition
  - Disruptive technology

# Abstract/Project summary

- Write last
- Reviewers *will* read
- Complete and compelling
- **No** proprietary information
- Read instructions

# Final steps

- At least one other set of eyes – *well in advance*
  - Someone outside company, preferably outside field
  - Program officers will sometimes help
- Eye-opening reality check

# Graphics and design *do* *matter*

- Use wisely
- Complement, strengthen text
- White space
- Clear labels
- Clear captions



# Presentation *does* matter

## Specific Aims

Ciisto moditi doluptatio vit eum quam nonescit duscus di coreptae. Ed moluptatior simolor estium des est ipsuntibeaH serum estionet aut alibus, cum laut que prest, ad qui cones autatur, officil im expellestis que dolorrorro cus, quam voluptas aut et et liquatur sapiti, perumquam esequae eossi con nihilibus sumquaspera il inciatur. Fugias volupti onsequis eos ant volorenecat delende rehenece cum quantis et officimus non por sit harumet. Otam volut ut laborestiu ma corero berum. ui ulluptiati blabore ped quasinc illaccae. Menessitat hit andae percienim velest aute liciam sincid maio beaqui aperspe enis voloresti cus, none pelectem.

Ad qui dustion nobiti rem non plaborrum a dus et odionsequis quis molutame nonsequ asimenim quaspel iuptas moluptam faceature poritae porit omnihicid quis siti ditio blam facepra tatiatur acea dollace rchitat volut derovid ernatem sinciditati ad mi, sus di ne ad ex eum evenduci digeniendus et, susande ligendigent adiaeru mquossi ncimet aut vit mi, conetur.

We propose the following specific aims for this Phase I study:

Specific Aim 1: Nostio. Et autasincte nullabor rehenia dolor reariae venis quo corro occus doluptate nam alitate ndelestem sum aut omnistet fugita ditistius. Essimini volupti denihiligent dolupta turissedi ilit dolorem quam cullatem repudicimpos porem ut apistrum nobita voloremquos sit minvendis di culloriatum rehenece cum quantis et officimus non por sit harumet volupta tectis. Milestone: Modigni vitincipsus aditaqui omnissitaqui qui am, si dolorerum audis eium quo voluptam isitat vitio. Luptati officitis quo ipistem quodistempora nis eum quatiunt quaerum ut volor aut et la quo bea velibus aci alitat.

Specific Aim 2: Nostio. Et autasincte nullabor rehenia dolor reariae venis quo corro occus doluptate nam alitate ndelestem sum aut omnistet fugita ditistius. Essimini volupti denihiligent dolupta turissedi ilit dolorem quam cullatem repudicimpos porem ut apistrum nobita voloremquos sit minvendis di culloriatum rehenece cum quantis et officimus non por sit harumet volupta tectis. Milestone: Modigni vitincipsus aditaqui omnissitaqui qui am, si dolorerum audis eium quo voluptam isitat vitio. Luptati officitis quo ipistem quodistempora nis eum quatiunt quaerum ut volor aut et la quo bea velibus aci alitat.

# Presentation *truly* matters

The entire Research Plan contains proprietary/privileged information that [name of company] requests not be released to persons outside the Government, except for purposes of review and evaluation.

## 2. Specific Aims

Ciisto moditi doluptatio vit eum quam nonescit duscus di coreptae. Ed moluptatior simolor estium des est ip-suntibea serum estionet aut alibus, cum laut que prest, ad qui cones autatur, officil im expellestis que dolorror-ro cus, quam voluptas aut et et liquatur sapiti, perumquam esequae eossi con nihilibus sumquaspera il inciatur. Fugias volupti onsequis eos ant volorenecat delende rehenecte cum quantis et officimus non por sit harumet. Otam volut ut laborestiu ma corero berum. ui ulluptiati blabore ped quasinc illaccae. Menessitat hit andae per-cienim velest aute liciam sincid maio beaqui aperspe enis voloresti cus, none pelectem.

Ad qui dustion nobiti rem non plaborrum a dus et odionsequis quis molutame nonsequ asimenim quaspel-luptas moluptam faceature poritae porit omnihicid quis siti ditio blam facepra tatiatur acea dollace rchitat volut derovid ernatem sinciditati ad mi, sus di ne ad ex eum eventuduci digeniendus et, susande ligendigent adiaeru mquossi ncimet aut vit mi, conetur.

We propose the following specific aims for this Phase I study:

■ **Specific Aim 1:** Nostio. Et autasincte nullabor rehenia dolor reriae venis quo corro occus dolup-tate nam alitate ndelestem sum aut omnistet fugita ditistius. Essimini volupti denihiligent dolupta turissedi ilit dolorem quam cullatem repudicimpos porem ut apistrum nobita voloremquos sit minvendis di culloriatum rehenecte cum quantis et officimus non por sit harumet volupta tectis. **Milestone:** Modigni vitincipsus adita-qui omnissitaqui qui am, si dolorerum audis eium quo voluptam isitat vitio. Luptati officitis quo ipistem quodistempora nis eum quatiunt quaerum ut volor aut et la quo bea velibus aci alitat.

● **Specific Aim 2:** Ulles maximagnis inullore nobit ratiae. Nequi bla doloruptae. Mo vent que volo-dus mi, venimusa corum aut veliqui bustiatur rero expla consequi sit as velenimus nisim. Auta pe sust-cii squidit, qui invelitam quatia qui autate experfe rnatquas maionsequae is denti odi nonsequibus, consed ulpa quis derum eosam. **Milestone:** Asperia aligation cum aut intibearum ea que il et.

# Overview

- Why SBIR? (recap)
- Registrations
- Plan your proposal
- Write your proposal
- **The application package**
- Post-submission tasks
  - Not funded: Resubmit?
  - Post-submission tasks – funded

# Infrastructure documents

- Application package ( $\geq$ 40–60 hours)
  - ***Not trivial – don't wait to start!***
  - Agency-specific, even if through Grants.gov
  - Read instructions; make checklist
  - Many attachments not time-sensitive
    - ***Assemble them ASAP***

# Application >> proposal

Final\_Ph\_II\_Application.pdf - Adobe Acrobat Pro

File Edit View Document Comments Forms Tools Advanced Window Help

Create Combine Collaborate Secure Sign Forms Multimedia Comment Sticky Note Text Edits Show

1 / 301 198%

OMB Number: 4040-0001  
Expiration Date: 06/30/2011

**APPLICATION FOR FEDERAL ASSISTANCE  
SF 424 (R&R)**

<b>1. * TYPE OF SUBMISSION</b>		<b>3. DATE RECEIVED BY STATE</b>	<b>State Application Identifier</b>
<input type="checkbox"/> Pre-application <input checked="" type="checkbox"/> Application <input type="checkbox"/> Changed/Corrected Application		<input type="text"/>	<input type="text"/>
<b>2. DATE SUBMITTED</b>	<b>Applicant Identifier</b>	<b>4. a. Federal Identifier</b>	
<input type="text" value="04/05/2011"/>	<input type="text"/>	<input type="text"/>	
		<b>b. Agency Routing Identifier</b>	
		<input type="text"/>	

- NIH Ph. II
  - Proposal – 13 pages
  - Application – **301 pages**

# Grants.gov applications

- Some requirements
  - Zip+4 for each project site
  - DUNS number – project sites and sub-awardees
  - Congressional district number – company and project sites

# Required NIH attachments

- Abstract
- Bibliography
- Biosketches
- Budget and justification
- Cover and Assurance letters
- Facilities and equipment
- Letter(s) of support – from consultants
- Letter(s) of support – from potential customers, collaborators, investors
- Narrative
- Research plan (the proposal itself)

# Other NIH attachments

- Commercialization history
- Consortium arrangements
- Data/Resource sharing plan
- Human subjects – 4 sections
- Justification for foreign business
- Leadership plan
- Letter(s) of intent and consortium
- Select agents
- Sub-award budget(s) and justification(s)
- Vertebrate animals

# NSF attachments

- Project summary
- Project description (the proposal itself)
- References cited
- Biographical sketches
- Budgets and budget justification
- Current and pending support
- Facilities, equipment and other resources
- Letters of support for technology
- Data management plan

# Other NSF attachments

- Company commercialization history
- Post-doc mentoring plan
- Letters regarding human subjects
- IACUC approval of animal use
- List of suggested reviewers
- Proprietary information not marked in proposal

# USDA attachments

- Abstract/Project summary
- Project narrative (the proposal itself)
- Bibliography & references cited
- Biosketches
- Budget and budget justification
- Current and pending support
- Facilities, equipment, and other resources
- Letters of support on value of project
- Letters of support from consultants

# Other USDA attachments

- Cooperative and institutional units involved
- Appendices
- Collaborative arrangements

# Overview

- Why SBIR? (recap)
- Registrations
- Plan your proposal
- Write your proposal
- The application package
- **Post-submission tasks**
  - Not funded: Resubmit?
  - Post-submission tasks – funded

# Post-submission tasks

- Track progress (if possible)
  - Supplemental materials
- Be prepared:  $\leq 10\text{--}15\%$  funded
- Read debriefing/summary statement carefully

# Overview

- Why SBIR? (recap)
- Registrations
- Plan your proposal
- Write your proposal
- The application package
- Post-submission tasks

**–Not funded: Resubmit?**

– Post-submission tasks – funded

## Not funded: Resubmit?

- Read debriefing/summary statement/panel review carefully
- Contact program officer
- ***Substantially*** revise and resubmit

# Overview

- Why SBIR? (recap)
- Registrations
- Plan your proposal
- Write your proposal
- The application package
- Post-submission tasks
  - Not funded: Resubmit?

**–Funded: Next steps**

# Funded – Next steps

## *Business risk management strategies*

- Intellectual property (IP)
- Patents, trademarks, copyrights (PTO)
- Quality management system (QA/QC)
- Regulatory affairs
  - FDA (medical)
  - OSHA (safety)
  - EPA (chemical-intensive)
  - USDA (agriculture)

## Funded – More steps

- Manufacturing and distribution
- Human resources (HR)
- Information technology (IT)
- Reporting requirements
- Financial (bookkeeping, accounting, letter of credit)
  - ***Misuse of Federal funds is a felony***

# Conclusion

- >\$2B/year for SBIR/STTR
- Unmet need fits your technology
- IP covered
- Business started
- Strong team
- Funding sources found
- Registered
- Excellent proposals
- ***Adhere to post-award rules***

# Post-workshop information

- Tip sheet for registrations
- Company data sheet (to track registrations)
- Information about NIH institutes, centers, study sections

**Kafryn W. Lieder, PhD**

[kafrynw@gmail.com](mailto:kafrynw@gmail.com)

[Kafryn.lieder@wtword.com](mailto:Kafryn.lieder@wtword.com)

[www.wtword.com](http://www.wtword.com)

**608.513.6907**