

# SBIR vs. STTR: Do you really understand the differences?

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In the 1980s, the United States Congress determined that a great deal of innovation was taking place in this country, and wanted to develop a way to turn those valuable ideas into economic gains: getting new products to market and ultimately creating jobs. But Congress also recognized that research and development came with high risks for small businesses, and it wanted to close that funding gap. From that notion came a program that today provides nearly \$2.5 billion in federal funding to support research and development in small businesses.

There are two programs that fall under that umbrella: Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR). Those two federal funding mechanisms are designed specifically for research and development to:

- Stimulate technological innovation.
- Develop products with commercial merit.

## Key point:

SBIR and STTR are not an alternative source for funding basic research. They are designed to help small businesses turn innovative ideas into market-worthy products.

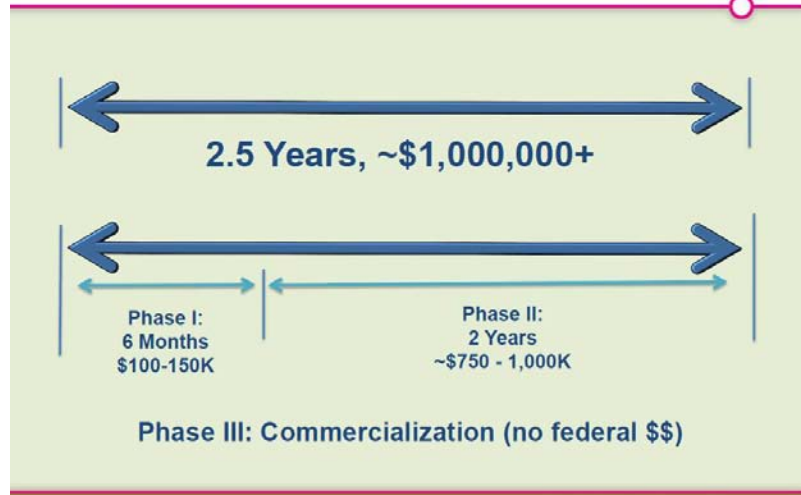
So a small business with a great idea that's based on innovative technology can use SBIR and STTR grants to tap into facilities and brainpower available at universities and other non-profit research institutes. But before any of that collaboration can take place it is critical for small businesses to know which dollars to capture. This whitepaper by Infoready Corp. describes in detail the differences between the SBIR funding mechanism and the STTR funding mechanism so small businesses can better focus their grant-seeking efforts and ultimately land the grants that can help them the most.

## How it works

Under the SBIR and STTR programs, the federal government is an investor seeking to help a small business convert innovative technology into a marketable product. And like any good investor in a risky venture, the government will expect that some significant milestones be met before all the money is awarded. For that reason SBIR and STTR programs are broken into three phases. As an example, look at an SBIR or STTR award for \$1 million over two and a half years. Phase 1 is a feasibility study that takes six months and requires \$100,000-\$150,000. Once those studies are done the remainder of the SBIR and STTR grants are award for between \$750,000 and \$1 million for two more years of research and development. Phases 1 and 2 constitute the entire amount of funding the government will provide.

Phase 3 is actually commercialization, and companies that receive Phase 1 and Phase 2 funding under SBIR and STTR are expected to raise other sources of capital to move their product toward commercialization. It is worth noting that a commercialization strategy must be part of the original application so the funding agency knows that if a small business can complete its research and development, it will have a credible plan to commercialize its product.

## The Basics of SBIR/STTR: 3 Phases

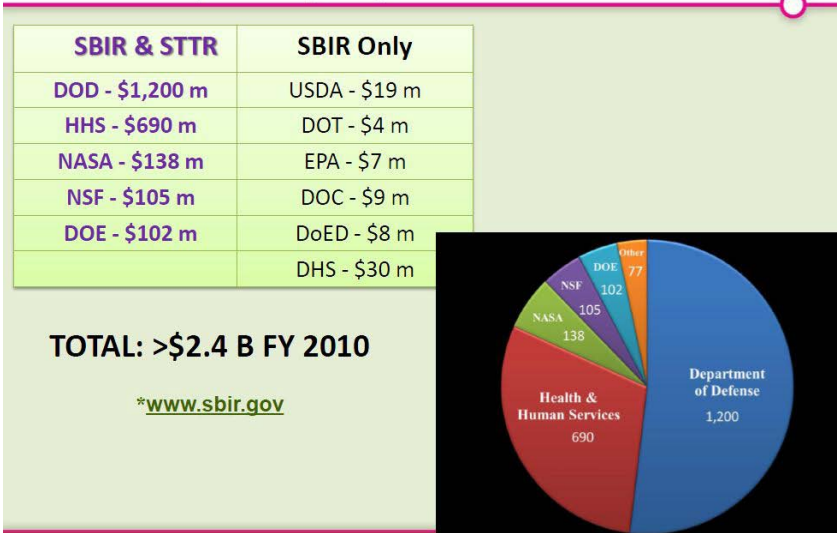


## Where the money comes from

It is a common misconception that SBIR and STTR are a single program, but in fact they are two separate programs, funded through two separate pieces of legislation. The SBIR program was established first and depends upon the agencies' level of extramural research funding. Under the SBIR mechanism, when a government agency's extramural research budget hits a certain threshold, that agency is required to

set aside 2.5 percent of its research budget for Small Business Innovation Research grants and contracts. When the budget hits an even higher threshold, that agency is required to set aside an additional .3 percent of its budget for Small Business Technology Transfer programs.

## Participating Agencies\*



Here's what that means: Of the 11 federal agencies that provide SBIR and STTR funding, only five are big enough to do both: The Department of Defense,

Health and Human Services, the National Aeronautic and Space Administration, the National Science Foundation and the Department of Energy. A comparison of the five programs required to fund both SBIR and STTR with the six programs that are SBIR only shows a distinct difference in funding levels: The

big five have a combined budget of \$2.4 billion, led by the Department of Defense at \$1.2 billion alone. The six smaller programs combined add up to \$77 million.

Because the six smaller agencies on the right in the table above —Agriculture, Transportation, Environment, Commerce, Education and Homeland Security — have such small budgets, they aren't able to fund many million-dollar SBIR projects. However, agencies such as Defense and Health and Human Services are.

## Let's talk eligibility

The overarching requirement for any application to an SBIR or STTR funding program is a simple one: They are available to small businesses only. More specifically, they are available to small businesses that meet the following criteria:

- They must have less than 500 employees, including any employees with affiliate organizations.
- The small business must be set up as a for-profit entity. It needn't be showing a profit, but it must be set up as a for-profit business.
- The business must be located in the United States, and all the money it receives in an SBIR contract or award must be spent in the U.S.
- Some of the research work done under SBIR and STTR awards must be done by the small business in company-controlled research facilities that are suitable for the work. A company-controlled facility is one owned, rented or sublet by the company.
- The business must be majority owned (51 percent or more) by one or more individuals who are U.S. citizens or permanent residents.
- The company must be independently operated by majority owners.

### Be prepared

Eligibility is actually assessed at the time of award, not at the time of application. So it's not a problem if a company submits an application and doesn't meet all the eligibility requirements at the time. But anticipate changes and have a plan for meeting the requirements when the award is given.

## Critical differences

The greatest difference between the SBIR and STTR mechanisms is the amount of money in each program, and the agencies do not have the discretion to move money from one pot to the other. But there are other differences that begin to move the two mechanisms into different directions. One huge difference is in how the mechanisms are set up to interact with universities and other non-profit research institutions. In the early days of SBIR, it was recognized that small business might lack some of the resources they would need to complete their research and development. So

a provision was made to allow small businesses to work with others in the form of consulting agreements or subcontracts with other companies, individuals or even universities.

But then Congress began to realize that a great deal of innovation was taking place at universities that were developing intellectual property. So the government wanted to create some incentives that would encourage small businesses to engage more with non-profit research institutions, so some of that technology could move into the small business arena.

That's when Congress established the STTR program, and that defines the primary difference between the two programs: Where SBIR allows collaboration, STTR requires it. And that collaboration has to be with what's defined as a non-profit research institution, whether that's a university, a hospital, a clinic or something else.

There are other critical differences between SBIR and STTR, including how those mechanisms address subcontracting and how they define a principal investigator.

## Subcontracting

It is important to note the difference between a subcontract and a consultant, both of which are allowed under SBIR rules. A consultant arrangement is one in which the small business hires and pays an individual for his or her advice. A subcontractor arrangement is one in which the small business hires and pays an organization or an institution to do work in that institution using that institution's personnel, materials costs and indirect costs for overhead. In an SBIR the small business has the ability to subcontract up to one-third of the work in phase 1 and up to 50 percent of the work in phase 2. Under the prior example of the NIH phase 1 project with a \$150,000 budget, the SBIR applicant business would be able to spend up to \$50,000 on a subcontract or consultant. In phase 2 of a \$1 million project, the company could subcontract up to \$500,000. That can make a university a significant collaborator, even when the grant applicant is a small business.

### Definitions

**Employment status:** Where one works.

**Percentage effort:** What one does while at work.

Things are different in an STTR, because in an STTR collaboration is required by law between the small-business applicant and a non-profit research institution, and that collaboration is always in the form of a subcontract. In this case the small business has to do at least 40 percent of the work and the nonprofit research institution at least 30 percent of the work. That leaves no more than 30 percent of the work left for the small business, the research institution or others. Using the previous \$150,000 phase 1 NIH example, the small business would have to spend at least \$60,000 on the work and the nonprofit research institution would have to spend \$45,000, leaving up to \$45,000 in work that the company or the institution can do themselves or spend on a subcontract or consultant.

## Principal investigator rules

Every SBIR and STTR award is required to have a lead scientist, engineer or other technical person as a principle investigator, but the way the principle investigator is used differs between the two mechanisms. In an SBIR, the principle investigator must be employed at least 51 percent of the time at the small business, at the time of award and for the duration of the award. In addition, the principal investigator must have at least 10 percent effort on the specific award project. If a principle investigator works anywhere else, he or she must take a leave of absence for the duration of the award in order for the applicant small business to accept the award.

### Common Misconceptions



- Universities can apply for STTRs
- If a University is involved you have to do an STTR
- If the IP comes from a University you have to do an STTR
- If the “inventor” and/or key scientist is faculty you have to do an STTR
- If the PI of an STTR is at the University it is “their”/ “the university’s” grant/contract
- All of the work of an STTR can be done at the University

There have been cases where a researcher maintained his or her full-time university appointment (100 percent) and assumed a principle investigator role in an SBIR (at least 51 percent). But here’s the problem: **One cannot be more than 100 percent employed.**

An STTR is a little bit different because it requires a collaboration between a small business and a non-profit research institution. Because of that requirement, an STTR allows a principle investigator to come from either the small business or the academic institution. And while the 10 percent effort is still required, the principal investigator is not required to take a leave of absence from a research institution and move over to the small business.

## Flexibility? Not always

Because not all agencies use their SBIR and STTR dollars in the same way, it’s possible that a company may not have a choice of which mechanism to pursue. Generally speaking, there are two types of agencies that participate in SBIR. Agencies such as the National Institutes of Health and the National Science Foundation use their research budgets to improve human health or advance science, education and national welfare. Other agencies, such as the Department of Defense and NASA, deploy their research money to help companies and academic institutions develop technologies they can procure and use to meet their own goals. In the case of NIH, NSF, the Department of Energy and some others, most of their SBIR and STTR funding is awarded in the form of grants. Those agencies will typically put

out general topics of research and allow the principal investigator and the small business put forward their ideas for how to help those agencies achieve their missions. That type of research is known as investigator-initiated research, and often the researcher or company can choose whether to apply for a grant under SBIR or STTR. But other agencies like the Department of Defense and NASA have much more specific needs in mind when they solicit research, and those agency-initiated solicitations, which address much more specific topics, are typically awarded in the form of contracts. And it's not uncommon for those solicitations to specify whether a solicitation will fall under SBIR or STTR.

Here's how the **Big Five** do things:

The **Department of Defense** is a contracting agency that puts out certain agency-derived topics. This fiscal year they have five distinct solicitations: Three are SBIR and two are STTR, and the distinct topics may dictate which mechanism a company may pursue.

Whose Idea is it Anyway?

Granting Agencies – NIH, DoE, NSF  
**INVESTIGATOR INITIATED RESEARCH**



Contracting SBIR Agencies – DoD, NASA  
**AGENCY INITIATED TOPICS**

**NASA** is another contracting agency, and it also offers separate research topics that fall under either SBIR or STTR.

The **National Science Foundation** many years ago put out solicitations that allowed companies to choose between SBIR and STTR but in recent years has had separate SBIR solicitations and separate STTR solicitations. The NSF's last SBIR solicitation had had four topic areas — biotechnology and chemical

technologies; education applications; electronics, information and communication technologies; and nanotechnology and advanced materials — and under that umbrella, there was investigator initiated flexibility. The NSF's last STTR solicitation was out last November and it had one topic area: digital gaming in education.

**Health and Human Services** (National Institutes of Health, Centers for Disease Control and the Food and Drug Administration): Through the Health and Human Services omnibus solicitation offers complete flexibility. They release an STTR and an SBIR version concomitantly; the 2011 solicitation was released in January and has three deadlines in April, August and December and a researcher or company can decide whether SBIR or STTR mechanism is right (though note that NIH applies the 51 percent employment rule to both SBIR and STTR).

The **Department of Energy** puts out its one solicitation every year, and it has both SBIR and STTR options. A company may choose which one, or if it meets the requirements of both — a principle investigator who has partner employment at the company, and between the 30 and 33 percent



subcontracts to a nonprofit research institute, that company can actually ask to be considered under both programs.

## How to choose?

Before deciding which mechanism is the right one to pursue, there are several steps a small business should take:

- Answer these questions: Does the agency offer STTR? Is the relevant technology area or specific topic offered under both mechanisms?
- If the answer to both those questions is yes, it's time for the company to take inventory. Does it have the research team it needs? Does it have the facilities, the equipment, the infrastructure? What gaps exist? Can they be filled to meet the requirements of an SBIR or STTR with university-based researchers or facilities?

- Talk to the agency. The agencies use these mechanisms to achieve their goals, and talking to the agency provides much greater clarification about what they're looking for, what their expectations

are and even which mechanism may work better for a certain small business. It's important to note that the agencies are not always available to talk. In all cases the agency has people available to answer questions. But some agencies have periods in the awards process during which they are closed to communication with applicants. It's important to know when those times are.

With SBIR and STTR, there is a great deal of flexibility between the two programs and the agencies that use them for the small business that understands what's required, what's optional, how to build a team, how to find a solicitation, and then how to respond appropriately. If small businesses and academic institutions think in terms of collaborating with each other under both SBIR and STTR, to achieve the goals of those government agencies, which is getting innovative technology to market with great products, everybody wins. That collaboration can help universities transfer technology, help small companies access remarkable facilities, highly skilled people and sometimes intellectual property, and through both mechanisms, help everyone achieve collective goals.

### Critical "watch-outs"



Make sure that:

- **The company has company-controlled research facilities**
- **If the PI of an SBIR also maintains a faculty appointment that they reduce their effort appropriately**
- **You accurately represent the resources that the company "has"**