



**Improving the success of your SBIR/STTR
proposal and the outcomes of your
SBIR/STTR award**

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Intro | *InteliSpark*

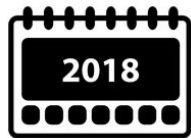
WHY ARE YOU INTERESTED IN SBIR FUNDING?

Non-Dilutive Funding Experience



~450 proposals (90%+ SBIR/STTR) selected for award

\$200,000,000+ in projects selected for award



28 start-up clients funded in 2018

43 start-up clients funded In 2019



Clients have had **>\$800,000,000** in successful exits



Alterna Therapeutics Excelsior biofilms LLC.

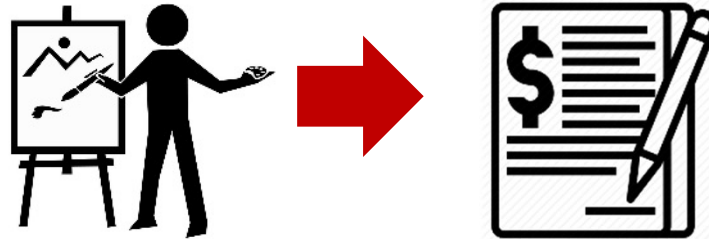


AN UNEFFICIENT MARKET | *Understand your buyer to improve
your Phase I Proposal Success Rate*

You can exploit discontinuities in the funding probabilities

VIEW SBIR/STTR AS A MARKETPLACE

“ART” OF GRANT WRITING



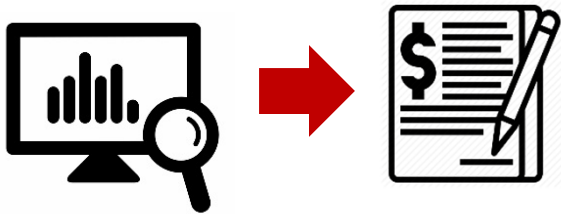
Investigator Driven Perspective



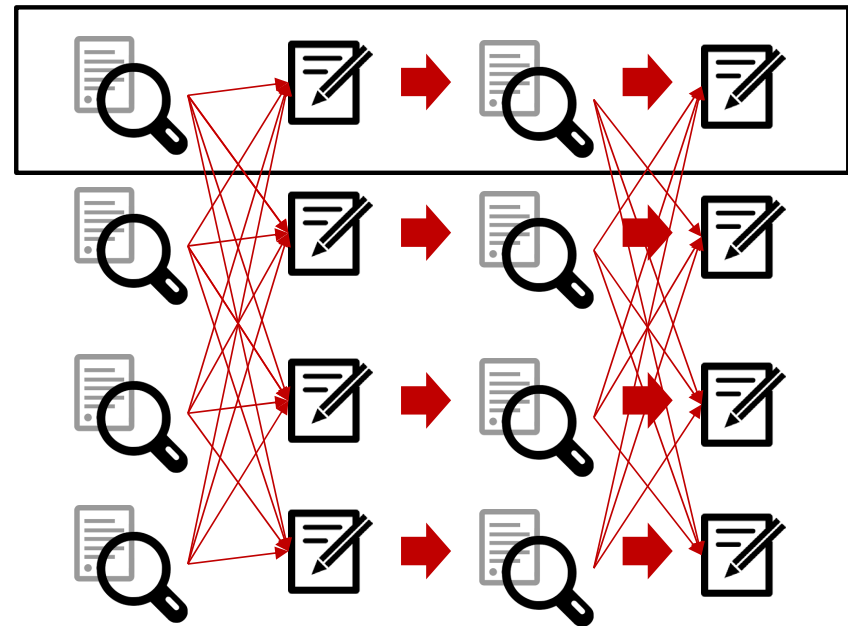
Tends to be Focused on the Seller

VIEW SBIR/STTR AS A MARKETPLACE

DATA DRIVEN MARKETPLACE



Data Driven Perspective



Focused on matching the seller to the buyer



AGENCY SELECTION

- **Seems obvious – but it's not**
- **Lot's of overlap in projects funded by various agencies**
- **Each agency takes a different perspective**
 - EX: DoD, NASA are trying to solve problems
 - EX: NIH, DoE are trying to promote research in general
 - EX: NSF is trying to promote research AND stimulate successful commercialization
- **This leads to varying levels of acceptance by different agency**
- **Where to apply can be extra challenging when considering multiple granting agencies**

SBIR AND STTR BY AGENCY

SBIR/STTR



DoD



NSF



NASA



DOE



HHS (NIH, CDC, FDA)

SBIR



DHS



USDA



EPA



DOT



ED

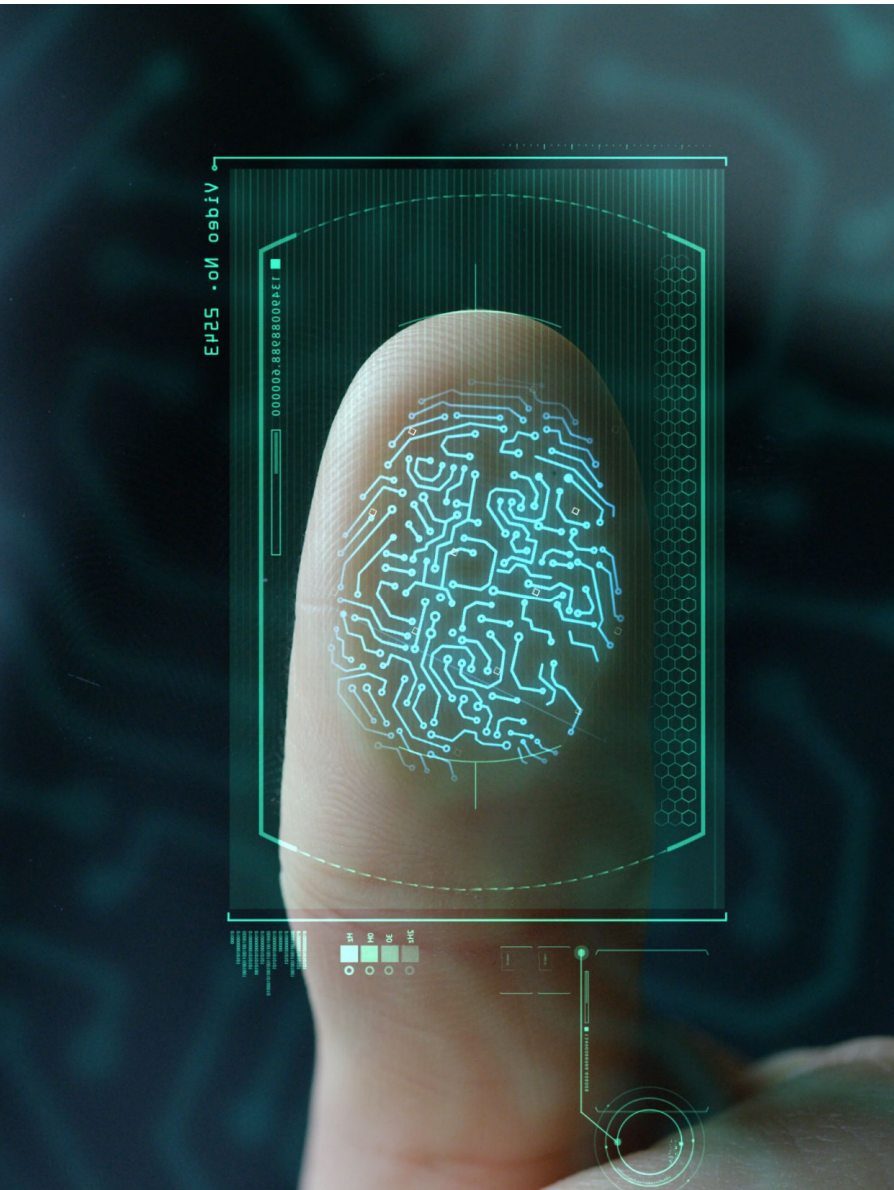


DOC (NIST, NOAA)

NSF IS THE MOST START-UP FRIENDLY



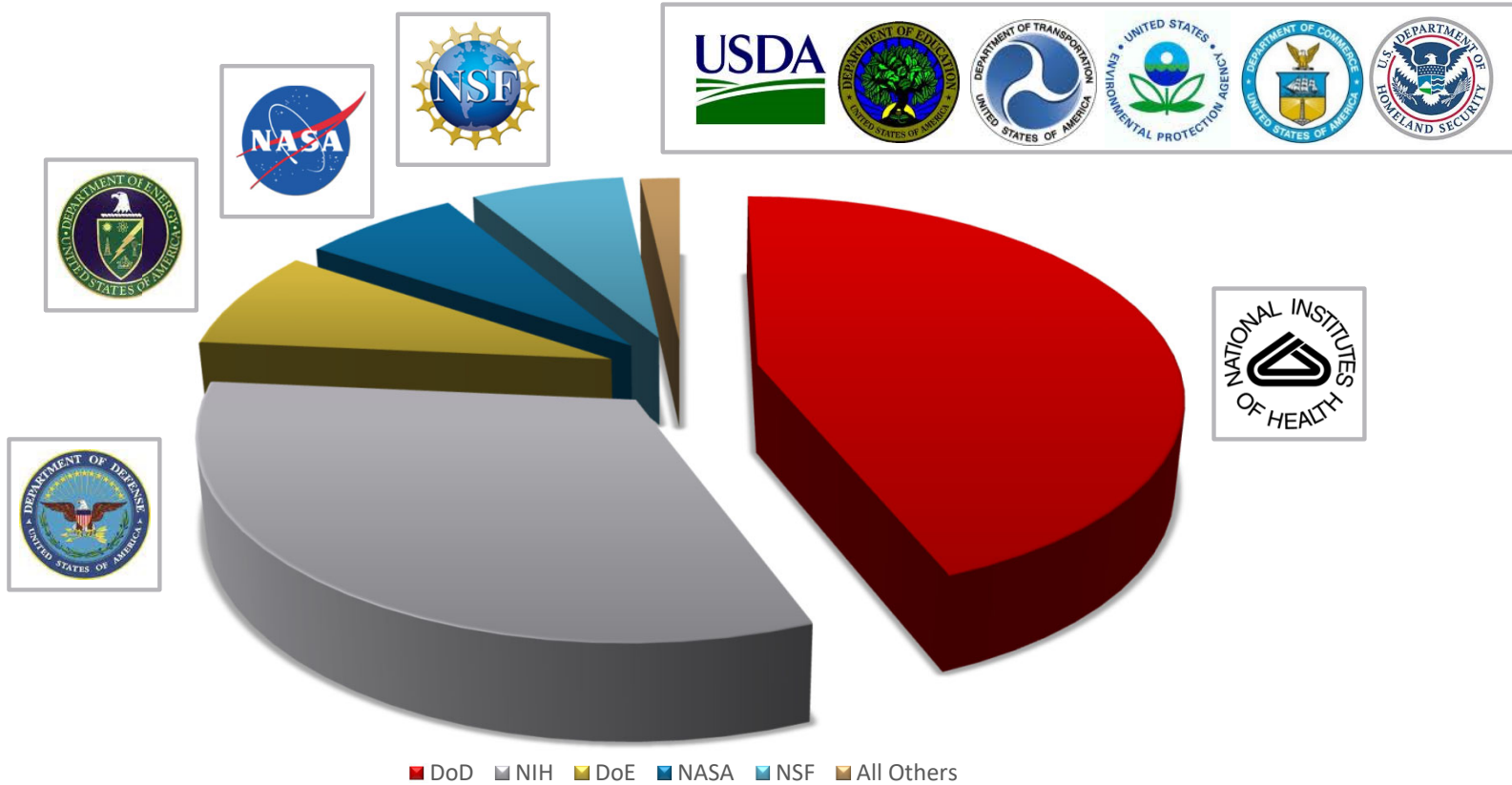
- **COMPANY SIZE:**
 - ~ 92% of awardees have 10 or fewer employees
- **HISTORY:**
 - ~ 87% of awardees had never had a prior SBIR/STTR Phase II award from any agency
- **COMPANY AGE:**
 - ~ 78% of awardee companies were incorporated within the past 5 years



EVERY AGENCY IS UNIQUE

- R&D Topic Areas
- Dollar Amount of Award (Phase I and II)
- Receipt Dates / Number and Timing of Solicitations
- Proposal Review Process
- Proposal Success Rates
- Type of Award (Contract or Grant)

GO FISHING WHERE THE FISH ARE



GO FISHING WHERE THE FISH ARE, BUT....



AVOID THE CROWDED FISHING HOLES

CASE STUDY: THE CROWDED FISHING HOLE

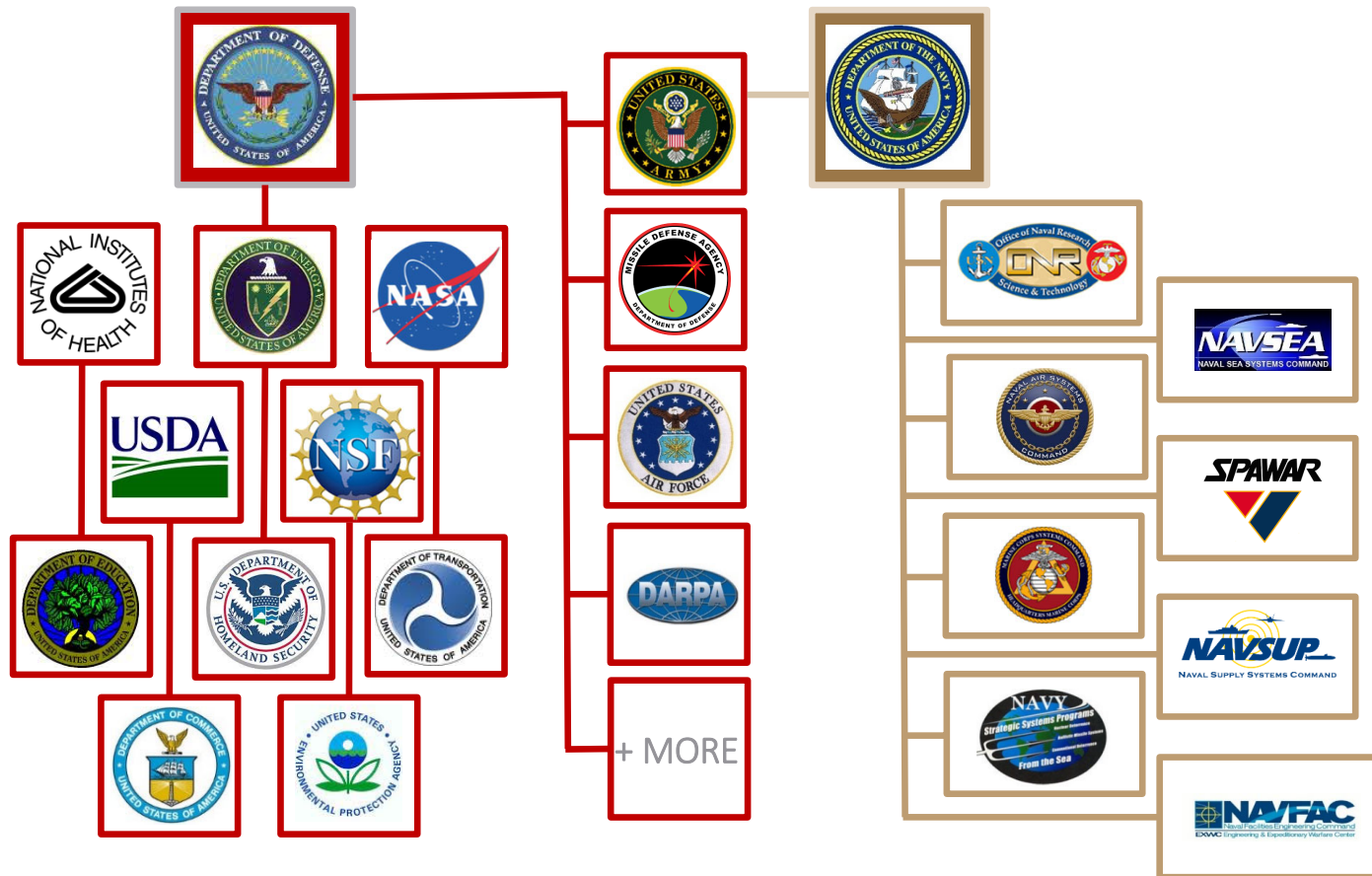


24,000+ applications for ~200 awards
= >1% probability

~800 applications for ~100 awards
= 12.5% probability



SBIR/STTR IS NOT MONOLITHIC



NARROW VS. OPEN TOPICS

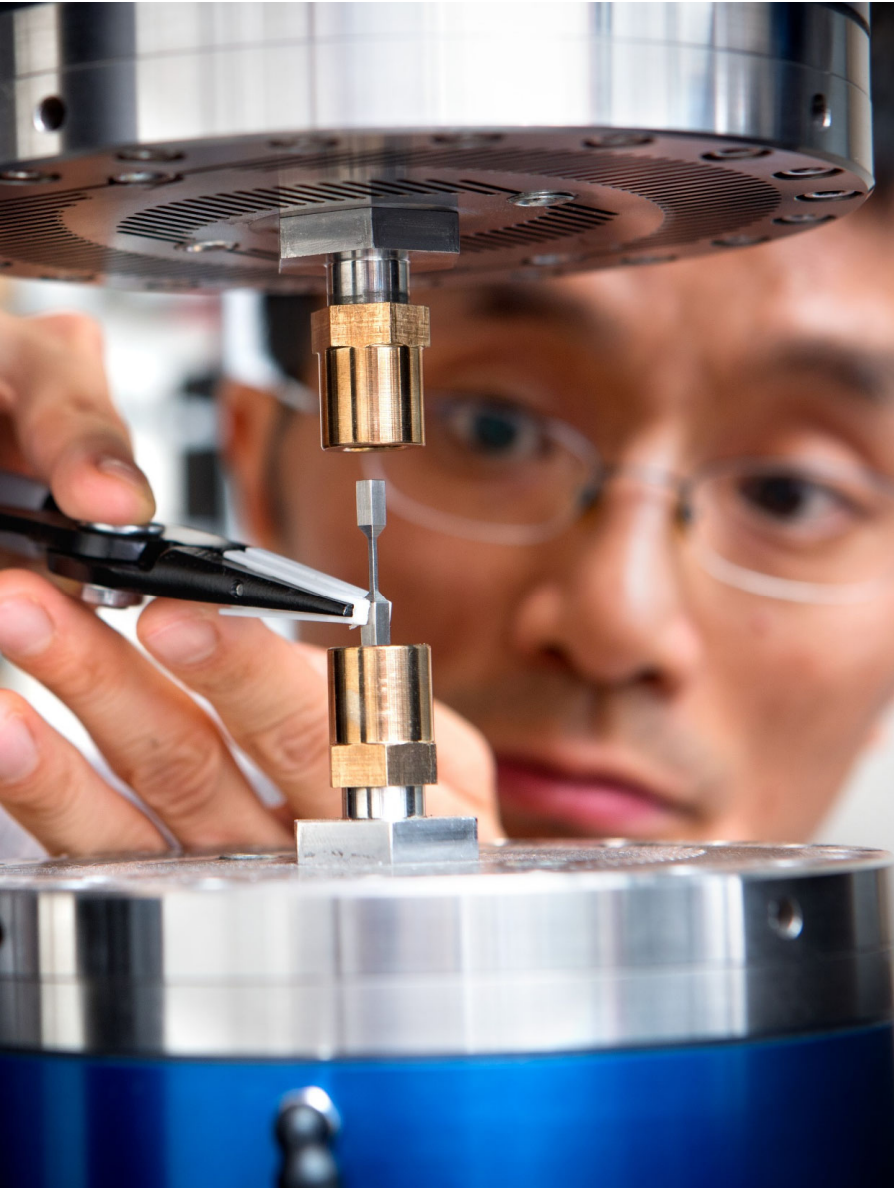


SOLICITATIONS

CONTRACTS



GRANTS



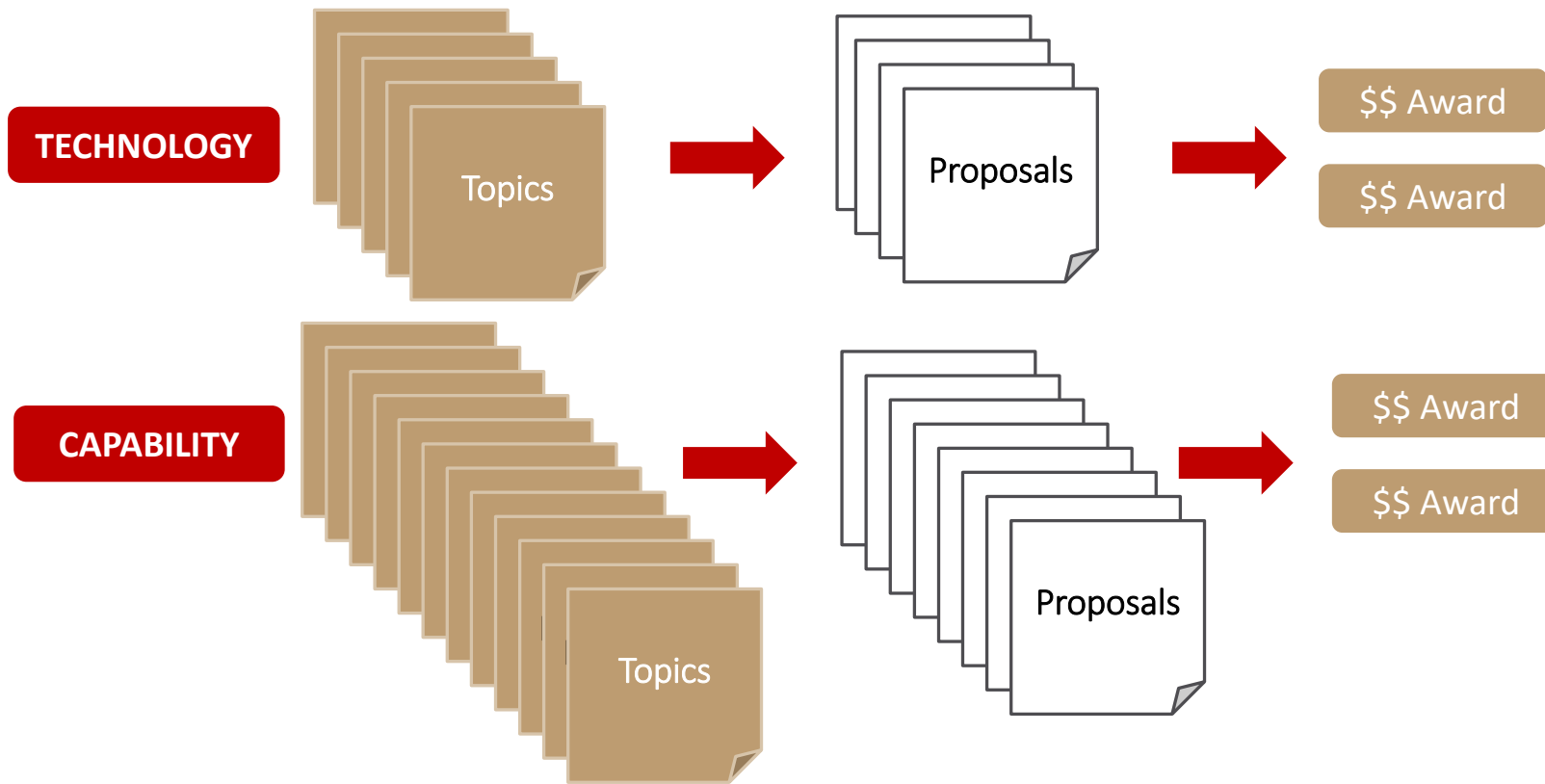
CHOOSING A TOPIC

- Call topic author (if appropriate) to learn everything
- Does it match the topic?
- Is the solution strong?
- Is it innovative? (innovation vs. evolution)
- **Is the company prepared to invest in this opportunity?**
- **How much of the work will the company do?**

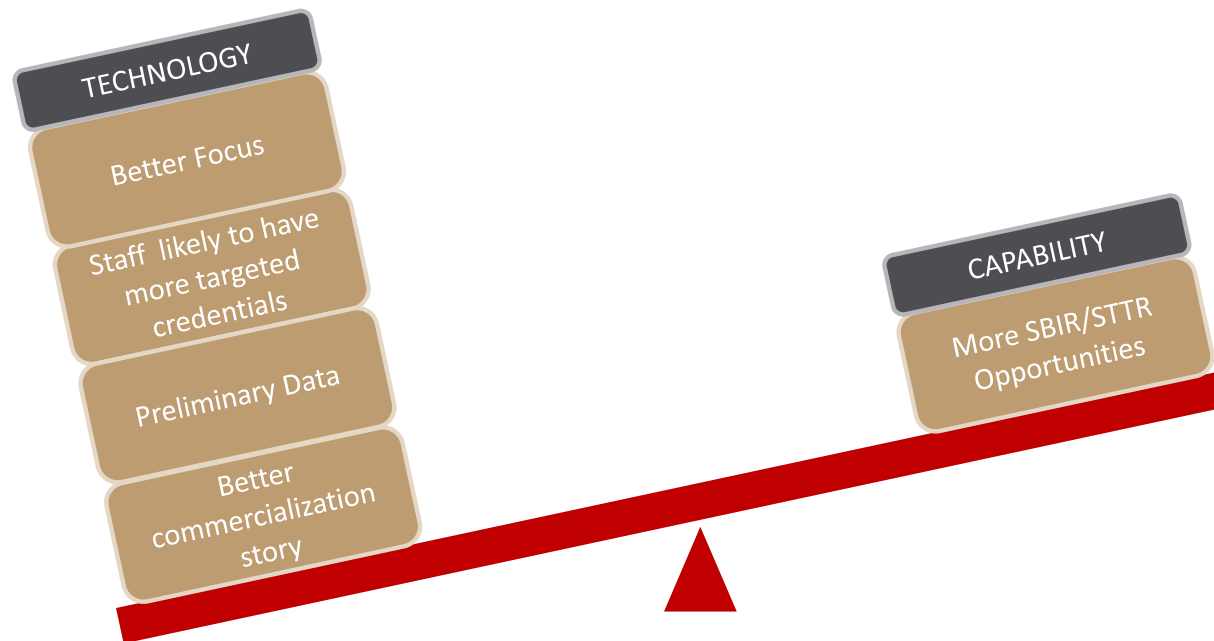
SELECTING OPPORTUNITIES IS CRITICAL

- SBIR/STTR awards aren't random drawings
- Preparing a winning SBIR/STTR proposal is a mountain of work.
- The key is to pick battles that can be won
- Choosing the right topic/agency is the most overlooked (and perhaps most important) ingredient of success

TECHNOLOGY VS. CAPABILITY APPROACH

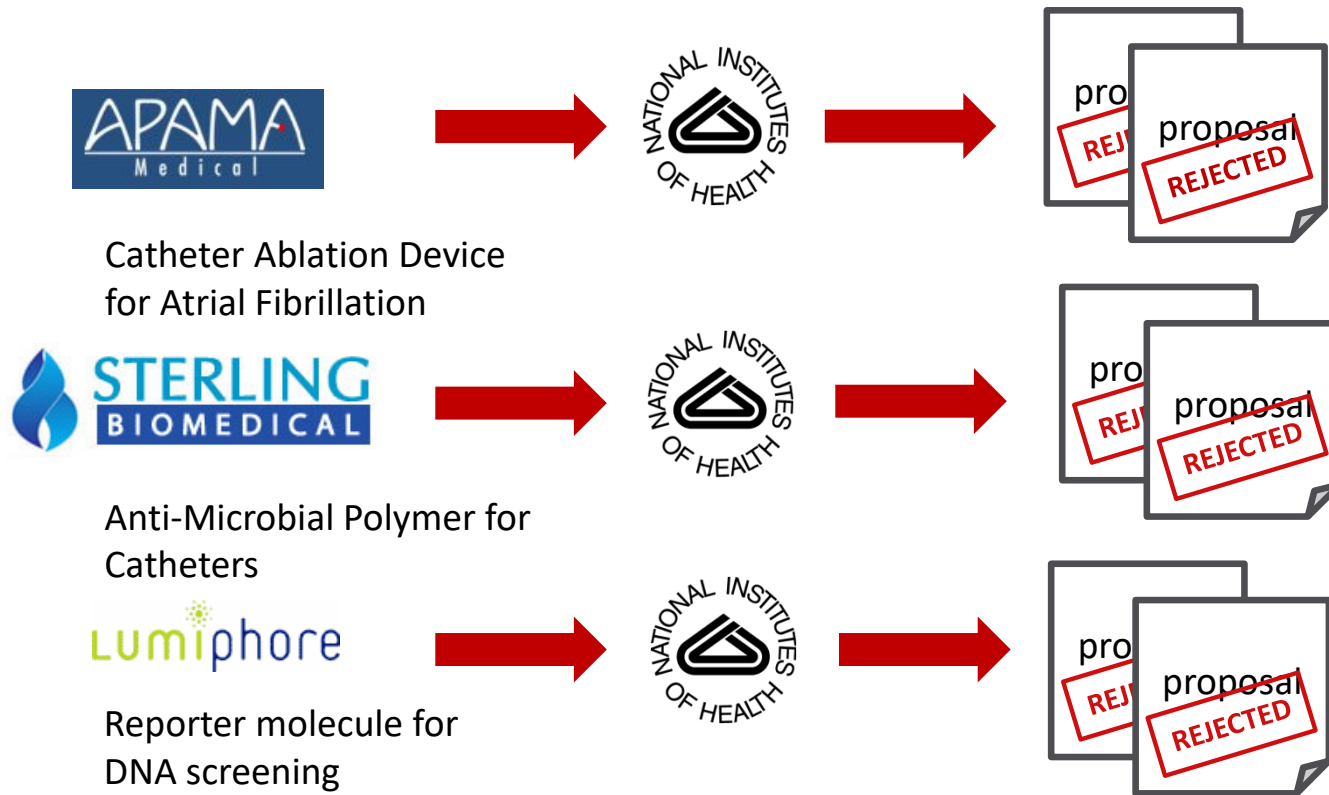


HEAD-TO-HEAD (TECHNOLOGY VS. CAPABILITY)



“Concentrate your energies, your thoughts and your capital.... The wise man puts all his eggs in one basket and watches the basket.” - Andrew Carnegie

CASE STUDIES: NIH VS. NSF



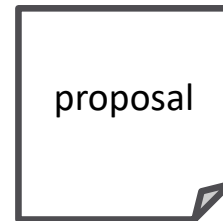
CASE STUDIES: NIH VS. NSF



Catheter Ablation Device
for Atrial Fibrillation



Anti-Microbial Polymer for
Catheters

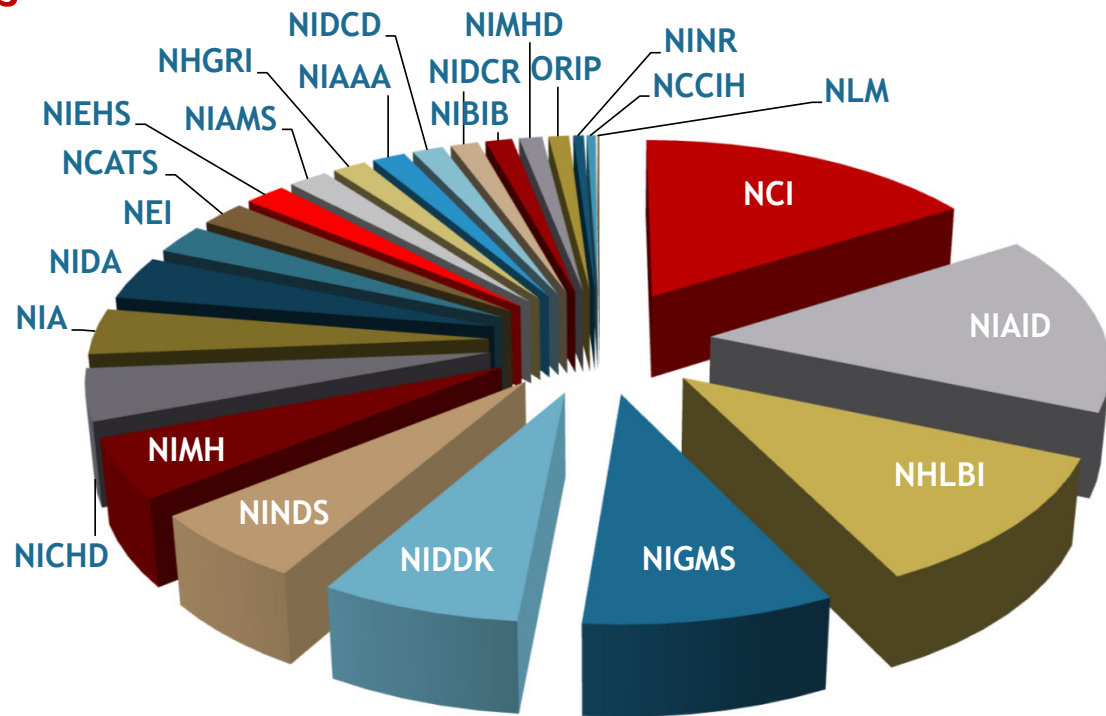


Reporter Molecule for
DNA Screening

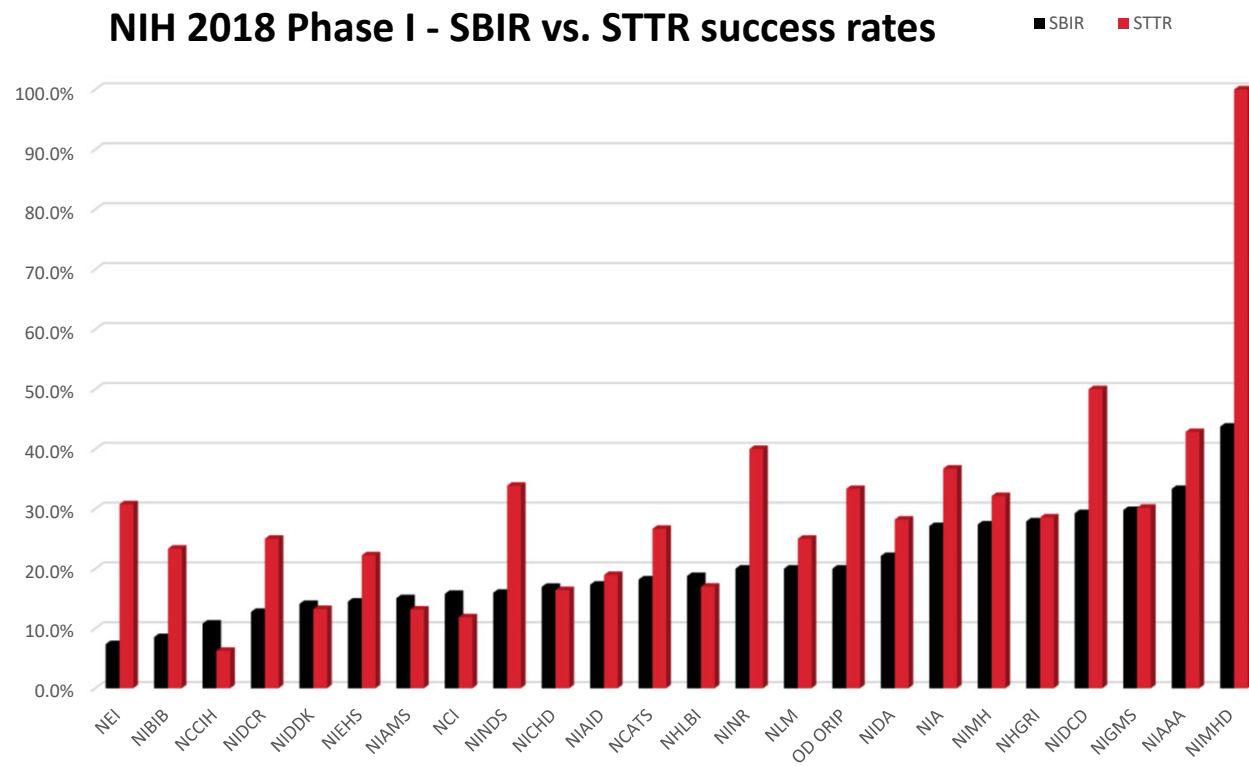


NAVIGATING NIH

SBIR/STTR Budget Allocations

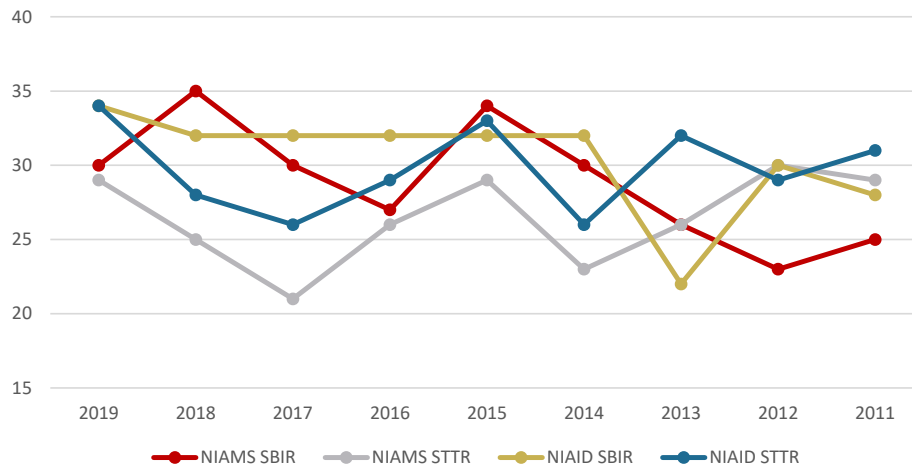


NIH PHASE I SBIR/STTR 2018



UNDERSTANDING NIH SCORING

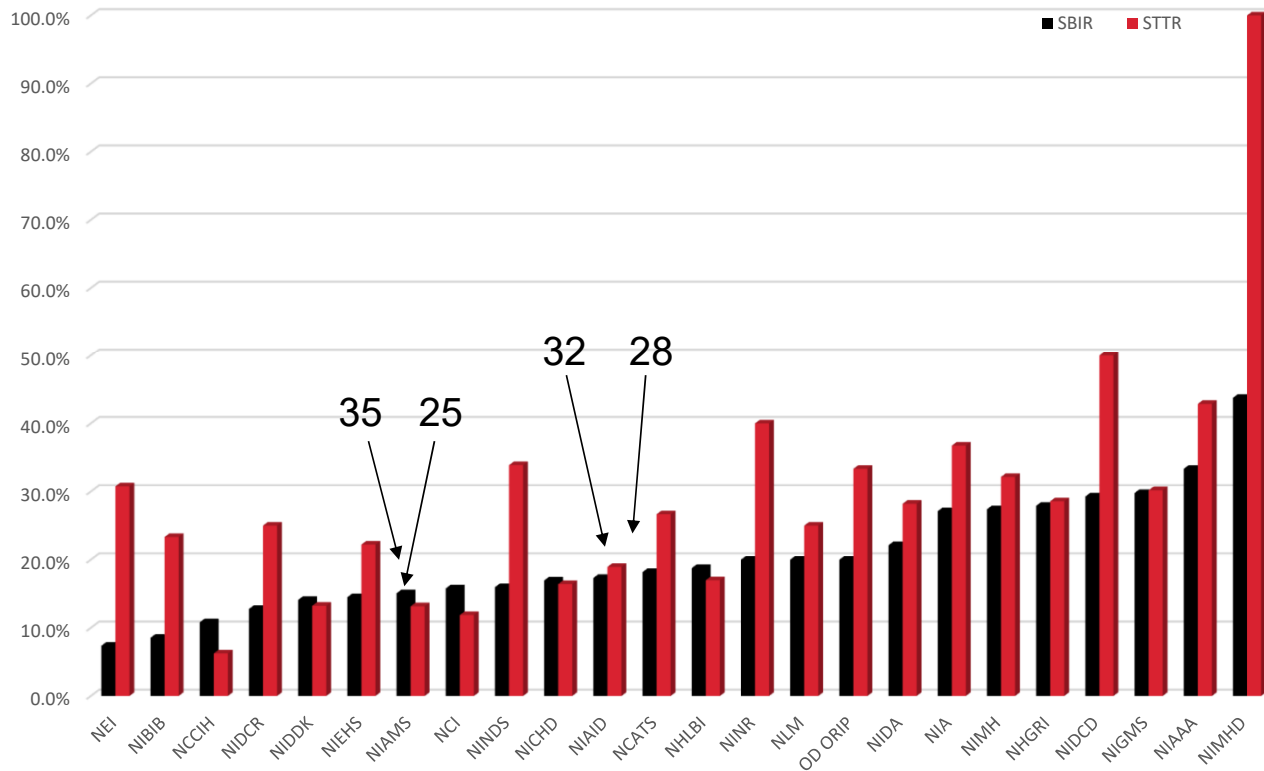
NIAID+NIAMS SBIR vs STTR Paylines



- Each sub-agency has own funding policy
- Some publish paylines (10-90, 10 is best score (most fall between 15-55))
- You can request assignment to a sub-agency (otherwise NIH will choose)
- Choosing the right sub agency can be the difference between success and failure

NIH STTR Success Rates and Paylines can fluctuate wildly

SUCCESS RATE DOES NOT EQUAL PROBABILITY





CASE STUDY: NAVIGATING NIH

- Developing an intervention targeted at reducing smoking rates
- National Cancer Institute has largest budget within NIH
- National Cancer Institute runs most smoking cessation research
- **An obvious choice, but.....**



CASE STUDY: NAVIGATING NIH

- The **WRONG** choice
- Proposal was targeted at National Institute on Drug Abuse (NIDA), and was funded...based on a score that would not have been funded at NCI
- What?! NIDA has 11th largest budget, ~1/5 of NCIs
- Need to do homework on NIH agencies
 - Understand overlap between agencies
 - Look at success rates (data available on NIH SBIR homepage)
 - Look at competitiveness of funded projects
 - Look at funding commitments



LOOKING AT SUCCESS RATES...

NIDCR	SBIR Phase I	56	17	30.4%	\$3,432,933
NIDCR	SBIR Phase II	7	4	57.1%	\$1,864,889
NIEHS	SBIR Phase I	72	22	30.6%	\$3,868,457
NIEHS	SBIR Phase II	24	12	50.0%	\$5,972,947

What matters is the future and how the past shapes it!

BEING SMARTER THAN THE NUMBERS

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Published Data is Backward looking...project forward!!!

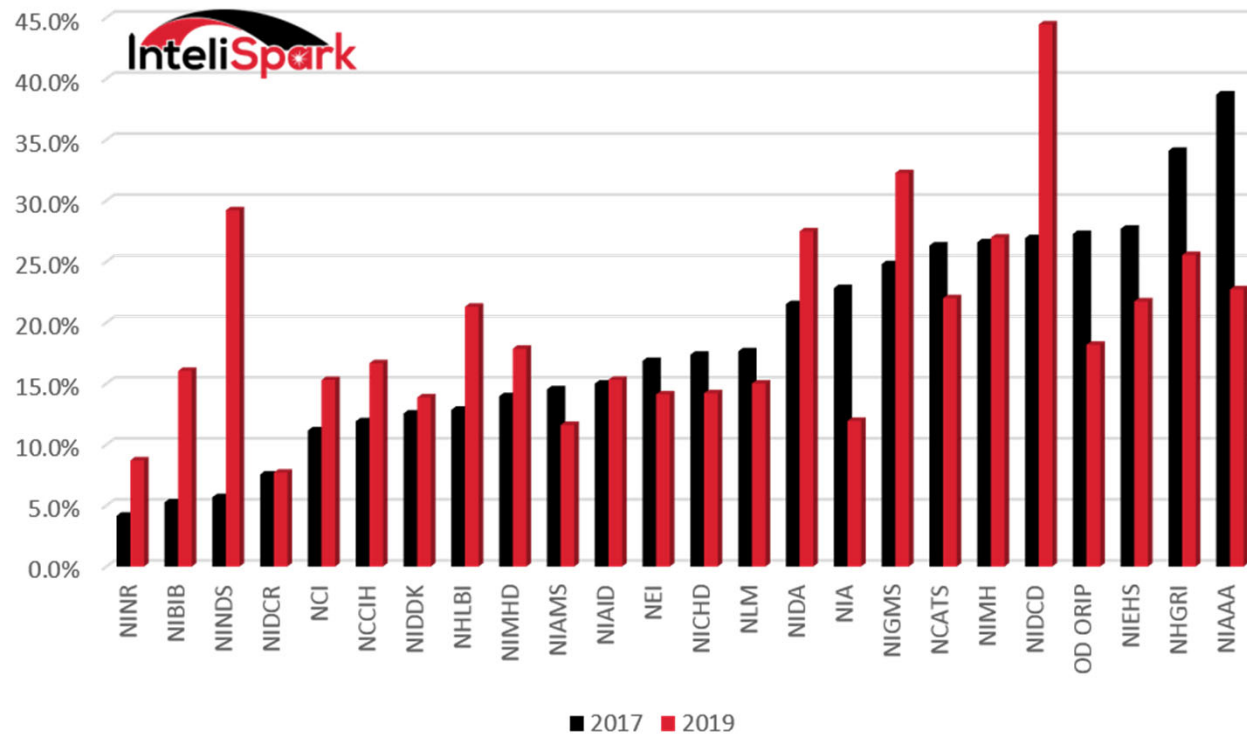
PHASE II APPLICATIONS

NIDCR > Last year 7 > Next year 17 --funding probabilities will drop

NIEHS > Last year 24 > Next Year 22 -- funding probabilities will be similar expected

LOOKING FORWARD VS. BACKWARD

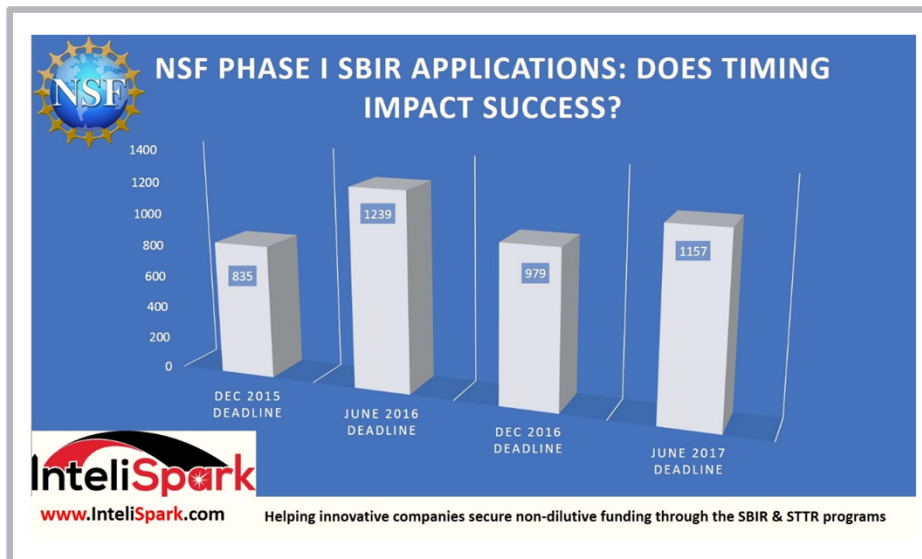
NIH 2017 vs. 2019 Phase I SBIR Success Rate



IMPACT OF SOLICITATION SCHEDULES



IMPACT OF SOLICITATION SCHEDULES

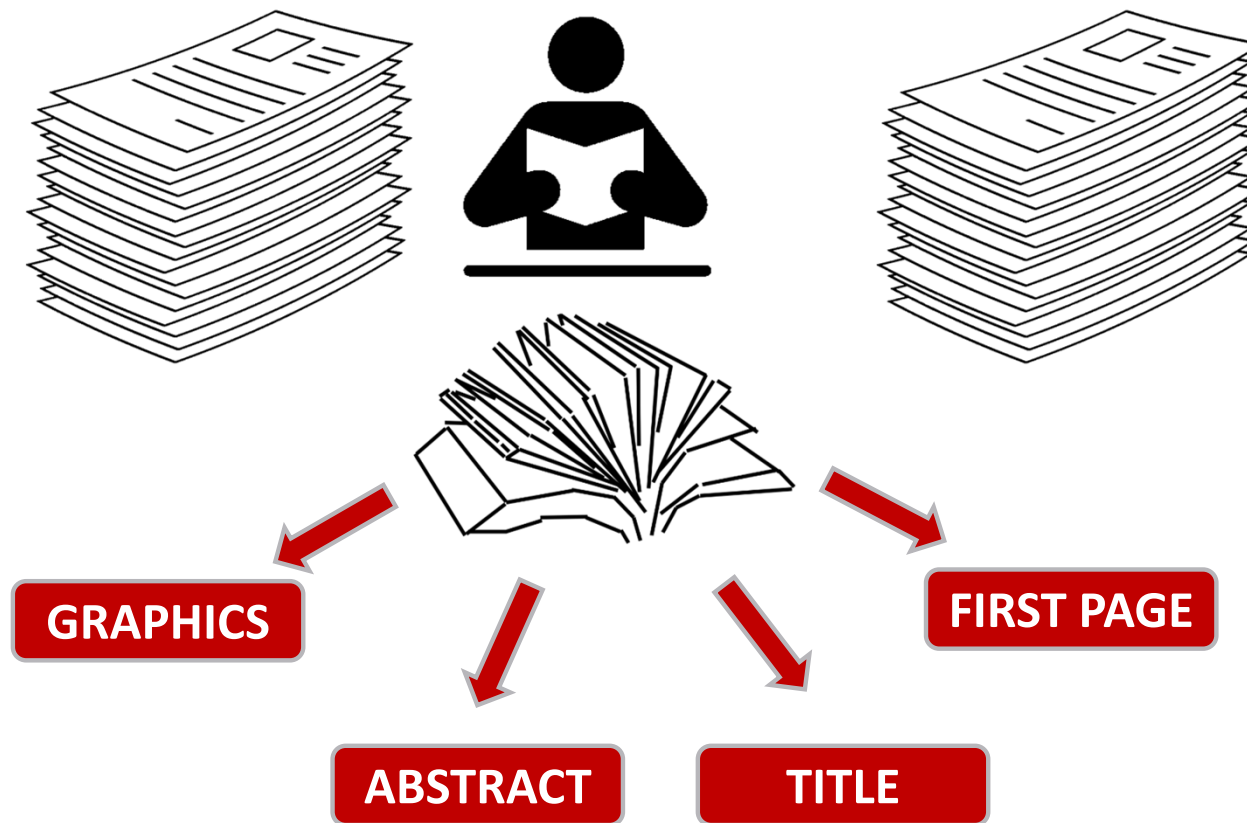


- **15.3% vs. 12.9% = 18.1 % more likely to be funded**
- **18.0% vs. 12.1% = 48.3 % more likely to be funded**



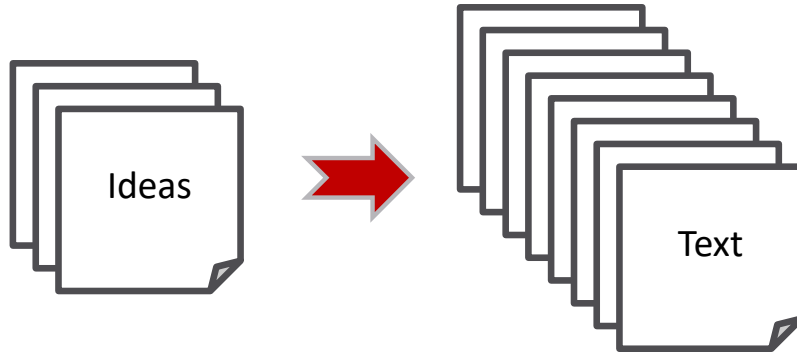
NOW WRITE | *Writing an SBIR/STTR Proposal*

UNDERSTANDING REVIEWER'S POINTS OF ENTRY

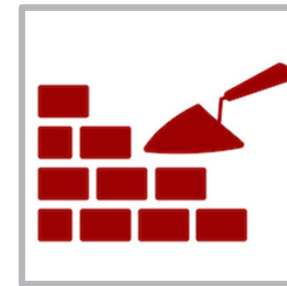


RESEARCH PROPOSAL WRITING

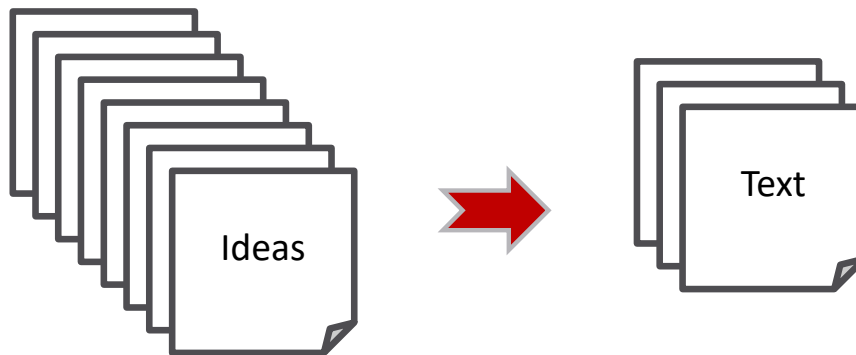
HOW YOU ARE TAUGHT TO WRITE IN SCHOOL



SLOW BUILD



EFFECTIVE RESEARCH PROPOSAL WRITING



PUNCH FIRST





HOW SHOULD I WRITE A PROPOSAL?

- A proposal is written in a similar style as a peer-reviewed journal article...
- ...**BUT is NOT an academic exploration** – it needs concrete goals, objectives, and measures of success
- Write concisely
- Use visuals to convey big ideas
 - Mock-up interfaces to software
- Cite your peers (especially if they might be reviewers)
 - Show you understand the field
- Avoid sloppy mistakes

EVEN SMART PEOPLE ARE BAD WITH NUMBERS

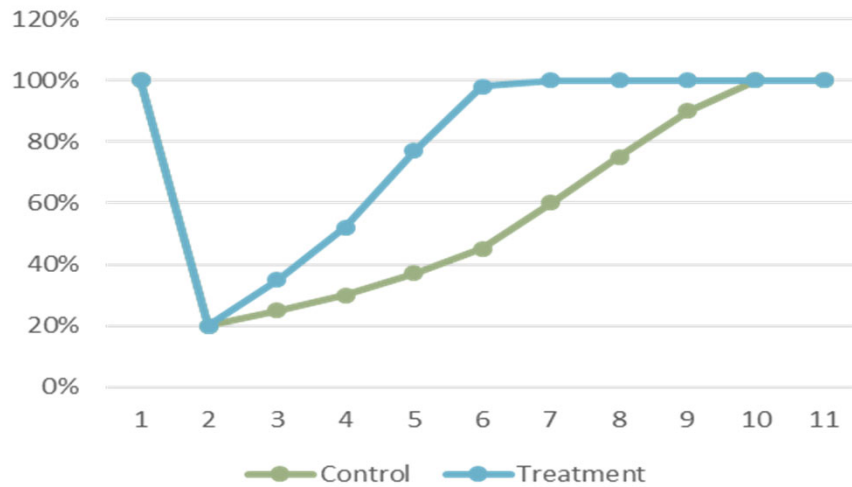
20/100 or 20% or 0.2 or 1/5

A telling example of innumeracy levels in society involves a study of clinicians (who represent a sample with education levels representative of reviewers) who were asked to consider the release of a psychiatric patient. When told that that 20 of 100 similar patients could be expected to commit an act of violence if released, 41% refused to discharge the patient. However, when instead told that 20% of similar patients could be expected to commit an act of violence if released, only 21% refused to discharge the patient.

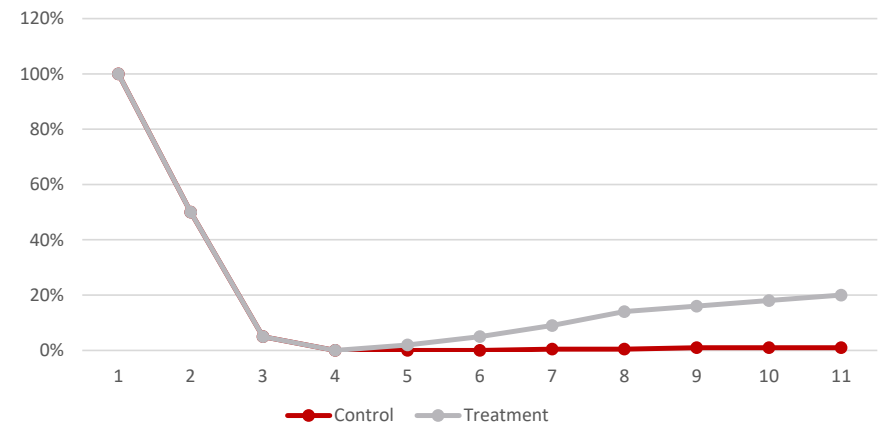
Slovic, P., J. Monahan, and D.G. MacGregor, *Violence risk assessment and risk communication: the effects of using actual cases, providing instruction, and employing probability versus frequency formats*. *Law Hum Behav*, 2000. 24(3): p. 271-96.

CHARTS NEED TO TELL A STORY

FUNCTIONAL ABILITY

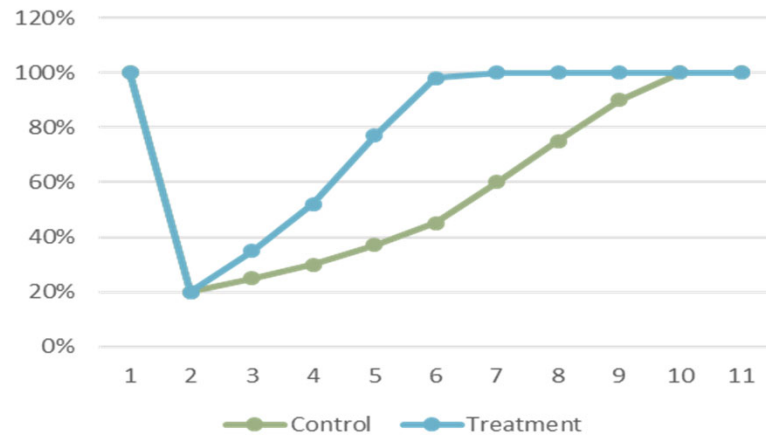


FUNCTIONAL ABILITY

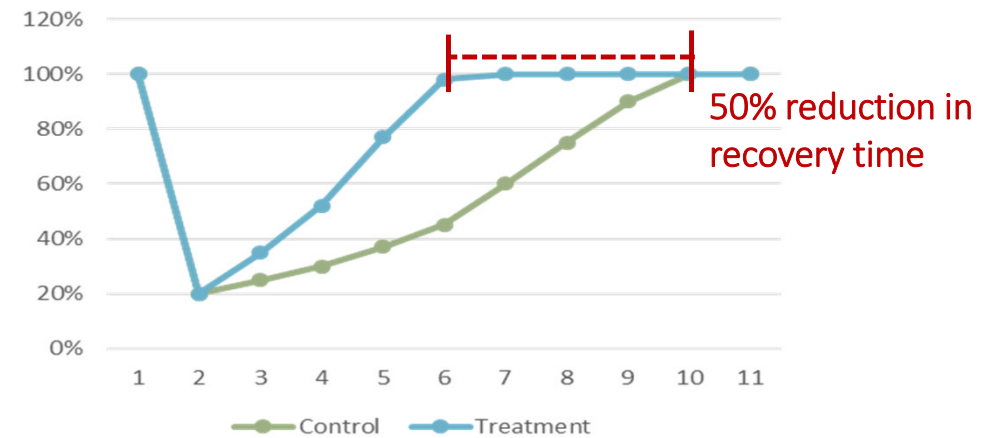


CONTROL THE NARRATIVE

FUNCTIONAL ABILITY

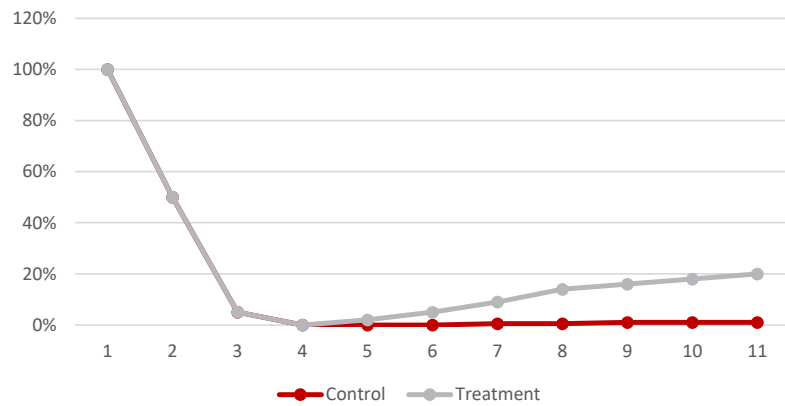


FUNCTIONAL ABILITY

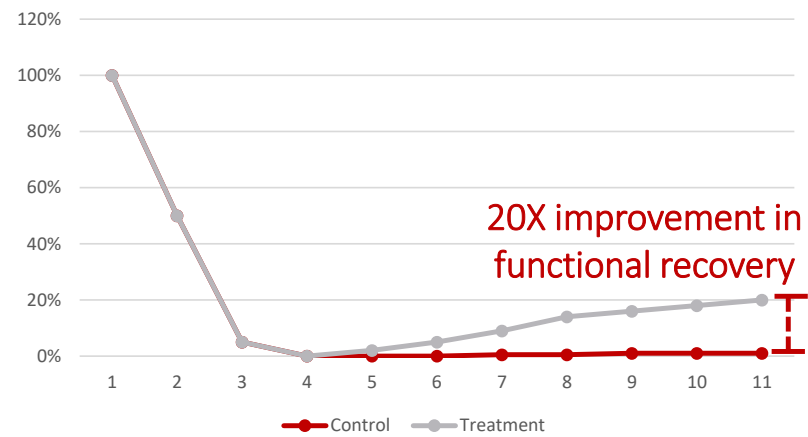


CONTROL THE NARRATIVE

FUNCTIONAL ABILITY



FUNCTIONAL ABILITY





PHASE II IS EVERYTHING | *Winning a Phase I makes your mom proud of you, Winning a Phase II changes the value of your company*



KEYS TO SUCCESSFUL PHASE II

- **STARTS WITH A GOOD PHASE I**
- **HAVE A PHASE I DESIGNED TO CHANGE THE NARRATIVE AND PRODUCE INTERESTING DATA**
(which may change the order in which you do things)
- **EVERYTHING YOU DO IN PHASE I IS ABOUT WINNING PHASE II!!!**
 - Adjust plans as required
 - Create data that supports Phase II proposal
 - Understand tradeoff between submission time and success rate
- **TWO BIGGEST GAME CHANGERS**
 - Raise money during Phase I
 - Move from talk to action with 3rd Parties (i.e. secure pilot customers/users during Phase I)

IMPORTANCE OF COMMERCIALIZATION



COMMERCIALIZATION PLANS

Better technology is not a commercialization plan





TECHNOLOGY PUSH

- Define why the technology creates a new product category
- Make the case the customers need what they don't know the need
- Only works with truly transformative disruptive technologies

“If I had asked people what they wanted, they would have said faster horses” - Henry Ford



DOING IT RIGHT | *Ensure your SBIR/STTR effort adds value to your start-up. SBIR is a means not an end!*

WHY ARE YOU INTERESTED IN SBIR FUNDING?



YOU ARE A TOAD...AND YOU HAVE WARTS!

- Too risky
- Too early
- Unproven Team
- Unproven Market
- Unproven Technology
- Limited or no resources

YOU ARE A TOAD WITH WARTS, NOT A FROG PRINCE



*SBIR/STTR can help you remove enough warts
so Investors, Partners, & Customers will Shake your hand!*

YOU ARE A TOAD WITH WARTS, NOT A FROG PRINCE



+



=



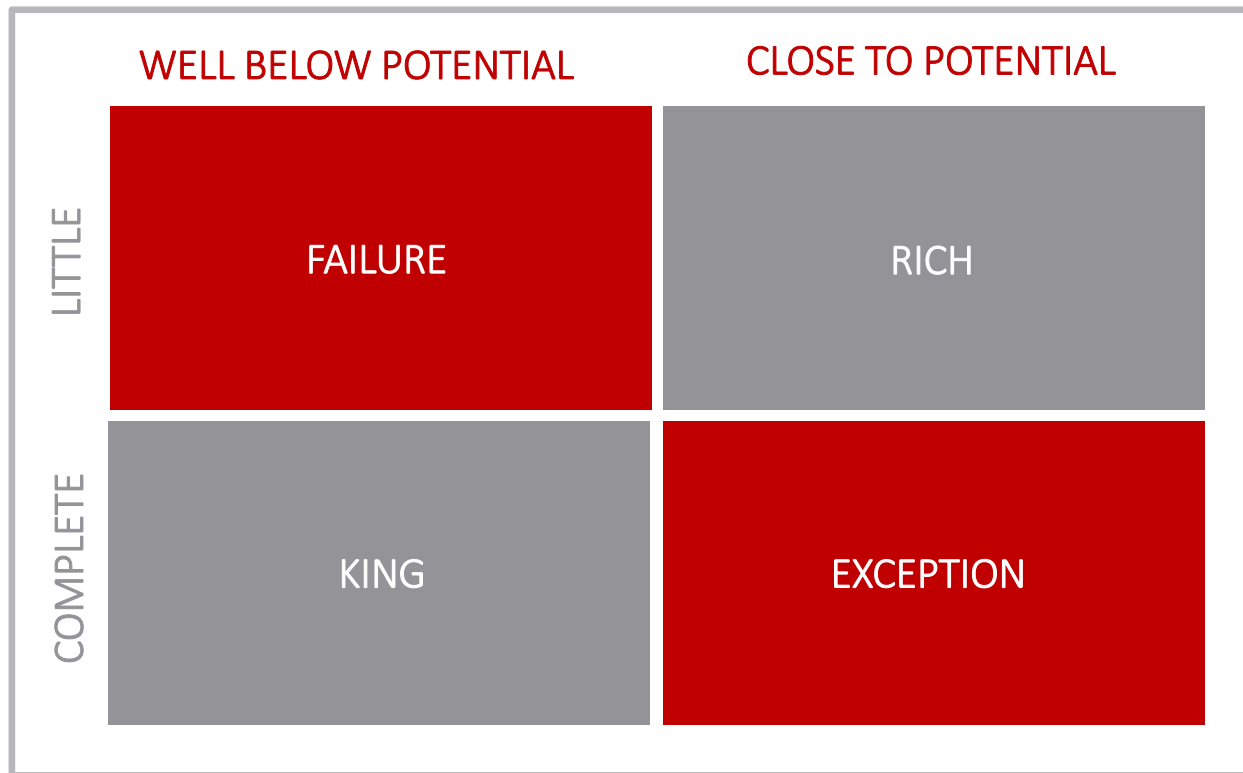
- Too risky
- Too early
- Unproven Team
- Unproven Market
- Unproven Technology
- Limited or no resources

- Remove risk
- Advance technology
- Develop applications for technology
- 3rd party validation

- Investors
- Partners
- Customers
- Future Employees

FOUNDER DILEMMA

FINANCIAL GAINS



FAMOUS SBIR COMPANIES



QUALCOMM®

Market Cap: \$100B



Symantec™

Market Cap: \$15.64B



INTUITIVE
SURGICAL®

Market Cap: \$25.44B



iRobot®

Market Cap: \$1.5B

*None received more than \$9 million in SBIR/STTR funding
Total combined funding less than \$20 million*

SUCCESSFUL COMPANY COMMON THEME

Boston
Scientific



APAMA
MEDICAL

facebook



GROKSTYLE

Google



TaggPic

السعودية
Saudi Aramco



NOVOMER

Agilent Technologies



A₂ TECHNOLOGIES

Microsoft



INTERACTIVE
supercomputing

IEH



sample6

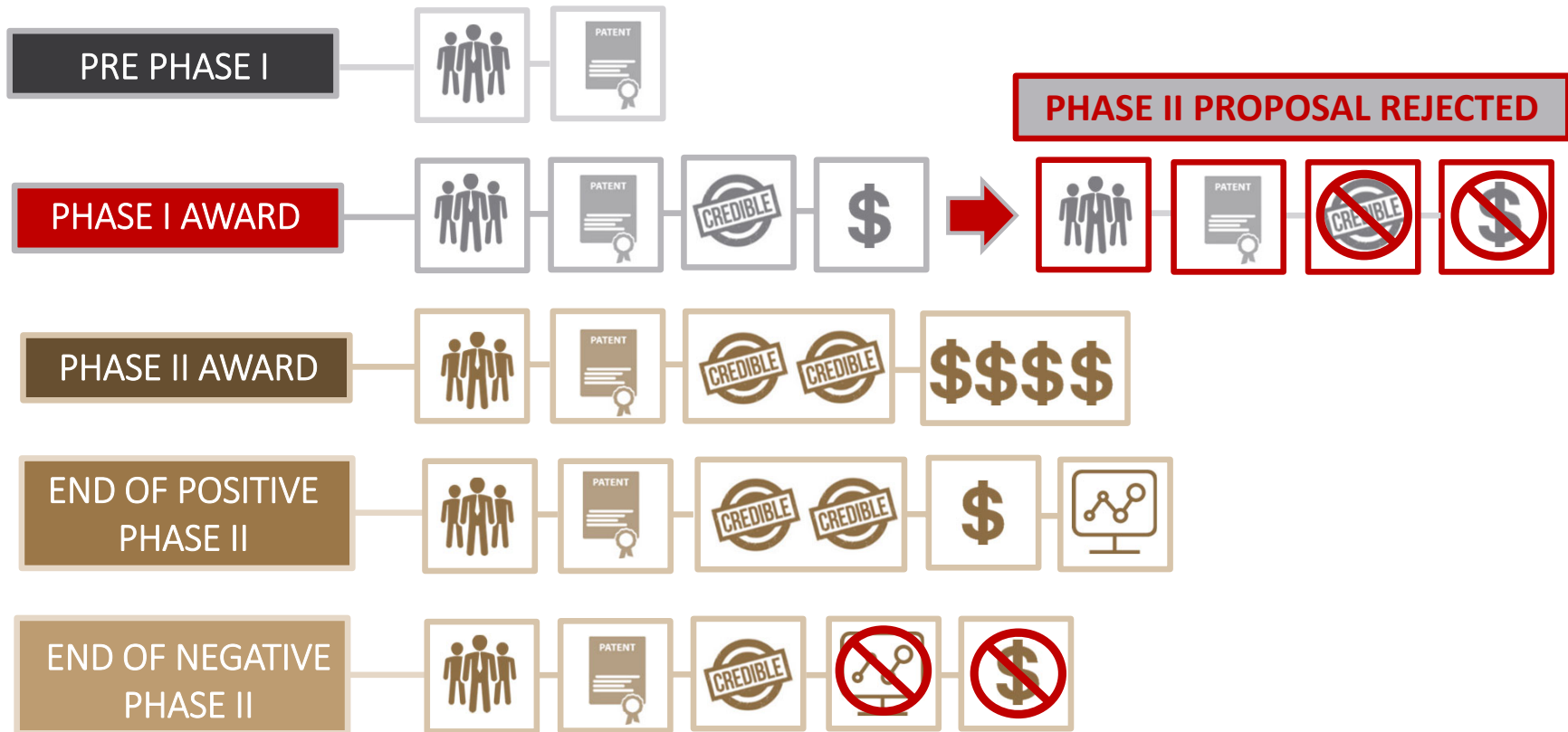
SBIR • STTR

America's Seed Fund



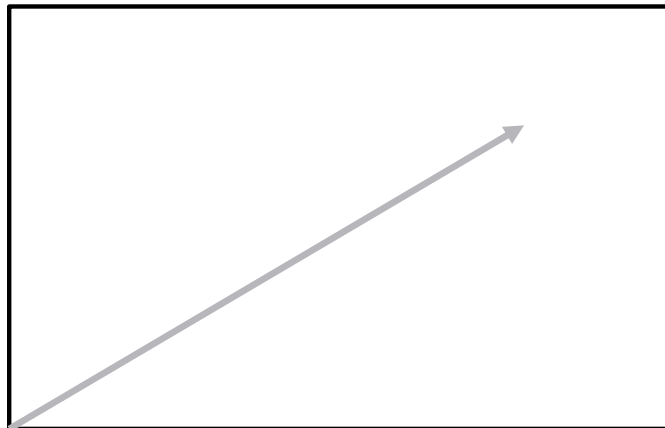
VENTURE CAPITOL

RAISE MONEY FROM POSITION OF STRENGTH

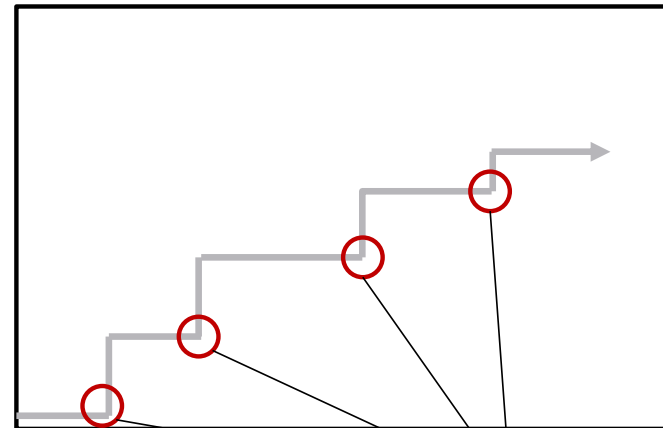


UNDERSTAND THE STEP FUNCTIONS

RARE



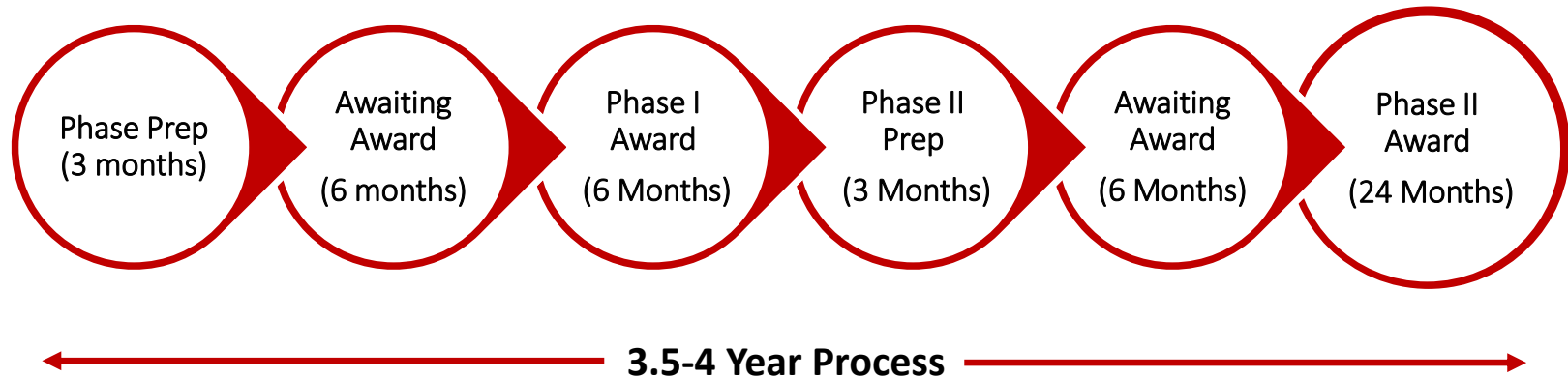
TYPICAL



Infection points

You need to understand the inflection points that change the perspective of investors, customers, and partners...and build your SBIR/STTR around them

UNDERSTAND THE TIMING



OTHER ISSUES



- **Government Data Rights**
- **Government Accounting Rules**
- **Reporting Requirements**
- **Cashflow Issues (most awards work on reimbursement basis)**
- **SBIR/STTR funding is sloooooooooooooow!!!**
- **Relying Solely on Government Grants is a Bad Strategy**



THE END | *Questions*
