

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



Kirk J. Macolini

President

Intelispark, LLC

www.Intelispark.com

Kirk@Intelispark.com

(607) 277-1570



INTRODUCTION: OR WHY YOU
SHOULD LISTEN



Non-Dilutive Funding Experience



~400 proposals (90%+ SBIR/STTR)
selected for award



>\$170,000,000 in projects selected
for award



28 start-up clients funded in 2018



24 start-up clients funded in first
half of 2019



Clients have had **>\$500,000,000** in
successful exits

IntelisSpark clients are 5% of NSF's SBIR
cohort from 2018 Phase I proposals.

- IntelisSpark clients 13/26 (50%)
- Everyone else 257/2072 (12.4%)



Alterna Therapeutics



Excelsior biofilms LLC



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THE START: AGENDA



What you will learn

- **Improve your Phase I proposal success rate**
- **Enhance your chances of transitioning from Phase I to Phase II**
- **Ensure your SBIR/STTR award adds value to your start-up**

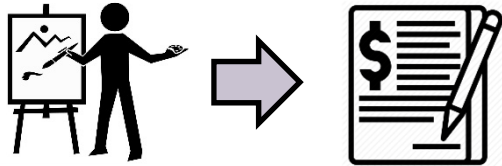


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SBIR BASICS: IMPROVE YOUR PHASE I PROPOSAL SUCCESS RATE

View SBIR/STTR as a marketplace

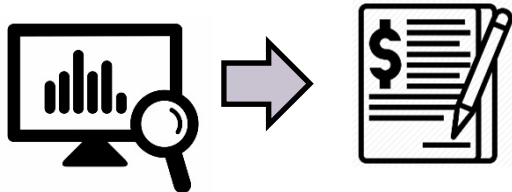
“Art” of Grant Writing



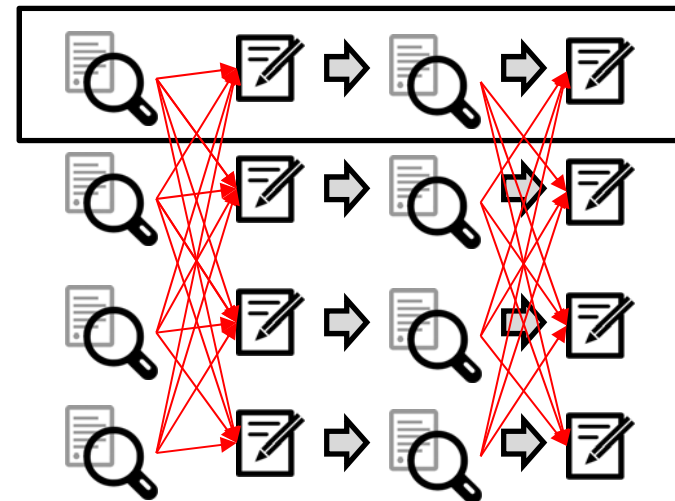
Investigator Driven Perspective

Tends to be Focused on the Seller

Data Driven Marketplace



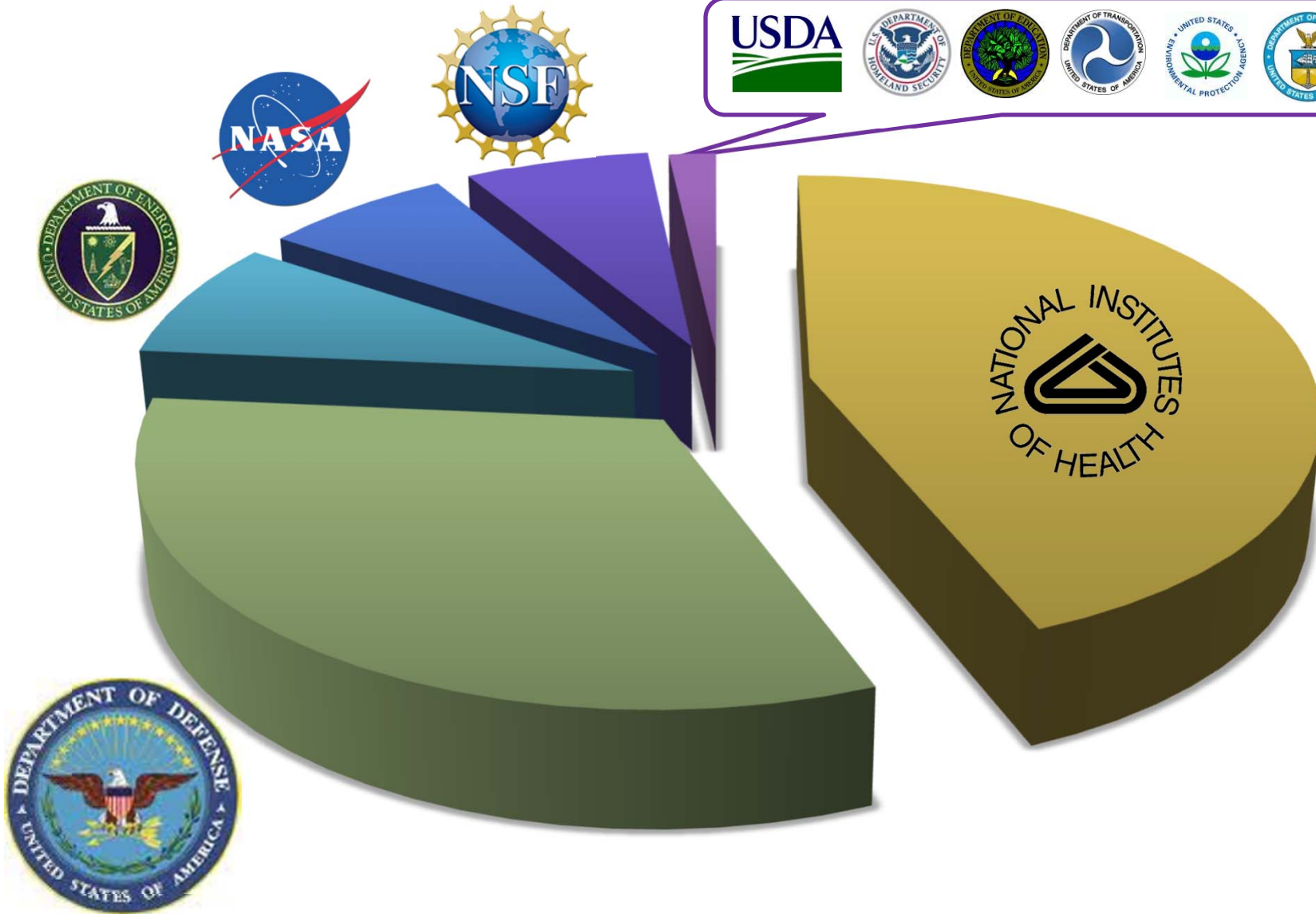
Data Driven Perspective



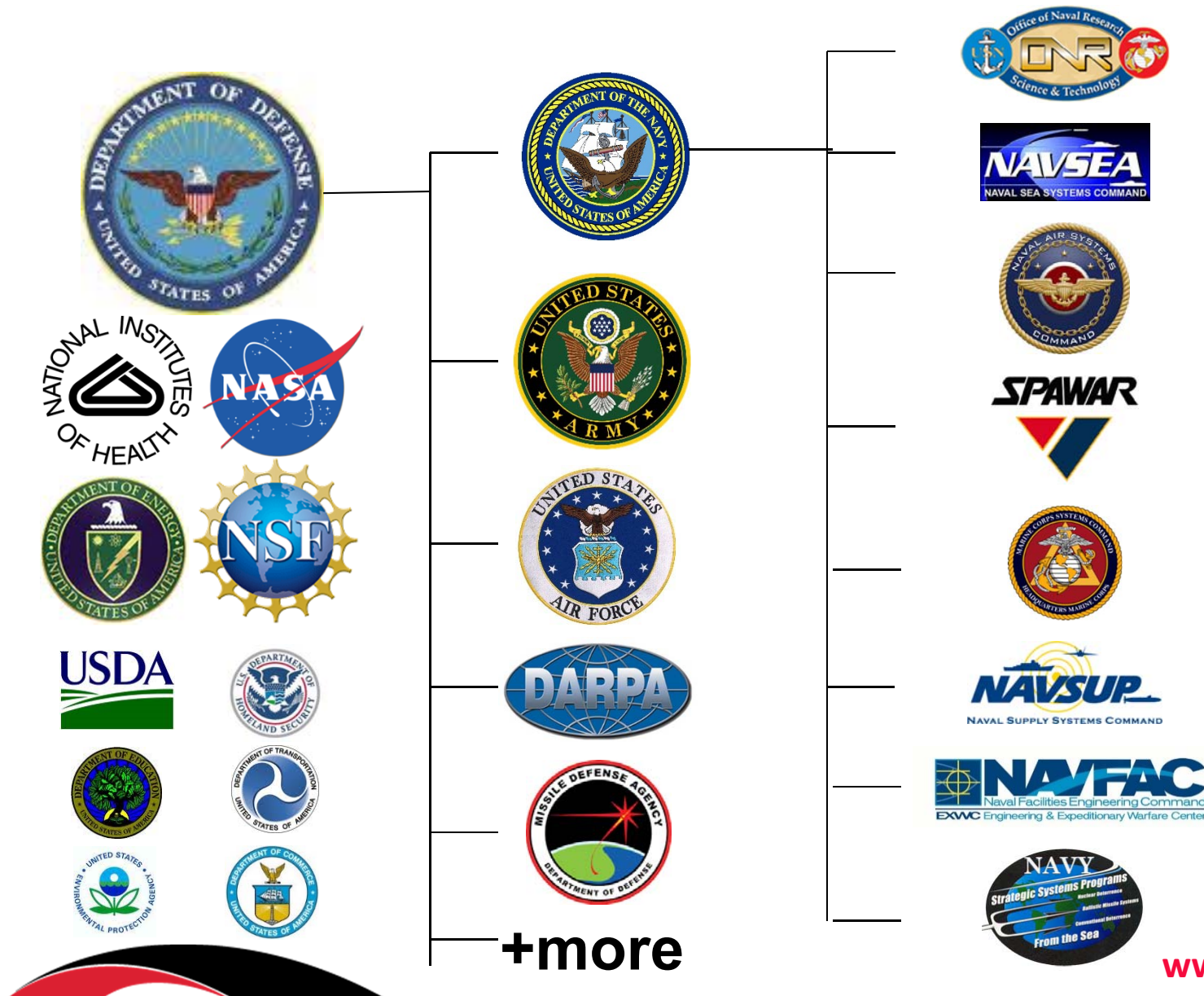
**Focused on matching the seller
to the buyer**



Understand the agency/funding levels



SBIR/STTR is not monolithic

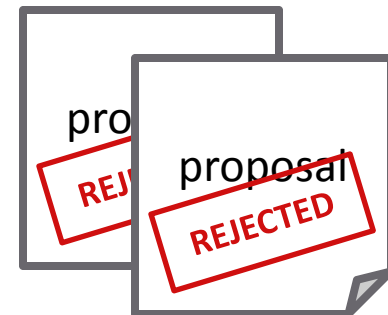


Every Agency/Subagency is Unique

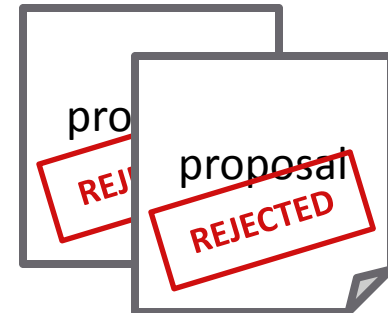
- R&D Topic Areas
- Dollar Amount of Award (Phase I and II)
- Receipt Dates / Number and Timing of Solicitations
- Proposal Review Process
- Proposal Success Rates
- Type of Award (Contract or Grant)
- Types of projects they fund



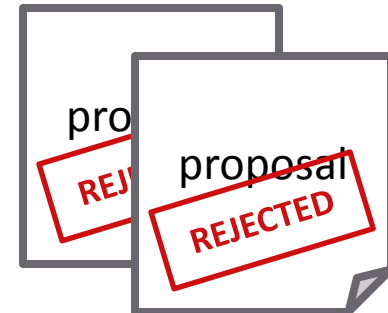
CASE STUDIES: NIH vs. NSF



Catheter Ablation Device
for Atrial Fibrillation



Anti-Microbial Polymer for
Catheters



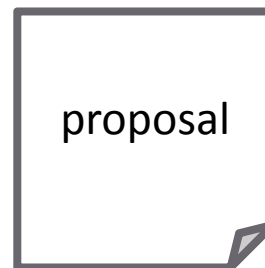
Reporter molecule for
DNA screening



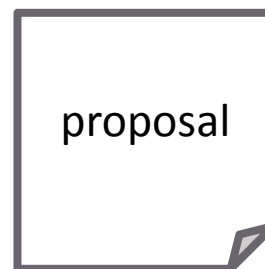
CASE STUDIES: NIH vs. NSF



Catheter Ablation Device
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Reporter Molecule for
DNA Screening



CASE STUDIES: NIH vs. NSF

- On the surface all proposals were ideal for NIH
- NIH has a far larger budget compared to NSF
- So why were proposals soundly rejected by NIH, but funded by NSF?
 - Projects were all development projects (NIH tends to be more clinical/evaluation focused, NSF tends to be more engineering focused)
 - Strong commercial stories are important at NSF, NIH barely cares
- Take away message – **do your homework!**
 - Talk to program managers
 - Study previous awards abstracts to see what the agency funds
 - Look at websites of previous winners



Understanding funding profiles & Reviewers

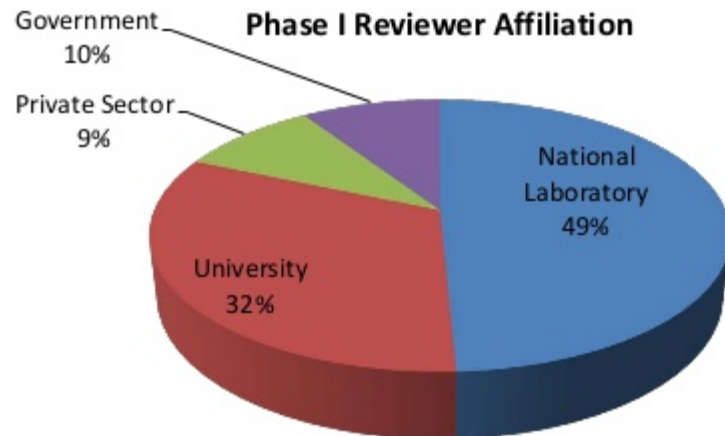


2016: **99/286** Phase I awards went to companies with multiple Phase I DoE awards in 2016



2016: **4/250** Phase I awards went to companies with multiple Phase I NSF awards in 2016

Technical Reviewer Affiliation

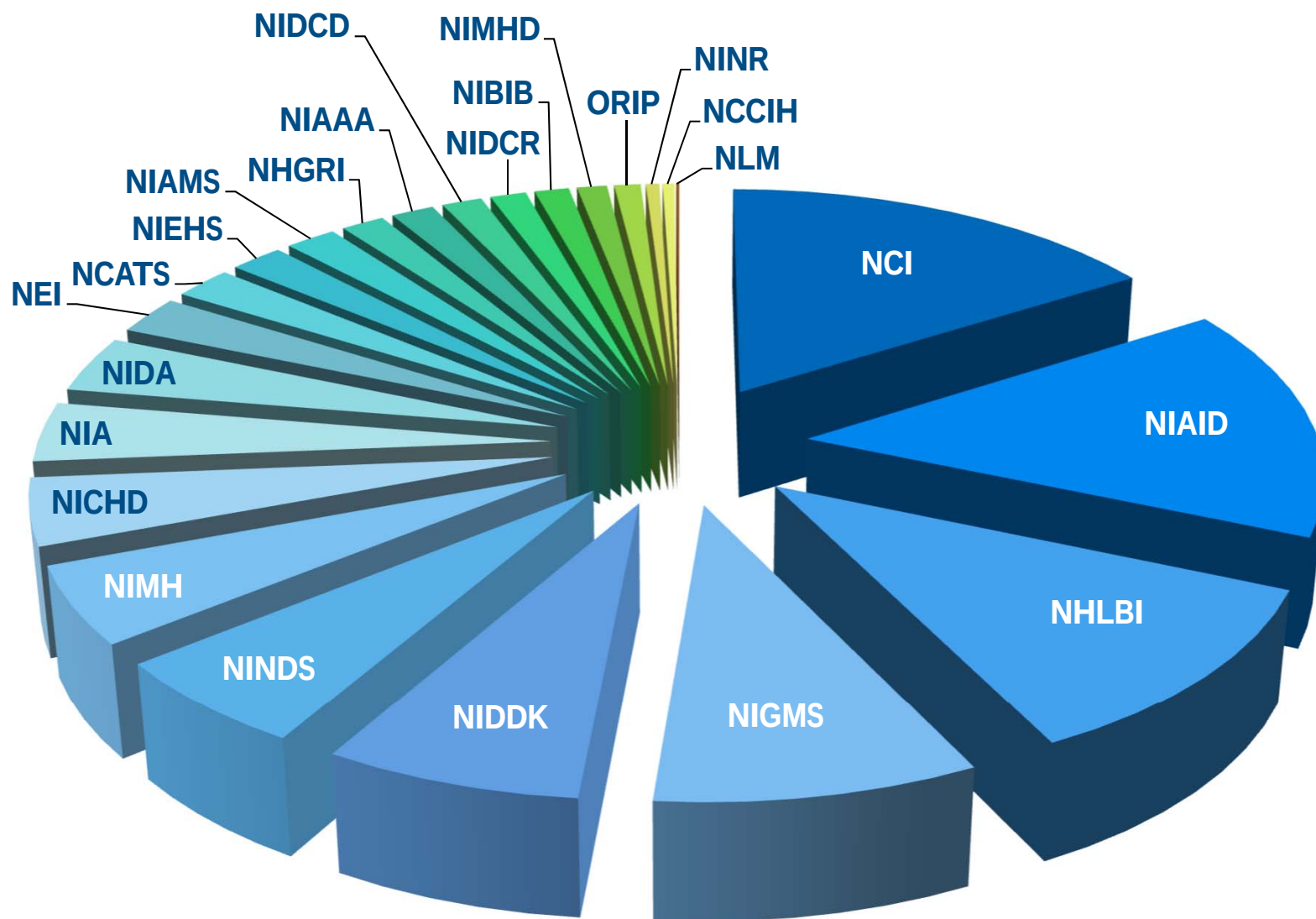


NSF is Most Start-up Friendly

- **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

Navigating NIH

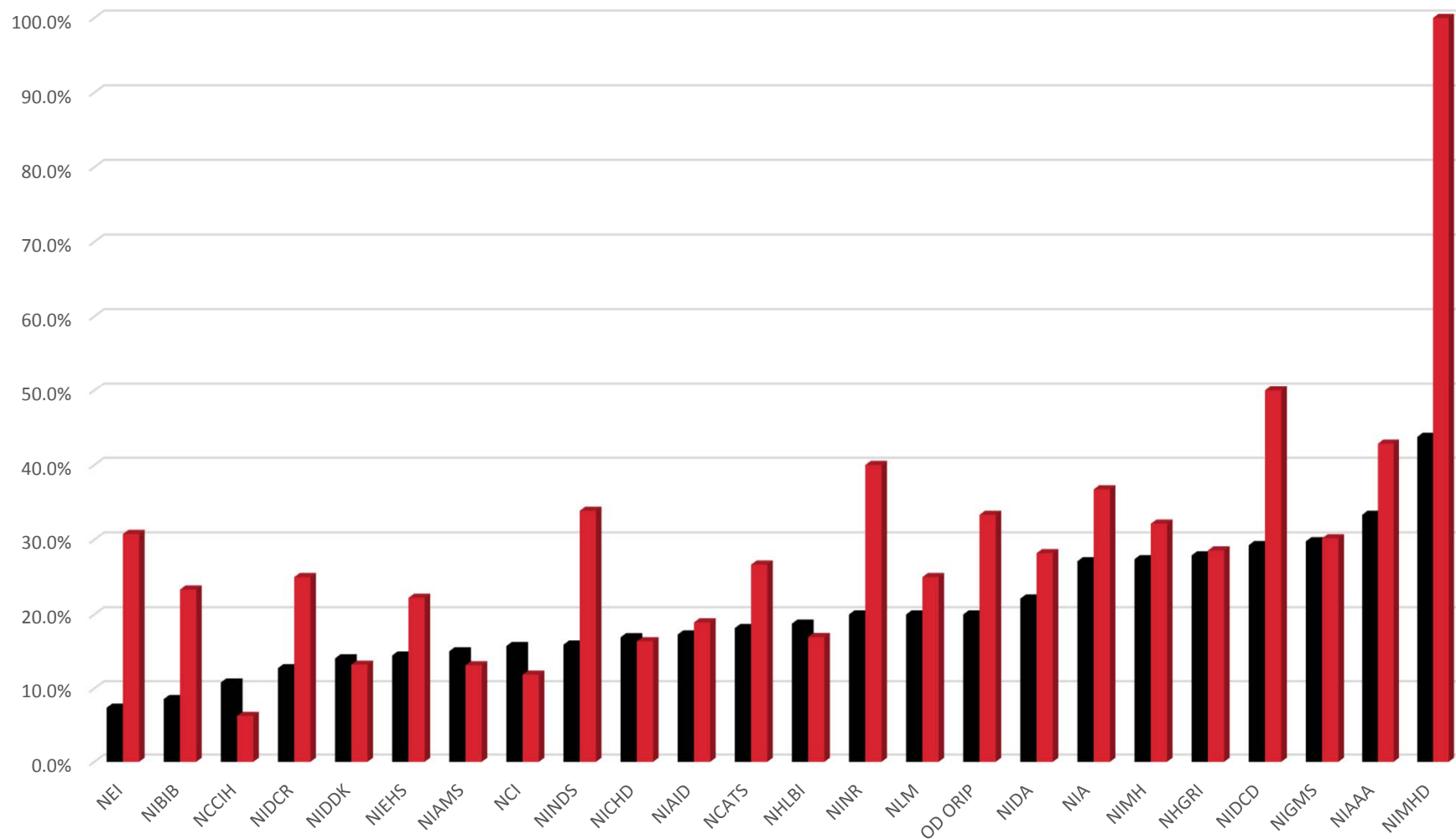
SBIR/STTR Budget Allocations



NIH Phase I SBIR/STTR 2018

NIH 2018 Phase I - SBIR vs. STTR success rates

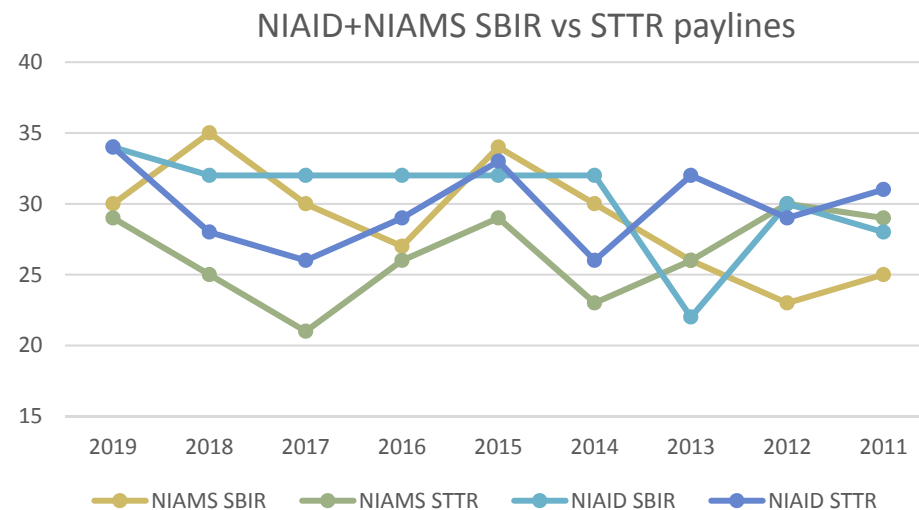
■ SBIR ■ STTR



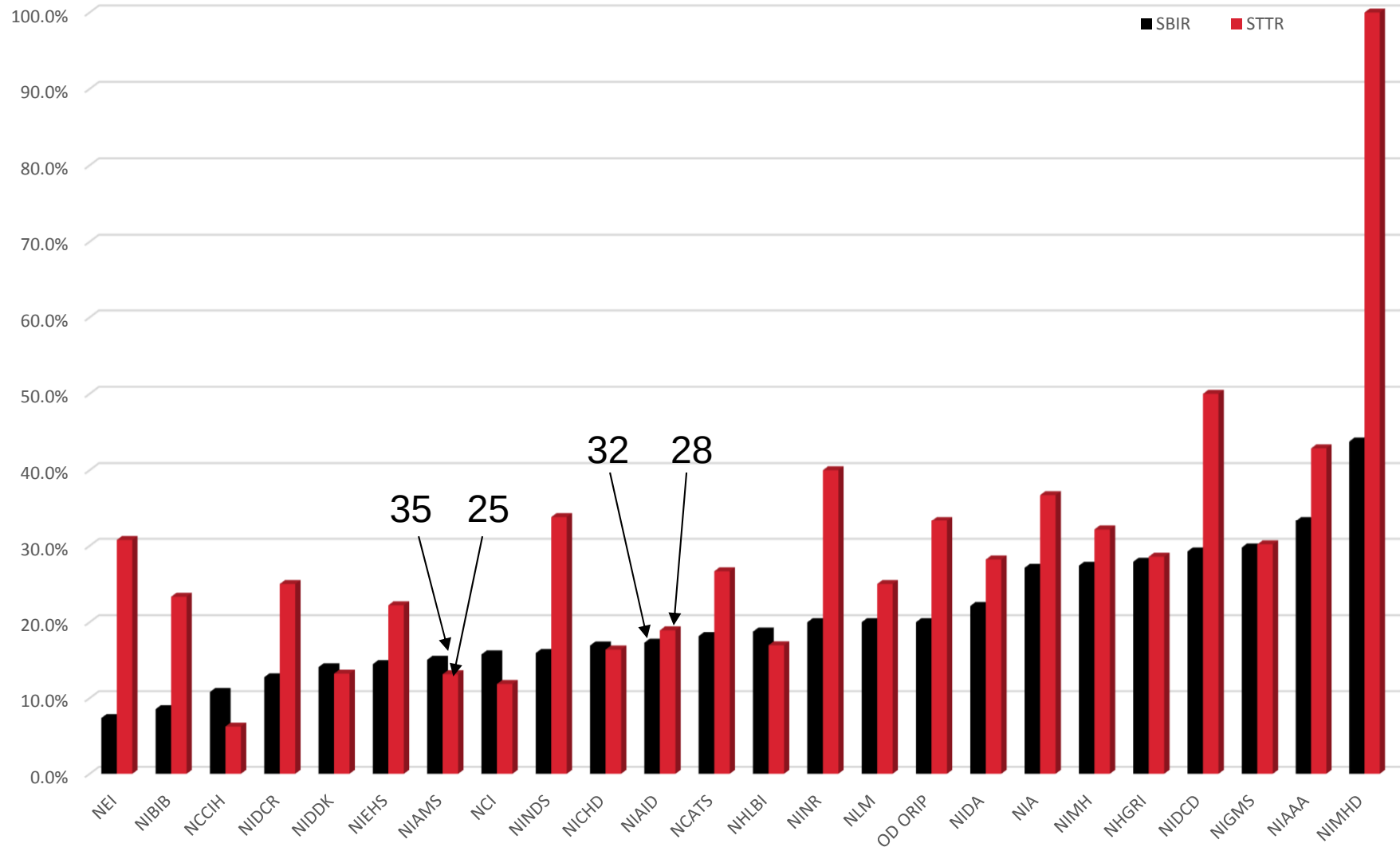
Understanding NIH scoring

- 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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NIEHS	SBIR Phase I	72	22	30.6%	\$3,868,457
NIEHS	SBIR Phase II	24	12	50.0%	\$5,972,947

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

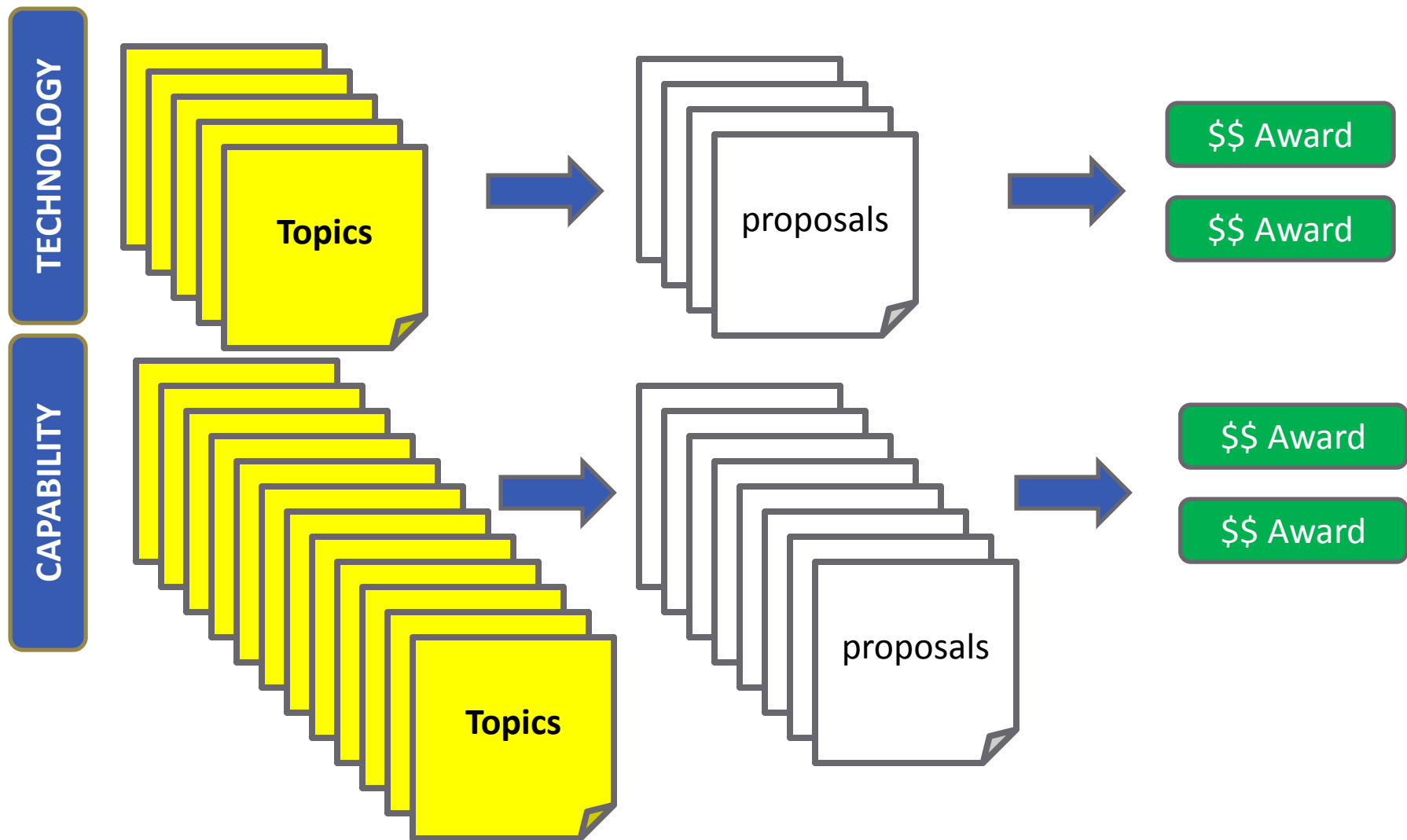
Expected Phase II applications

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

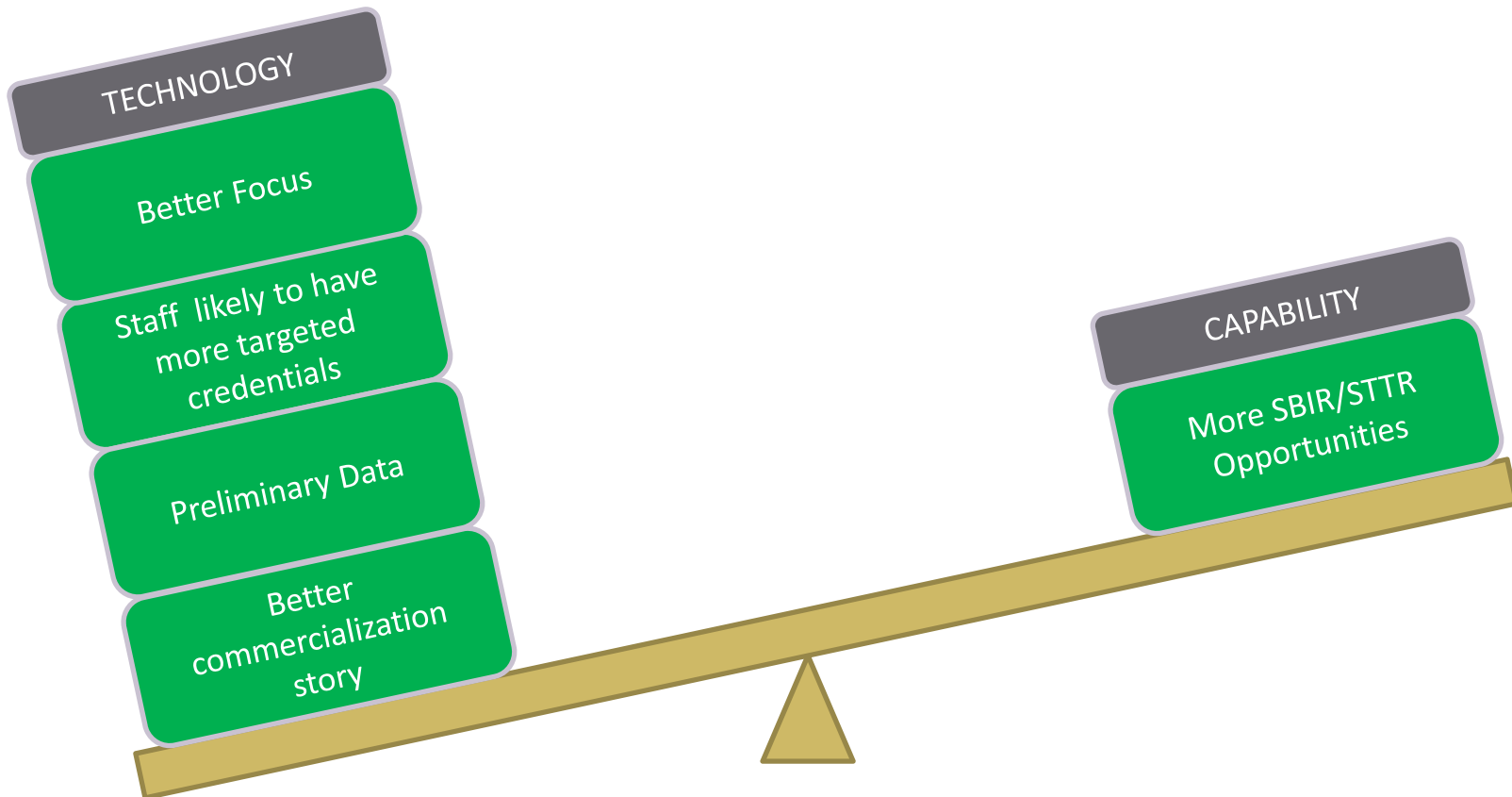
NIEHS Last year 24 Next Year 22 -- funding probabilities will be similar



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

Impact of solicitation schedules



Helping innovative companies secure non-dilutive funding through the SBIR & STTR programs

15.3% vs. 12.9% = 18.1 % more likely to be funded

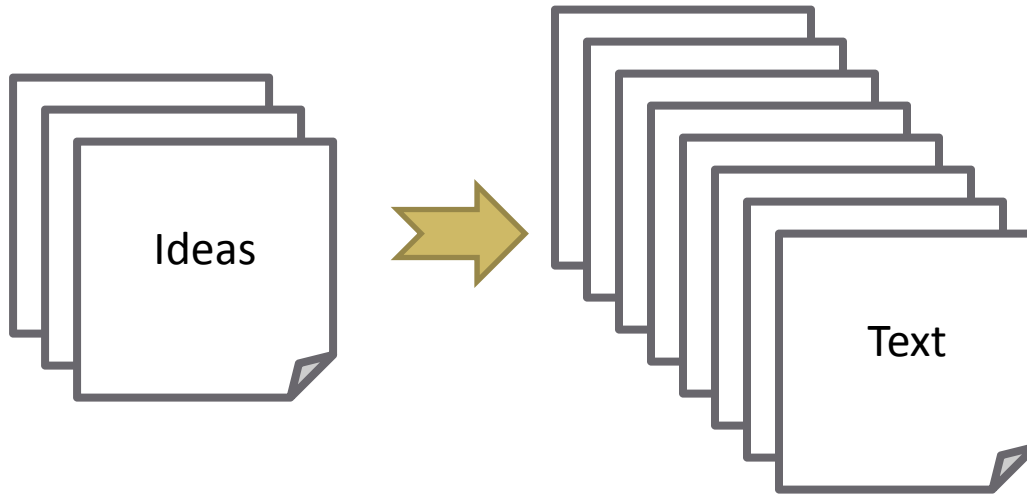
18.0% vs. 12.1% = 48.3 % more likely to be funded

Understanding Reviewer's Points of Entry

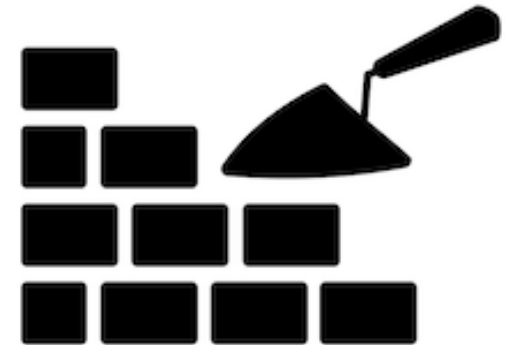


Research Proposal Writing

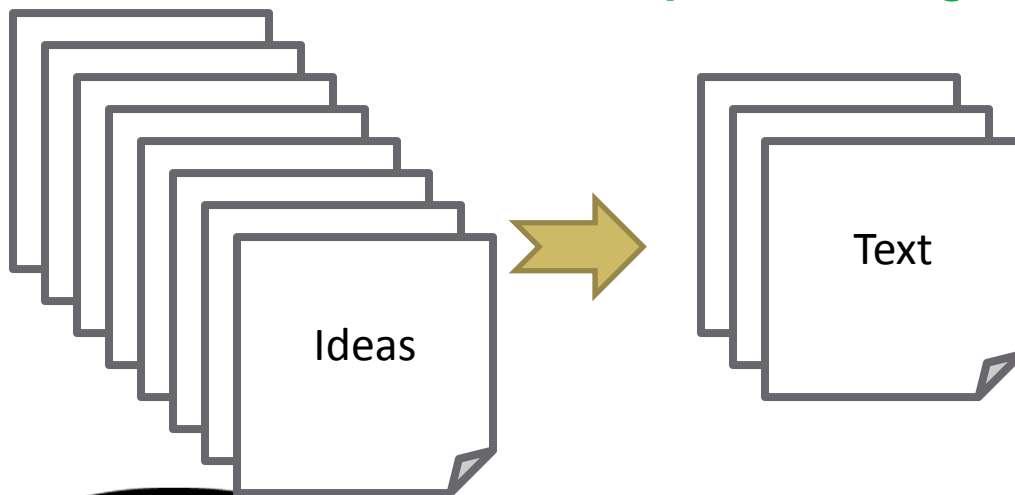
How You Are Taught to Write in School



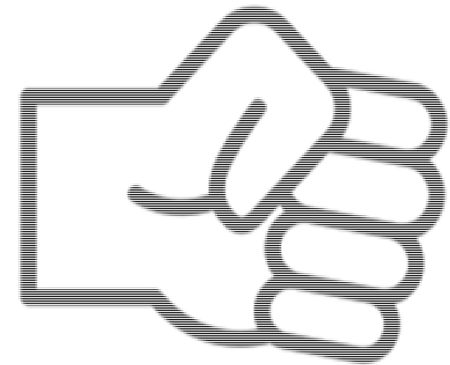
Slow build



Effective Research Proposal Writing



Punch first



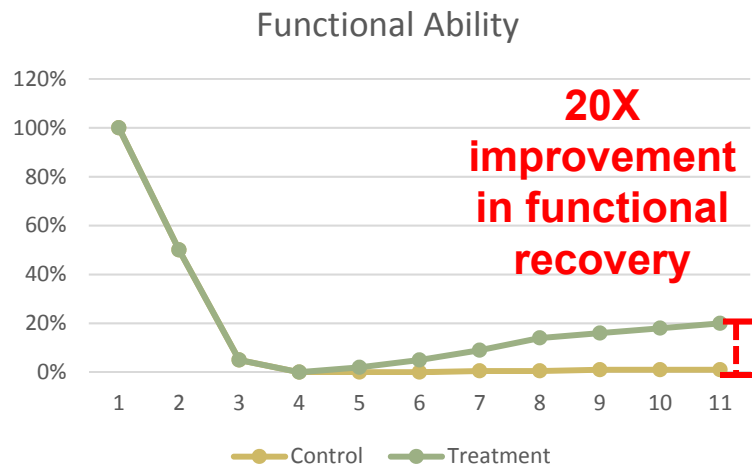
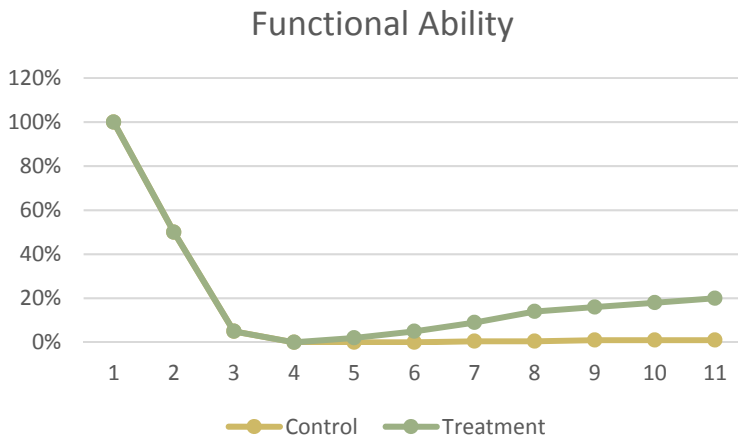
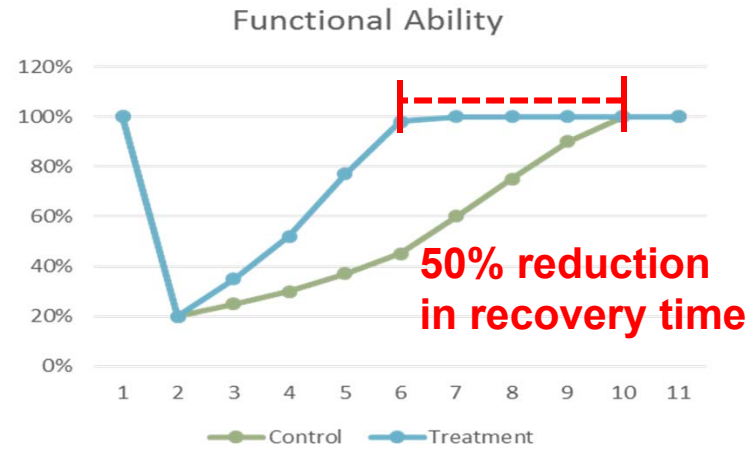
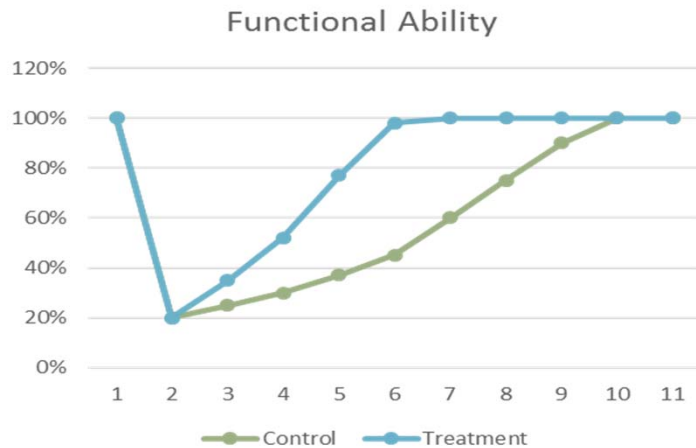
Even smart people are bad with numbers

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



SBIR BASICS: ENHANCE YOUR
CHANCES OF TRANSITIONING FROM
PHASE I TO PHASE II

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



Phase II Success Factors

	Grants					Contracts
						
Phase I Results	★★★★★	★★★★	★★★★★	★★★★	★★★★	★★★★
Phase II Plan	★★★★★	★★★★★	★★★★	★★★★★	★★	★★★★★
Commercialization Plan	★★	★★★★	★★★★	★★★★	★★★★★	★★★★
Team	★★★★	★★	★★	★★	★★	★★
Company History	★★	★★★★	★★	★★	★	★★

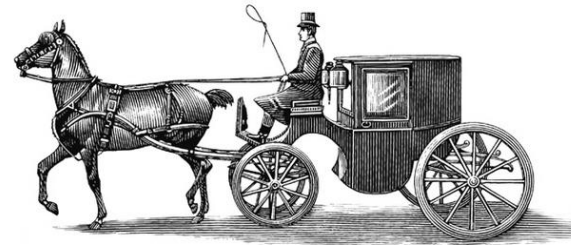
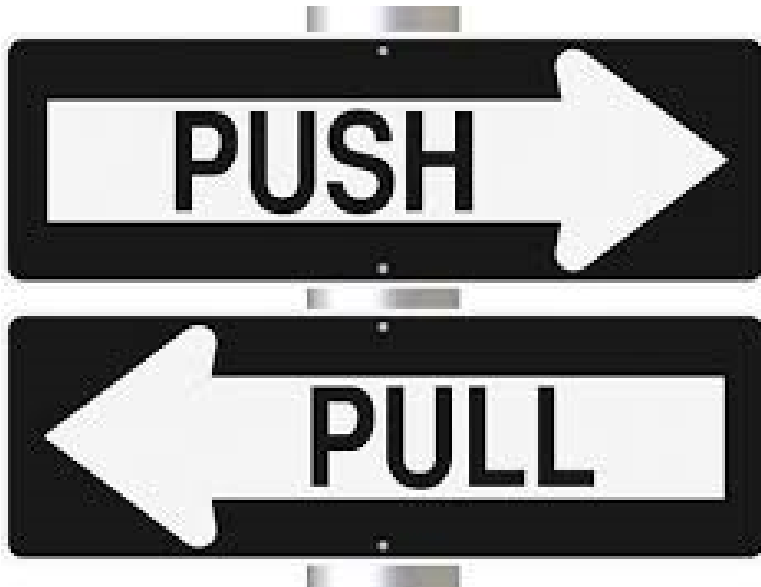


Commercialization Plans: Better Technology is not a Commercialization Plan



What is the product?

- Technology Does Not Equal A Product
- What customer need does the product meet?
-But what if the customer doesn't know he needs the product???



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

Creating a new product category

- 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



Two Biggest Gamechangers

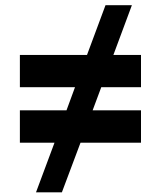
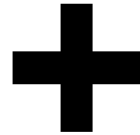
- Raise Money During your Phase I
- Move from talk to action with 3rd parties (i.e. Secure pilot customers/users during Phase I



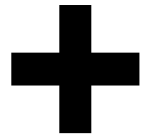
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SBIR BASICS: ENSURE YOUR
SBIR/STTR AWARD ADDS VALUE TO
YOUR START-UP

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!



- 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	
		WELL BELOW POTENTIAL	CLOSE TO POTENTIAL
CONTROL OVER COMPANY	LITTLE	Failure	Rich
	COMPLETE	King	Exception



Successful company common theme

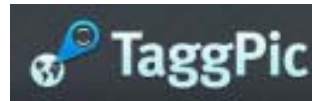
Boston
Scientific



facebook



Google



Microsoft®



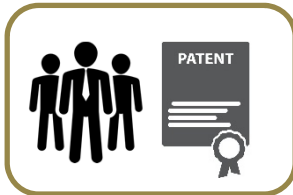
SBIR • STTR
America's Seed Fund



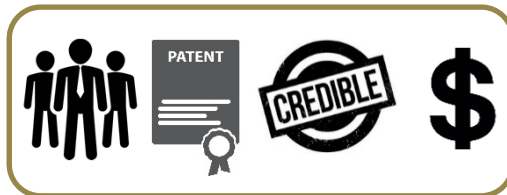
VENTURE CAPITAL

Raise money from position of strength

PRE
PHASE I



PHASE I
AWARD



PHASE II PROPOSAL
REJECTED



PHASE II
AWARD



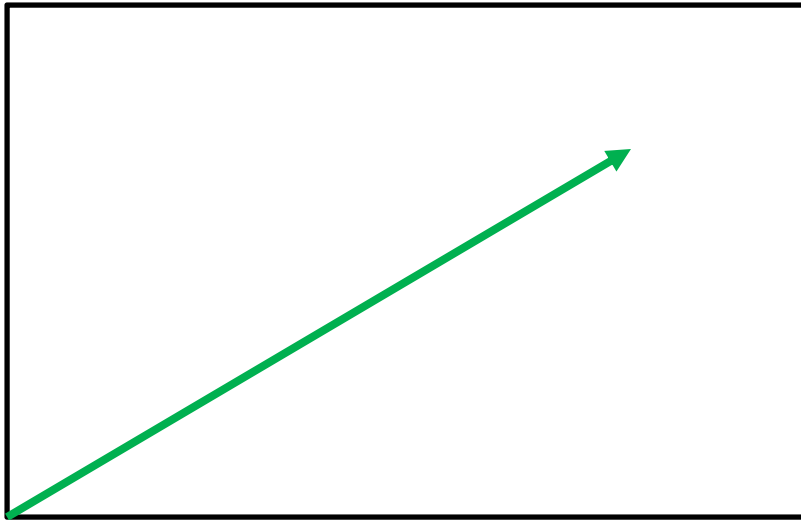
END OF NEGATIVE PHASE II

END OF
POSITIVE
PHASE II

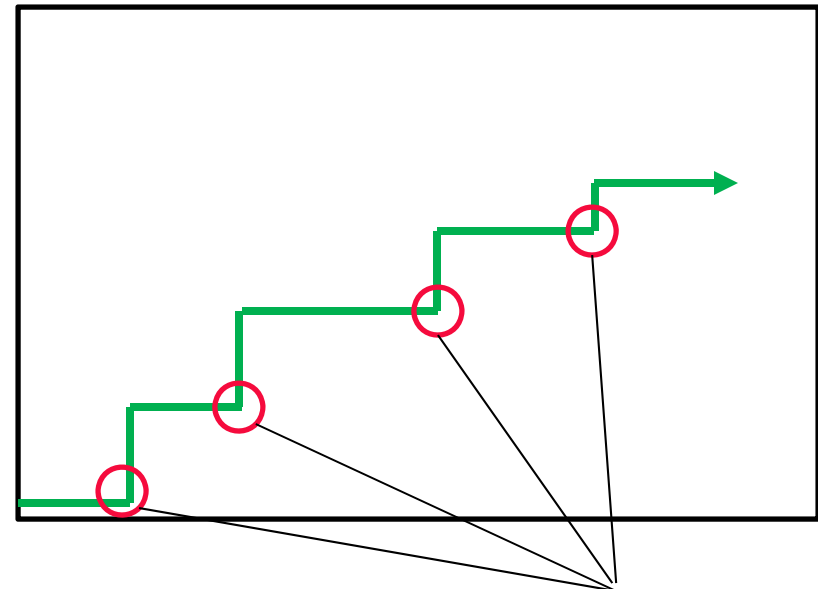


Understand the step functions

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



Questions?



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