

US EPA ARCHIVE DOCUMENT

# National Science Foundation (NSF)

Prakash Balan, Ph.D  
Program Director  
NSF SBIR/STTR Program  
[pbalan@nsf.gov](mailto:pbalan@nsf.gov)  
Arlington, VA



NSF SBIR/STTR Home:  
<http://www.nsf.gov/eng/iip/sbir/index.jsp>



# National Science Foundation

- **NSF's Vision** – NSF's vision is a nation that creates and exploits new concepts in science and engineering and provides global leadership in research and education
- ~\$7.3B Budget, ~\$177M for Small Business Program
- 320,900 researchers, postdoctoral fellows, trainees, teachers, and students supported
- 214 Nobel Laureates supported since 1950



# **SBIR Program – a brief history**

- **In 1976**
  - ✓ Roland Tibbetts initiated an NSF program to support small businesses
  - ✓ Provided early-stage financial support for high-risk technologies with commercial potential
  
- **In 1982**
  - ✓ Congress passed Small Business Innovation Development Act
  
- **Today**
  - ✓ 11 Federal agencies support SBIR
  - ✓ 5 Federal agencies support STTR
  - ✓ Over \$2.5 billion awarded to small businesses in FY2011
  - ✓ Produces an average of 7 patents/day



## Very broad funding landscape!

Topic	Program Director
Educational Technologies and Applications (EA)	Glenn H. Larsen, <a href="#">email address</a>
Information and Communication Technologies (IC)	Peter Atherton, <a href="mailto:patherto@nsf.gov">patherto@nsf.gov</a>
Semiconductors (S) and Photonic (PH) Devices and Materials	Steven Konsek, <a href="mailto:skonsek@nsf.gov">skonsek@nsf.gov</a>
Electronic Hardware, Robotics and Wireless Technologies (EW)	Muralidharan S. Nair, <a href="mailto:mnair@nsf.gov">mnair@nsf.gov</a>
Advanced Manufacturing and Nanotechnology (MN)	Rajesh Mehta, <a href="mailto:rmehta@nsf.gov">rmehta@nsf.gov</a>
Advanced Materials and Instrumentation (MI)	Benaiah Schrag, <a href="mailto:bschrag@nsf.gov">bschrag@nsf.gov</a>
<b>Chemical and Environmental Technologies (CT)</b>	<b>Prakash Balan, <a href="mailto:pbalan@nsf.gov">pbalan@nsf.gov</a></b>
Biological Technologies (BT)	Ruth M. Shuman, <a href="mailto:rshuman@nsf.gov">rshuman@nsf.gov</a>
Smart Health (SH) and Biomedical (BM) Technologies	Jesus V. Soriano, <a href="mailto:jsoriano@nsf.gov">jsoriano@nsf.gov</a>



# NSF SBIR/STTR Budget & Phases

- Award Budget ~ \$177M NSF SBIR/STTR
- NSF does not allocate budgets by topic. There is flexibility. Allocation depends on incoming proposal quality
- Awards (**grants**)
  - **Phase I:** Technology Proof of Concept
    - \$150,000 SBIR, \$225,000 STTR
    - 6 months SBIR, 1 year STTR
    - Phase IB R&D funding match of market validating financial outcomes
  - Additional R&D funds available supporting third party financial engagement (Investors, customers, state support)



# NSF SBIR/STTR Budget & Phases

[2 of 2]

## – Phase II: Technology Development

- \$750,000 SBIR and STTR
- 2 years

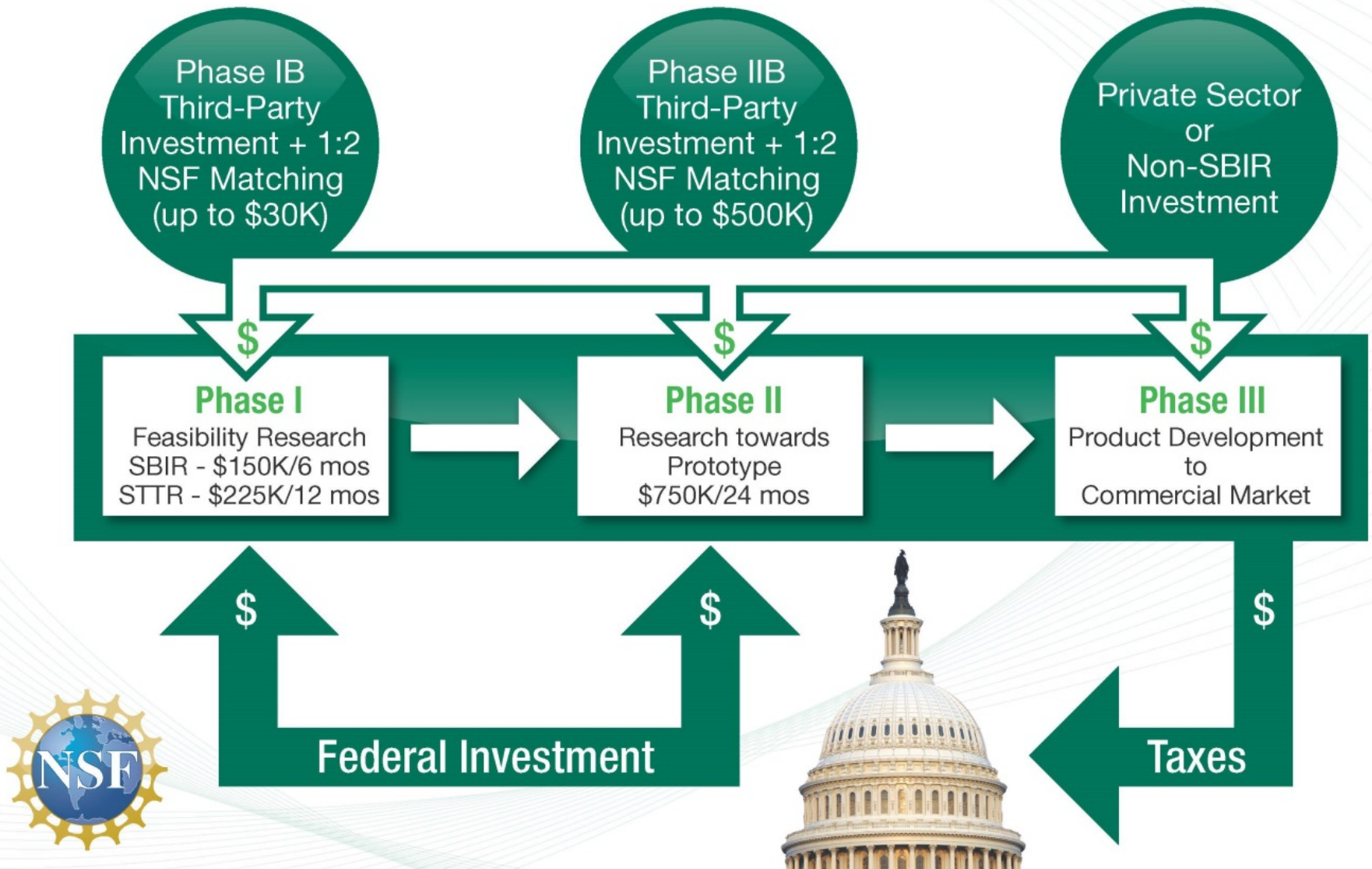
## – Additional Supplemental R&D funding

- R&D funding match for qualifying third party funding/investment/commercial revenues (Phase IIB)
- Technology Enhancement for Commercial Partnerships (TECP)
- Research Internships for Undergraduates and Teachers
- Institutional partnerships – NSF funded Research Centers, Community Colleges

and more!



# NSF SBIR/STTR INNOVATION MODEL







# Chemical and Environmental Technologies (CT)

- Sustainability, green chemistry...
- Energy efficiency, capture, storage, use...
- Water, wastewater treatment, reuse, waste recycling...
- Environmental sensors, Pollution control & mitigation...
- Biofuels, bioenergy...
- Renewable chemicals, materials...
- Technologies for agricultural innovations. ...
- Food, Pharmaceutical and Industrial Biotechnology  
.....and much more!



# How To Apply

- How to Apply –  
<http://www.nsf.gov/eng/iip/sbir/howtoapply.jsp>
- Two solicitations per year typically  
(June and December deadlines)
  - Solicitations are published 3 months ahead of submission deadline
  - **Current Open Solicitations & Deadlines**
    - Jun 16, 2015 (SBIR)  
<http://www.nsf.gov/pubs/2015/nsf15546/nsf15546.htm>
    - Jun 18, 2015 (STTR)  
<http://www.nsf.gov/pubs/2015/nsf15545/nsf15545.htm>
- Technology Topics:  
<http://www.nsf.gov/eng/iip/sbir/topics.jsp>



# Looking to fund a new/novel innovation?

## Discuss it with a Program Director!

- Email a 2 page executive summary discussing the following aspects of the project:
  - Company and team
  - Market opportunity, value proposition, and customers
  - Technology/innovation
  - The competition
  - Research outline



# **A versatile team of Program Directors**

- 9 Program Directors run the SBIR/STTR program
- Broad industrial experience
  - Experience spanning large & small business, startups, investment, technical expertise and business experience
- Strong mentorship of funded companies
- Companies are actively monitored throughout the award period



# Required Registrations

[Dun and Bradstreet Universal Numbering System \(DUNS\)](#) – All registrations require that applicants be issued a DUNS number. After obtaining a DUNS number, applicants can begin both SAM, and SBA Company registry. The same DUNS number must be used for all registrations, as well as on the proposal.

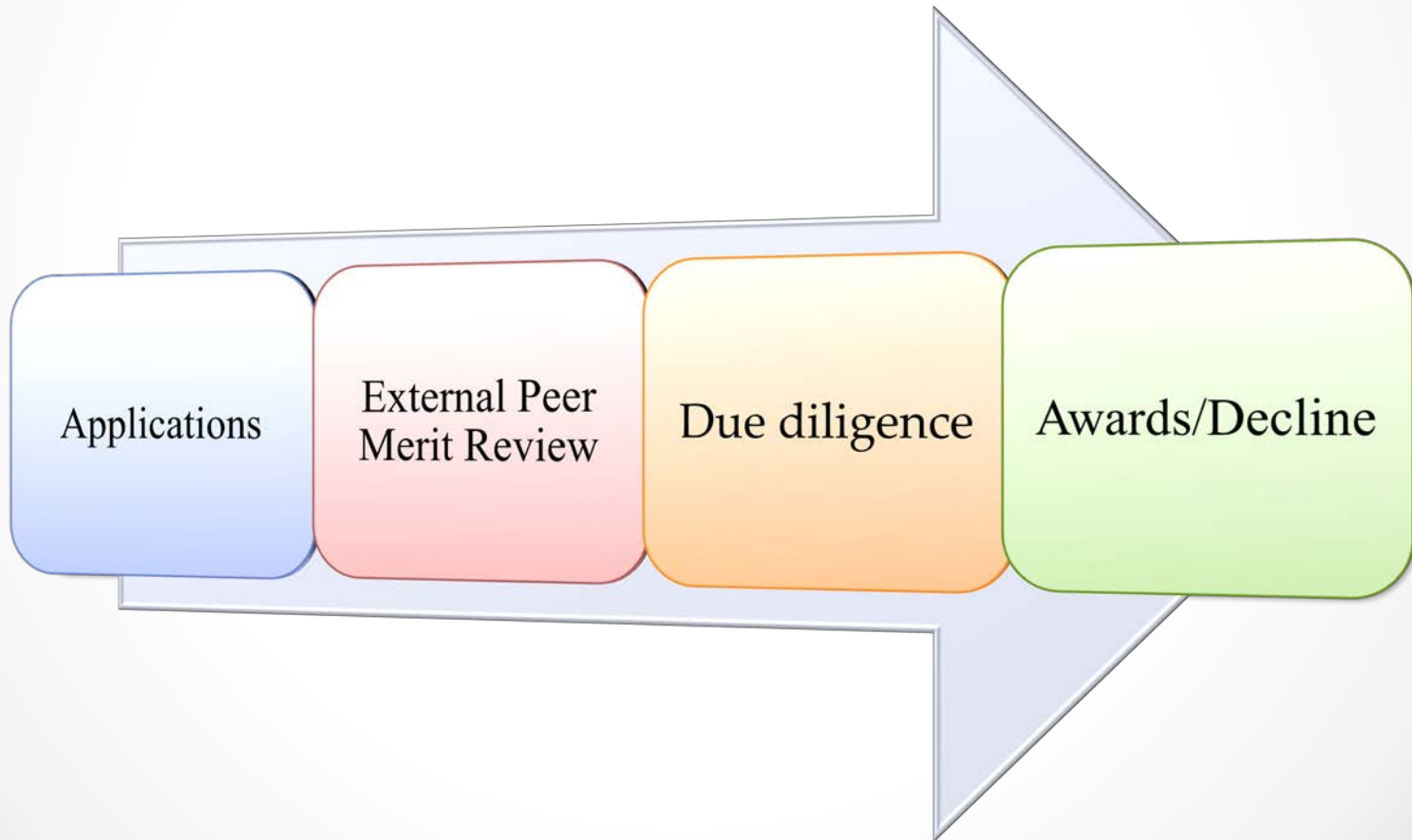
[SBA Company Registry](#) – **New requirement.** See solicitation for instructions on how to register and how to attach proof of registration to your proposal package. Applicants must have a DUNS number to complete this registration. SBA Company registration is **NOT** required before SAM.

[System for Award Management \(SAM\)](#) (formerly CCR) – Applicants must complete and maintain an active registration, **which requires renewal at least annually**. The renewal process may require as much time as the initial registration.

[FastLane](#)– Register the Principal Investigator AND company in NSF's electronic submission system.



# Proposal Evaluation and Selection





# Intensely competitive process

- ~ 1500-2000 Phase I Proposals typically received (annually)
- Roughly 15% of the Phase I proposals may be funded
- Roughly 40% of Phase I companies may make it all the way to Phase II funding
- Proposals reviewed on both technical and commercial merits





# Merit Review

- Invited subject matter experts from Academia and Industry in Panel reviews
- Focus on disruptive and discontinuous technology developments with broad impact
  - ✓ New markets, novel products, enabling platform technologies and applications
  - ✓ Must show a strong commercialization focus and well thought out vision to profitability and growth
- **NOT funded**
  - x *Evolutionary* optimization of existing products and processes or modifications to broaden the scope of an existing product, process or application,
  - x Analytical or “market” studies of technologies, market research
  - x Routine engineering design & system integration



# Proposal Review: Technical Aspects

- ✓ A sound approach to establish technical & commercial feasibility
- ✓ Qualified technical team
- ✓ Sufficient access to resources
- ✓ Reflects “state-of-the-art”



# Proposal Review: Commercial Aspects

- ✓ The **commercial** and **societal benefits**?
- ✓ **Business team** with **relevant skills**?
- ✓ Any past commercialization track record?
- ✓ **Competitive advantage** in the marketplace?
- ✓ **Enabling technologies/platforms** (instrumentation, software, etc.) for further innovation?
- ✓ Ability to **attract further funding from non-SBIR sources** once the SBIR project ends?

# NSF Application to Award Timeline

4-5 months



- Applicants receive detailed feedback.
- Reviewer and panel comments to NSF are shared with applicants verbatim

# TOP 10 Keys to Success



1. Contact the Program Official before applying
2. Begin the registration process 6 -8 weeks in advance
3. Submit your application 3-5 days before the due date
4. Read the solicitation/funding announcement carefully
5. Need an effective team (technical and business expertise)
6. Demonstrate real market interest and need for proposed innovation
7. Anticipate questions and doubts about the proposal
8. If resubmitting, address all previous review comments
9. Use the cover letter to direct your application to the correct review group
10. Remember the agency (e.g. NSF, EPA, NIH) are “investors” not “customers”

# Upcoming Small Business NSF Event to consider

## ➤ Annual NSF Phase II Conference

- ✓ June 1-4 2015, Atlanta
- ✓ 300 NSF Funded Phase II Companies expected
- ✓ Opportunity to connect with path-breaking companies
- ✓ [www.tinyurl.com/SBIR2015](http://www.tinyurl.com/SBIR2015)





# Thank you!

## Questions?

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