SUNY STARTUP
SUMMER SCHOOL

Week 4

June 23, 2021

SUNY STARTUP
SUMMER SCHOOL

Course Schedule

| Week	Date	Course Title	Presenters
4	June 23	How To Win Grants – Mastering Non-Dilutive Funding Sources	Kirk Macolini, InteliSpark
5	June 30	Grant Budget Basics – Managing Your Award Like A Pro	Jaron Kuppers, Amala Consulting
6	July 7	Forming and Structuring Your Company Like A Boss	Rich Honen, Phillips Lytle
7	July 14	Selling and Telling Your Story	Sue Hayes, Labsim
8	July 21	Commercialization 101 – Positioning Your Go-To-Market Strategy	Mark Sperry, Sperry Energy
9	July 28	Follow-On Capital Sources – What Early-Stage Investors Want	David Cruikshank, ARCH Venture Partners
10	August 2-6	1:1 Meetings With SUNY Venture Advisors	
11	August 11	Demo Day and Graduation	

Course Schedule

1. If you signed up for **I-Corps**, the first class is today 6/23 4-6 PM ET.

2. At the end of each live session, please answer a 1 question **Zoom poll** about this week's topic. Your feedback helps us improve the program.

3. August 2-6: **30-minute dry run** of your pitch. More info on scheduling in the upcoming weeks.

4. Mark your calendars: August 11 **3-5 PM Demo Day**: S4 culminates with a Demo Day celebration and graduation where participants pitch their technology or venture for one or more $10k Technology Accelerator Fund Catalyst Investments.

SUNY STARTUP
SUMMER SCHOOL

S4 Directory

1. **Releasing this week:** The S4 Directory will be shared as part of this week's follow up email. The directory will have a listing by schools and will include research focus areas. Get to know your classmates and connect with them via LinkedIn!

2. Also in the weekly emails: Recordings and presentations will be shared after each class, but we highly encourage you to attend live to take advantage of the full experience. There are also helpful announcements so **don't forget to check your email on Thursdays.**
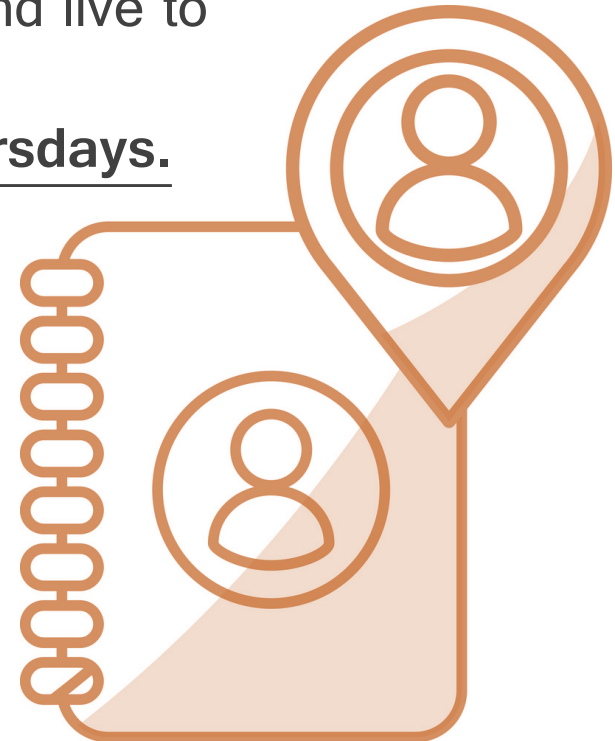
Join LinkedIn

Engage with your classmates!

1. Join the SUNY Innovation and Entrepreneurship Network LinkedIn Group

2. Comment on the "Welcome to the S4 class of 2021" post in this LinkedIn group to introduce yourself. Recommendations on what to include: campus affiliation, what you are working on, what you hope to get out of S4 and a fun fact about yourself.

3. Reply to a classmate's post to 'meet' them!

Also see this LinkedIn post for follow up Q&A from last week's session with Garrett and Tanya.

Leaderboard

Leaderboard Top 21

	First Name	Last Name	Points
1	Christopher	Badurek	9
2	David	Liu	9
3	Michael	Coyle	9
4	Carol	Beckley	6
5	Nicholas	Mattern	5
6	Adam	Graczyk	4
7	Alba	García-Rodríguez	4
8	Alexis	Weber	4
9	Brennan	Overhoff	4
10	Christopher	Williams	4
11	Douglas	Ling	4
12	Eman	El-Rowmeim	4
13	Ezra Mel	Pasikatan	4
14	Gunnar	Larson	4
15	Hai	Lin	4
16	Janet	Paluh	4
17	Jill	Lee	4
18	Michael	Walters	4
19	Noa	Eshkar	4
20	Tatyana	Tarasevich	4
21	Weilan	Zhang	4
22	Zuby	Onwuta	4

Leaderboard By Campus

#	Campus	Points	
1	Albany	32	
2	Downstate	28	
3	Polytechnic Institute	25	
4	Buffalo	24	
5	Binghamton	23	
6	Stony Brook	21	
7	Cortland	9	
8	Upstate	8	
9	Buffalo State College	7	
10	Brockport	4	
11	Oswego	4	
12	Plattsburgh	4	
13	Potsdam	3	
14	Morrisville	2	
15	Empire State College	1	
16	ESF	1	
17	Fredonia	1	
18	Herkimer County Commu	1	
19	Cobleskill	0	
20	Farmingdale State College	0	
21	New Paltz	0	
22	Old Westbury	0	

Questions about S4?

Email us at S4@rfsuny.org

Let's jump into today's topic!

SUNY STARTUP
SUMMER SCHOOL

How To Win Grants
Mastering Non-Dilutive Funding Sources

Meet your presenter!

Kirk J. Macolini

President

InteliSpark, LLC

www.InteliSpark.com | Kirk@InteliSpark.com
607.277.1570

Follow us on

https://www.linkedin.com/company/intelispark-llc

INTELISPARK TRACK RECORD

~**500 proposals** (95%+ SBIR/STTR) selected for award

~**$250,000,000** in projects selected for award

39 start-up clients funded in 2020

Clients have had **>$1,000,000,000 in successful exits**

GENERAL ELIGIBILITY

▶Organized for-profit U.S. business

▶At least 51% owned by U.S. individuals or small businesses and independently operated (NIH, CDC, ARPA-E (DoE) are exceptions- can be 51% owned by multiple VC firms)

▶Small Business located in the U.S.

▶P.I.'s primary employment with small business during project (NIH allows STTR PI to come from University)

▶500 or fewer employees (including affiliates)

▶All SBIR-funded work must be done in the U.S.

SBIR vs. STTR

SBIR: Permits allows research partners (non-profit or for profit)

- no more than 33% during Phase I
- no more than 50% during Phase II

STTR: Requires non-profit research institution partner (e.g., universities)

- A minimum of 40% for small business
- A minimum of 30% for research institution
- Remained 30% can go to either partner or 3rd parties

Despite misconceptions, there is NO Requirement to do Tech Transfer under an STTR

SBIR/STTR PHASES

- **PHASE I** (Crawl)
  - Feasibility Study
  - ≤ $150,000 and ~6 months (SBIR) or ~12 months (STTR)

- **PHASE II** (Walk)
  - Full R&D
  - ≤ $1,000,000 and ~24 months

- **PHASE III** (Run)
  - Continued R&D/Commercialization
  - Non-SBIR funded

AN UNEFFICIENT MARKET

Understand your buyer to improve your Phase I Proposal Success Rate

You can exploit discontinuities in the funding probabilities

SUNY STARTUP
SUMMER SCHOOL

VIEW SBIR/STTR AS A MARKETPLACE

"ART" OF GRANT WRITING
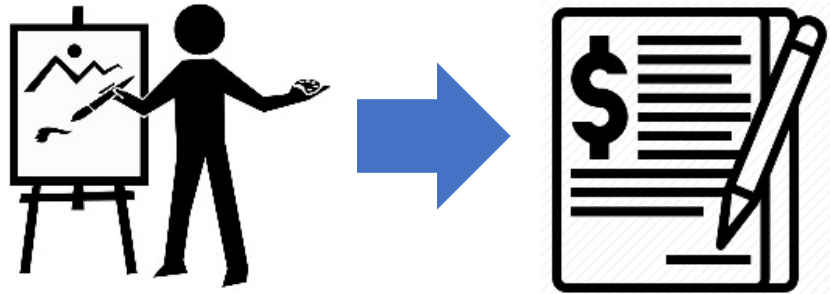
Investigator Driven Perspective
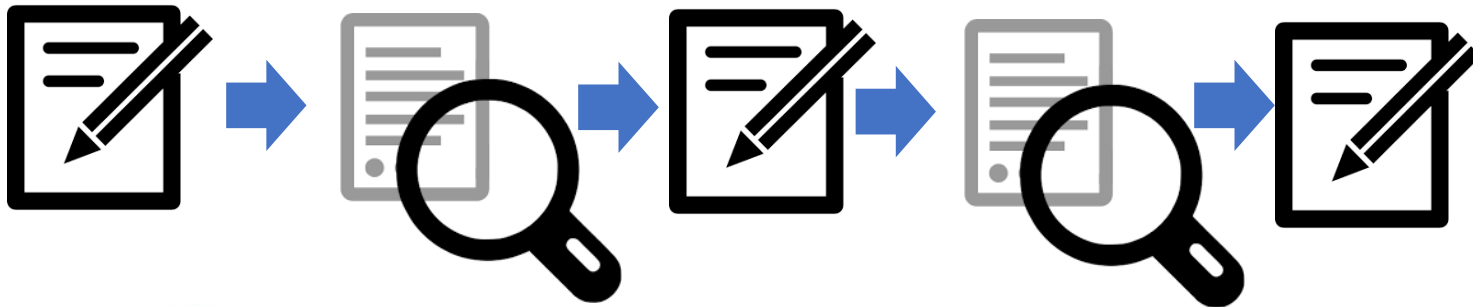
Tends to be Focused on the Seller

SUNY STARTUP
SUMMER SCHOOL

InteliSpark

VIEW SBIR/STTR AS A MARKETPLACE

▶ **DATA DRIVEN MARKETPLACE**
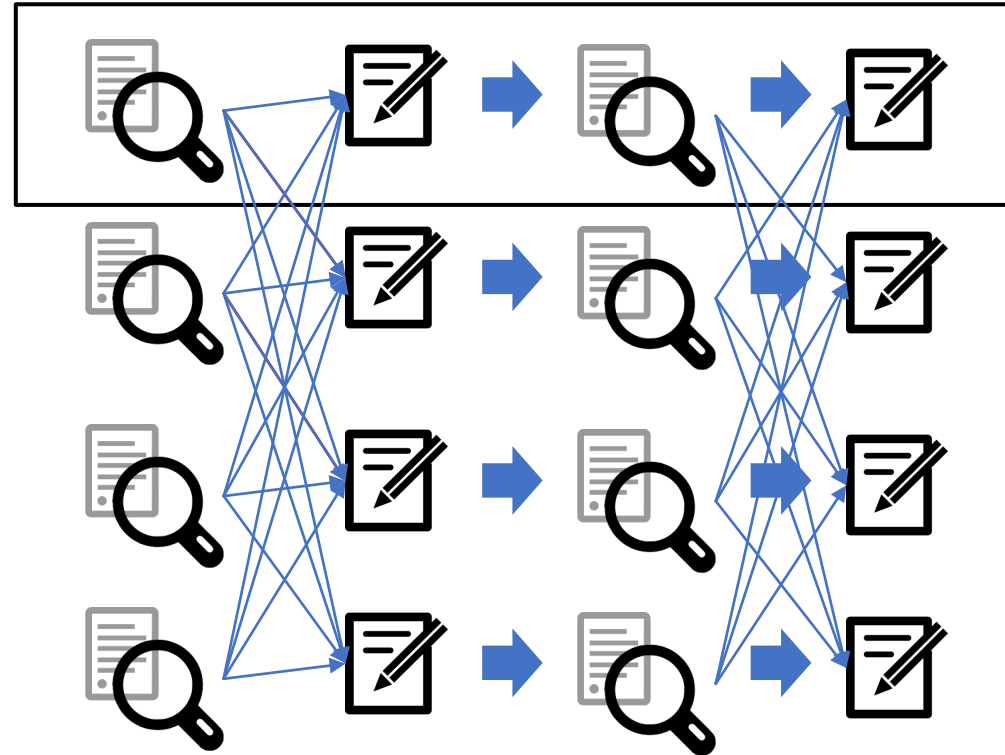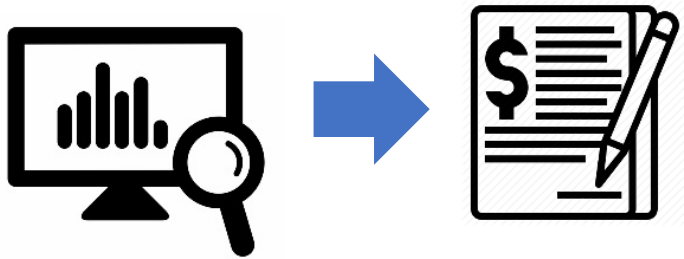
Focused on matching the seller to the buyer

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:
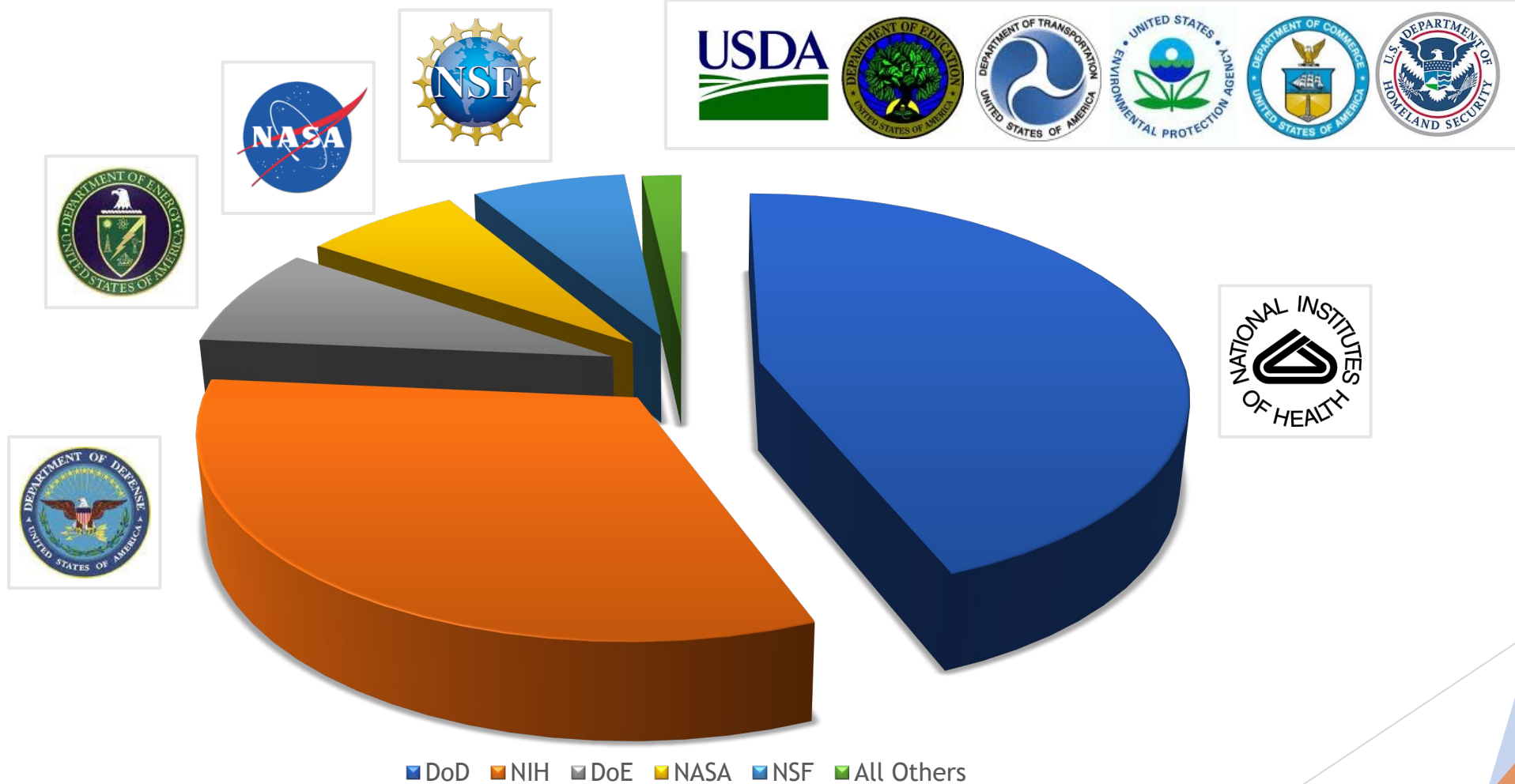
　▶~ **78%** of awardee companies were incorporated within the past 5 years
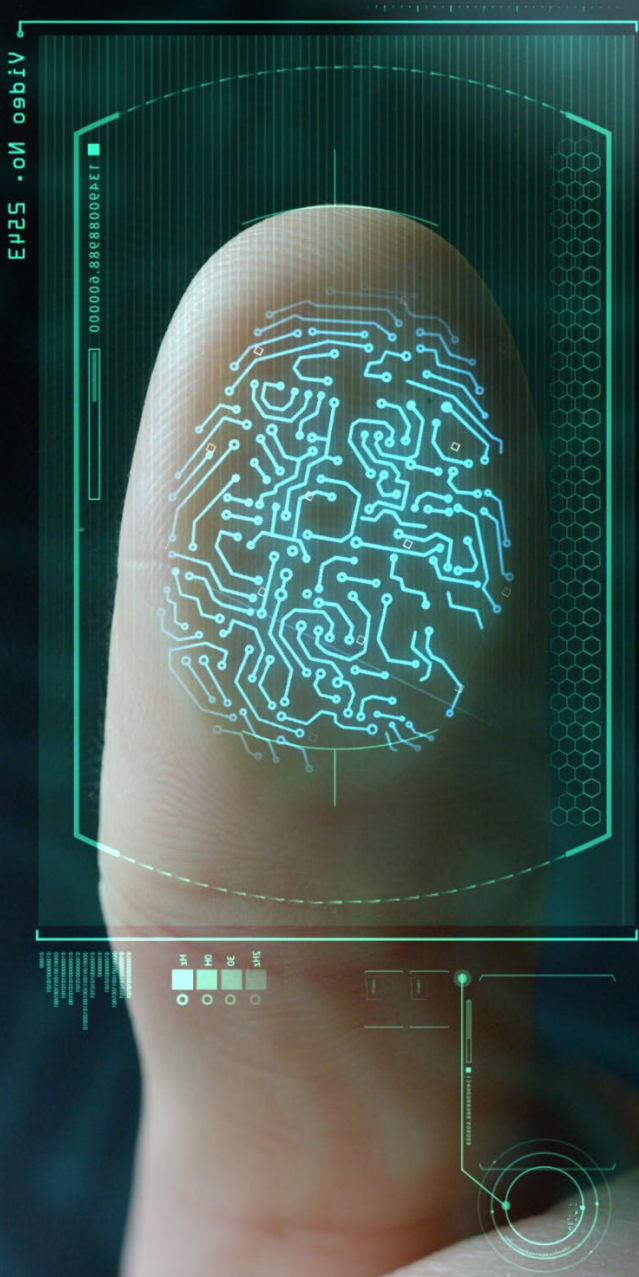
EVERY AGENCY IS UNIQUE

- 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

DoD NIH DoE NASA NSF All Others

GO FISHING WHERE THE FISH ARE, BUT....
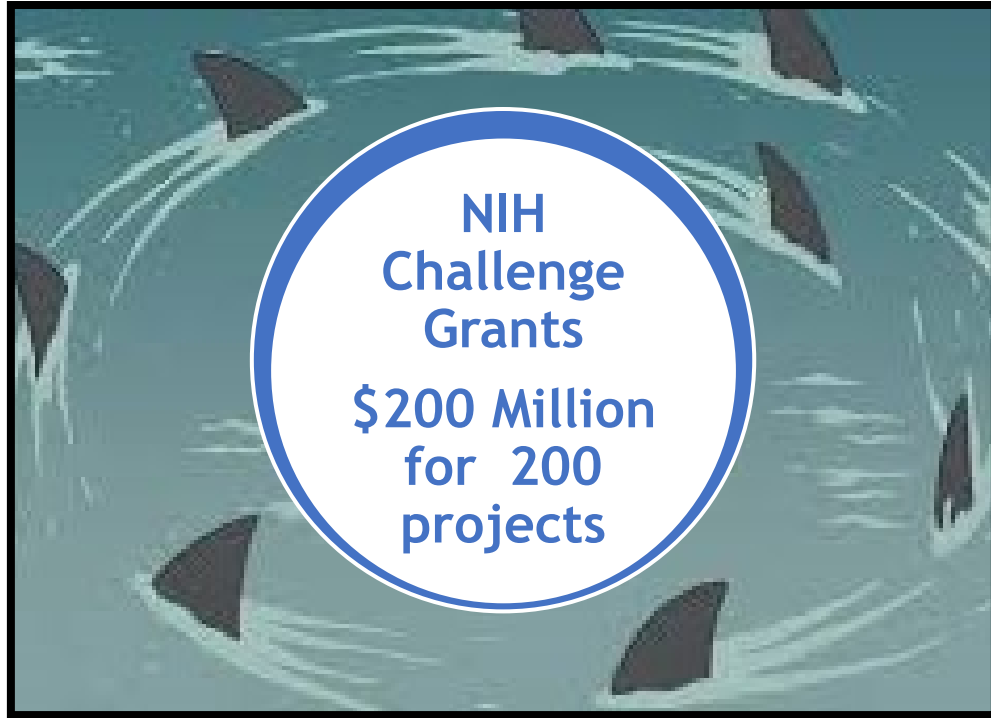
NIH Challenge Grants

$200 Million for 200 projects

DoD Operational Medicine BAA

$100 Million for ~100 projects

AVOID THE CROWDED FISHING HOLES

CASE STUDY: THE CROWDED FISHING HOLE

NIH Challenge Grants

$200 Million for 200 projects

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

~800 applications for ~100 awards
= 12.5% probability

DoD Operational Medicine BAA

$100 Million for ~100 projects
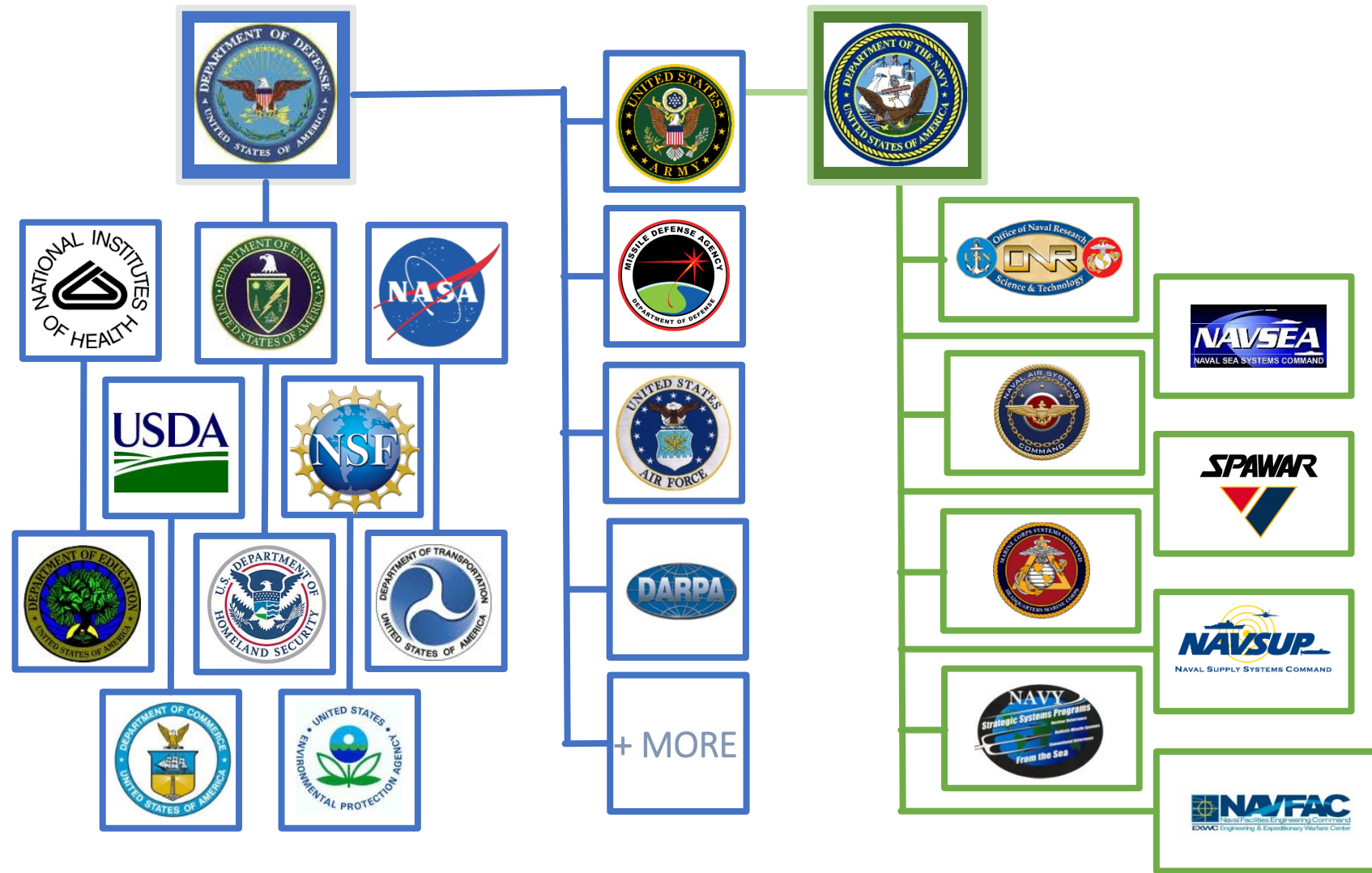
SBIR/STTR IS NOT MONOLITHIC

NARROW VS. OPEN TOPICS

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

HEAD-TO-HEAD (TECHNOLOGY VS. CAPABILITY)

TECHNOLOGY

Better Focus

Staff likely to have more targeted credentials

Preliminary Data

Better commercialization story

CAPABILITY

More SBIR/STTR Opportunities
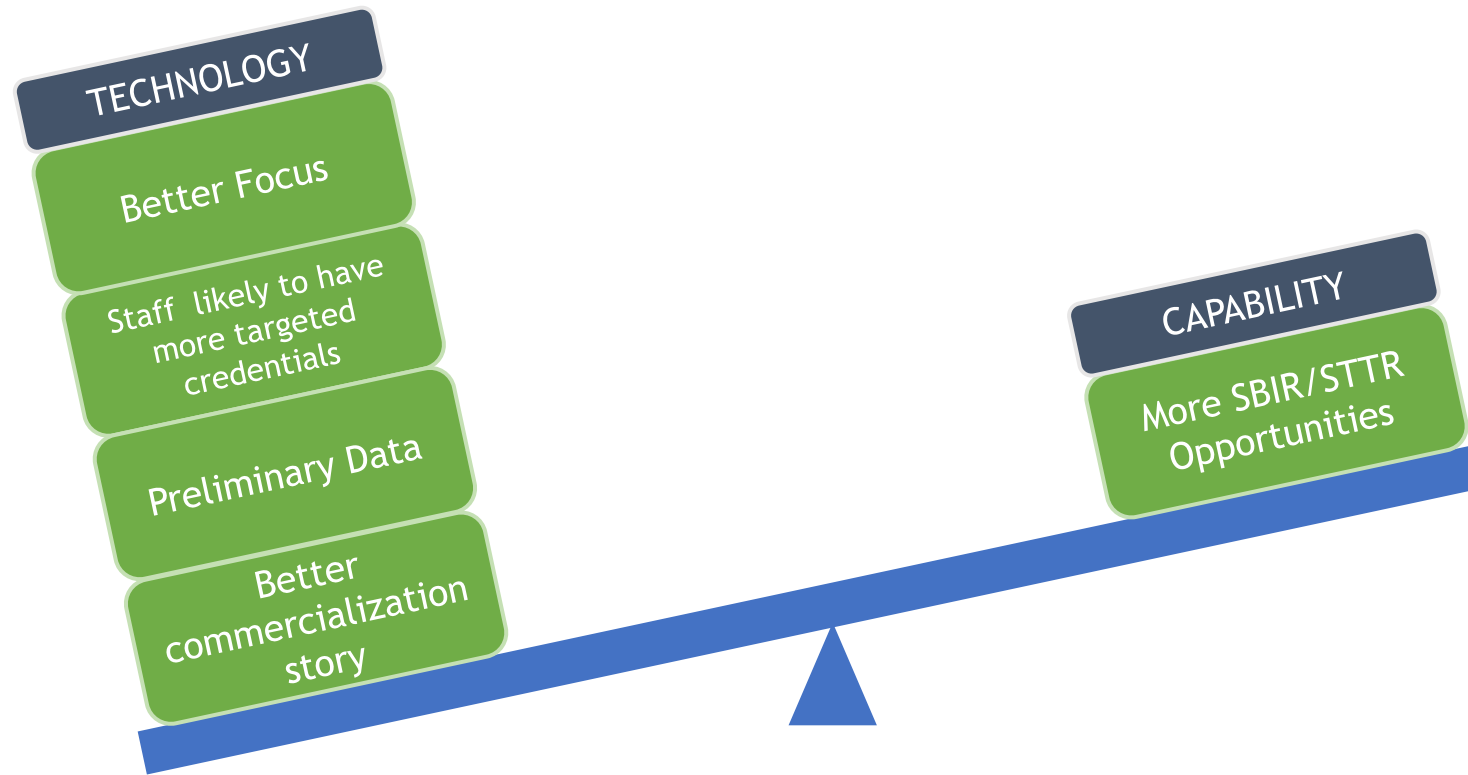
"Concentrate your energies, your thoughts and your capital…. The wise man puts all his eggs in one basket and watches the basket."
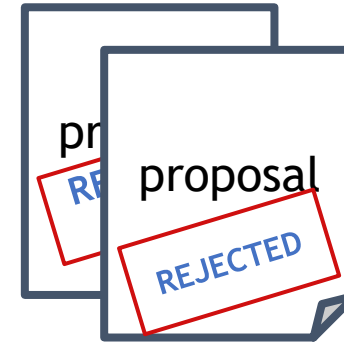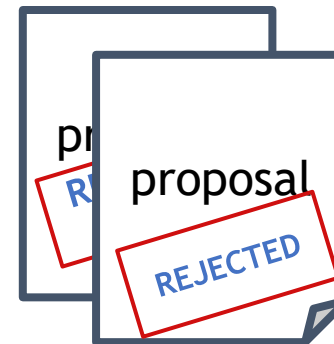*- Andrew Carnegie*

CASE STUDIES: NIH VS. NSF
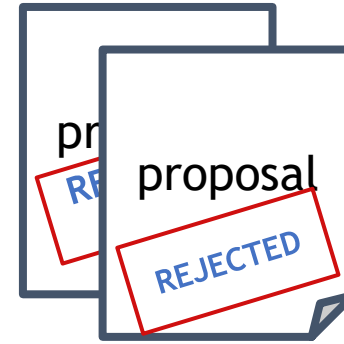
APAMA Medical
Catheter Ablation Device for Atrial Fibrillation

→ NATIONAL INSTITUTES OF HEALTH →

proposal
REJECTED

STERLING BIOMEDICAL
Anti-Microbial Polymer for Catheters

→ NATIONAL INSTITUTES OF HEALTH →

proposal
REJECTED

Lumiphore
Reporter molecule for DNA screening

→ NATIONAL INSTITUTES OF HEALTH →

proposal
REJECTED

CASE STUDIES: NIH VS. NSF

APAMA Medical
Catheter Ablation Device
for Atrial Fibrillation

proposal = Award

STERLING BIOMEDICAL
Anti-Microbial Polymer
for
Catheters

proposal = Award

lumiphore
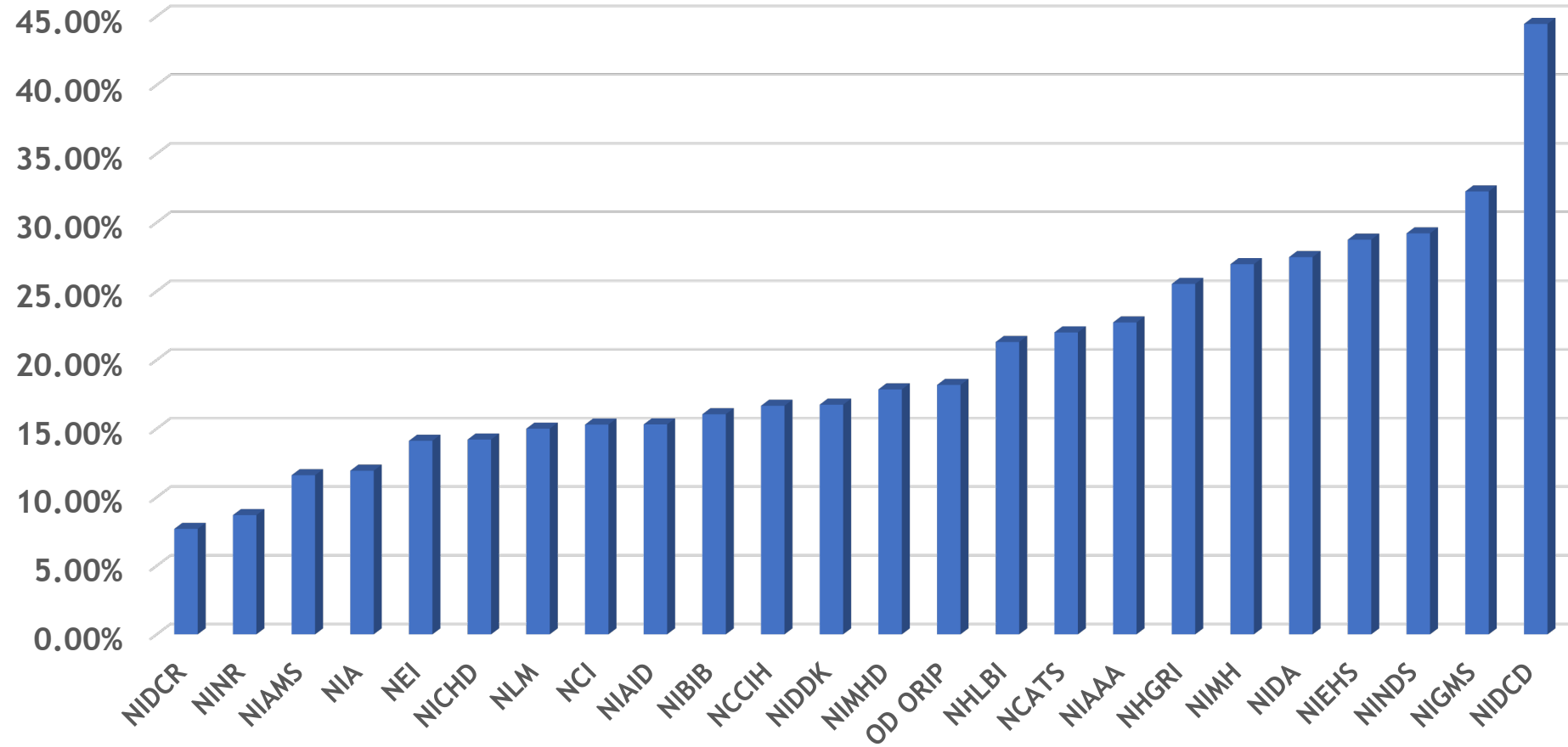Reporter molecule
for
DNA screening

proposal = Award

NAVIGATING NIH

SBIR/STTR Budget Allocations
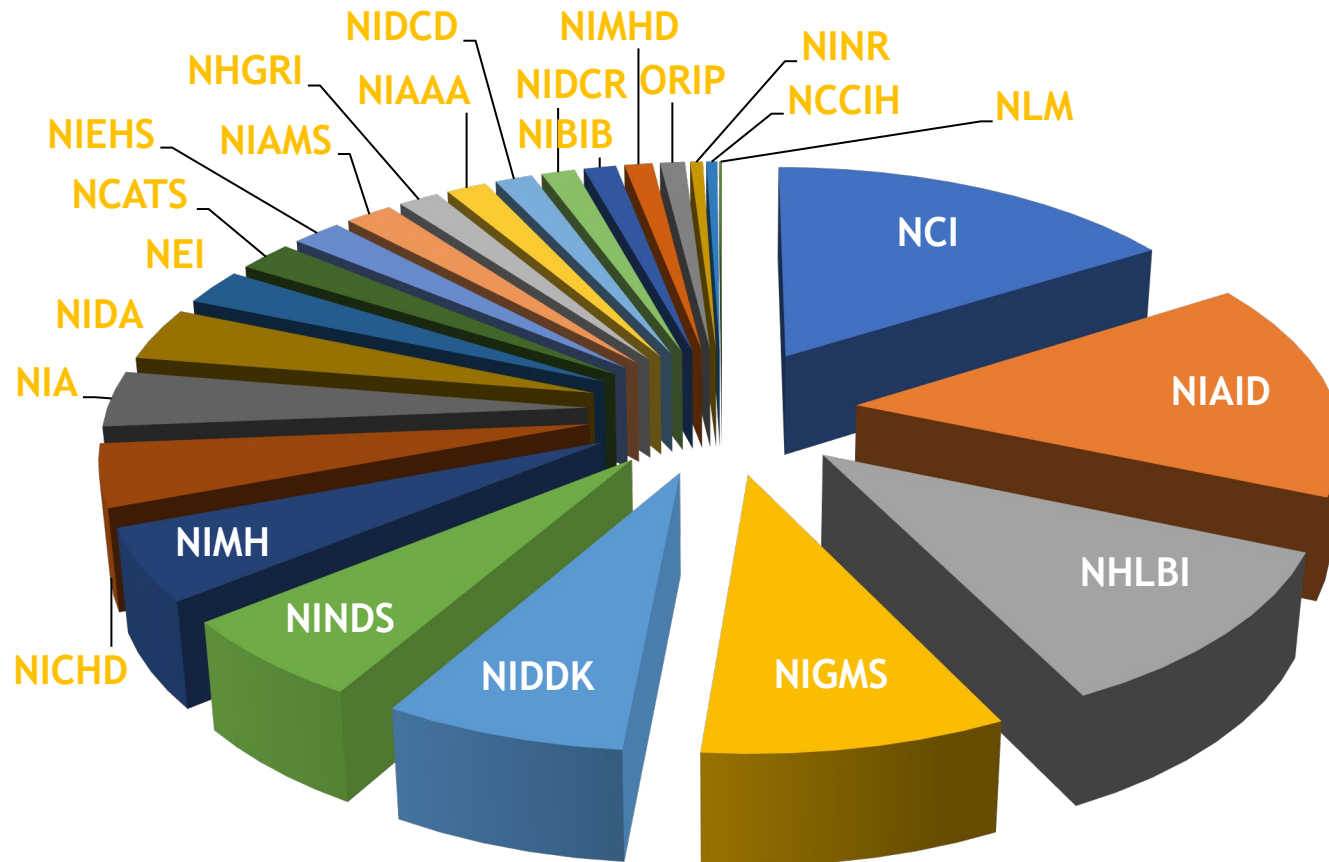
2019 NIH Phase I SBIR Success Rates

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)

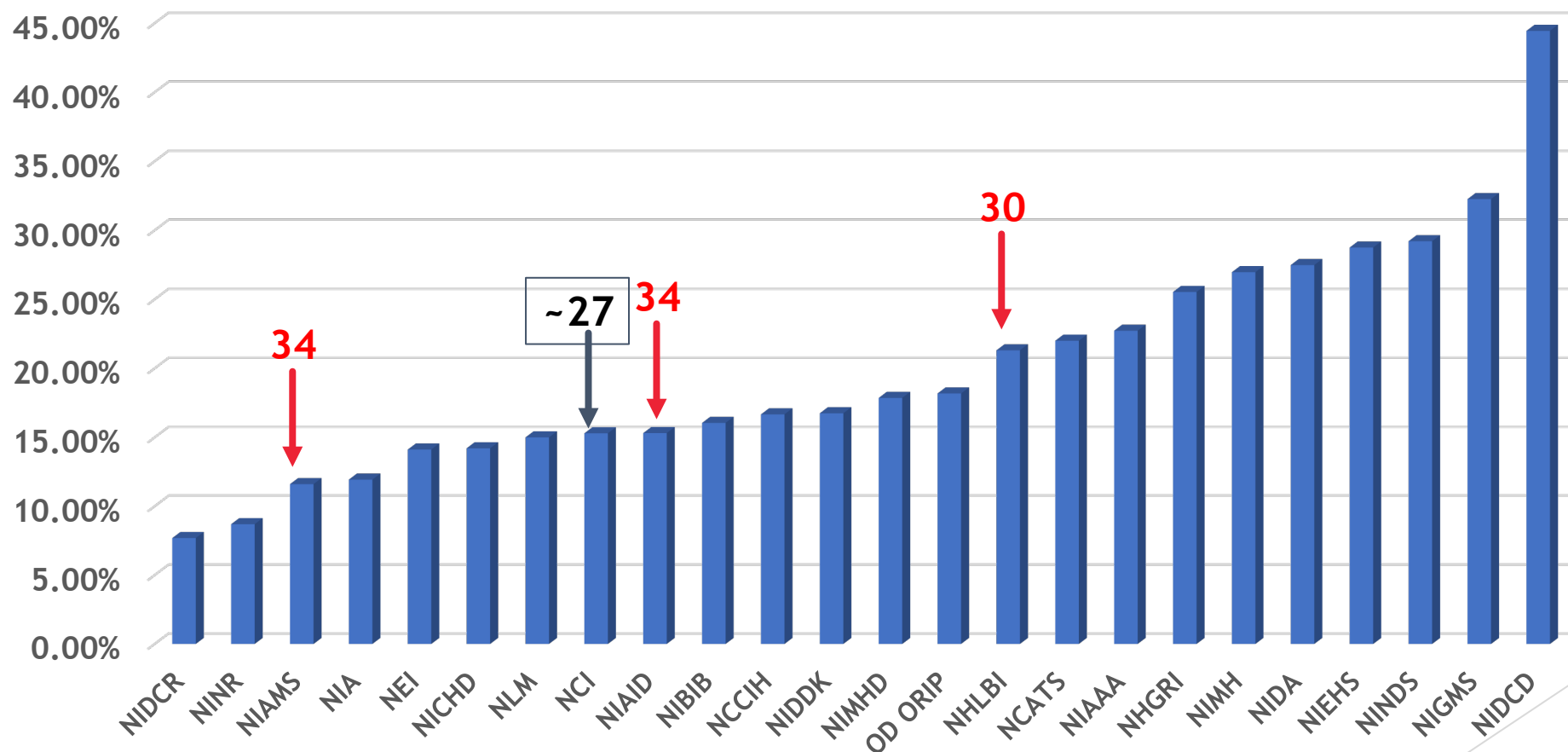▶ Choosing the right sub agency can be the difference between success and failure

NIAID+NIAMS SBIR vs STTR Paylines

Legend: NIAMS SBIR, NIAMS STTR, NIAID SBIR, NIAID STTR
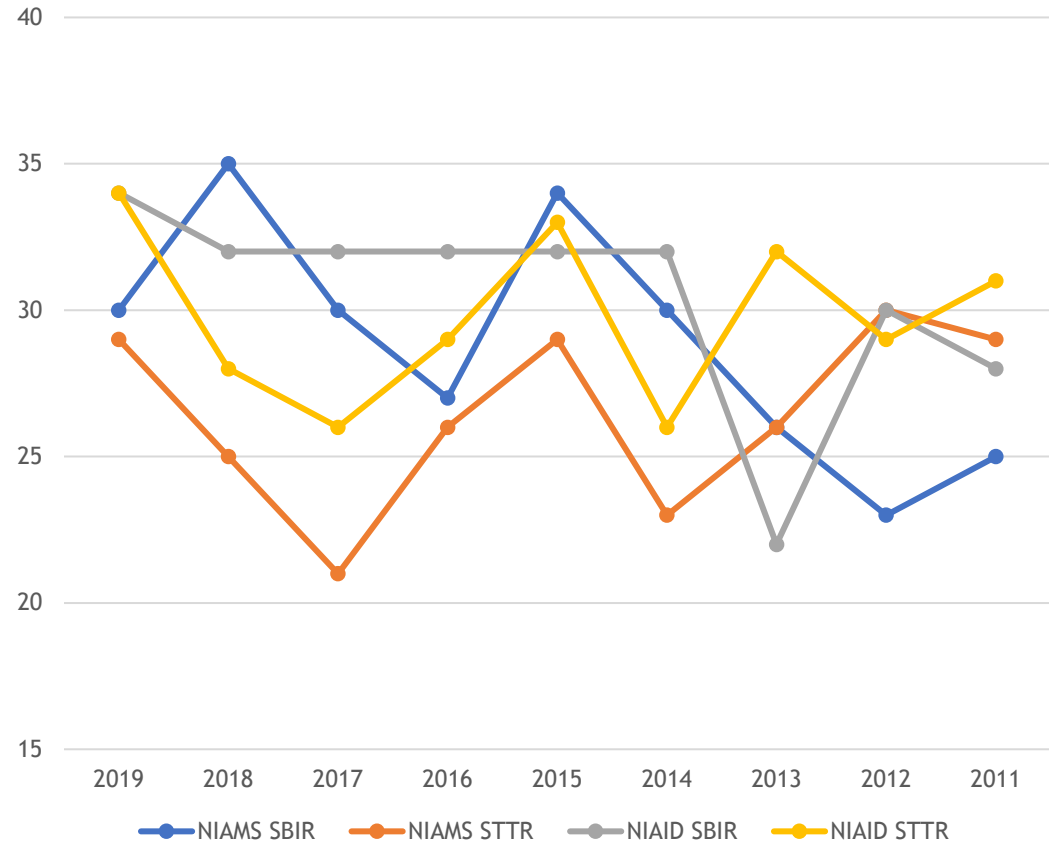
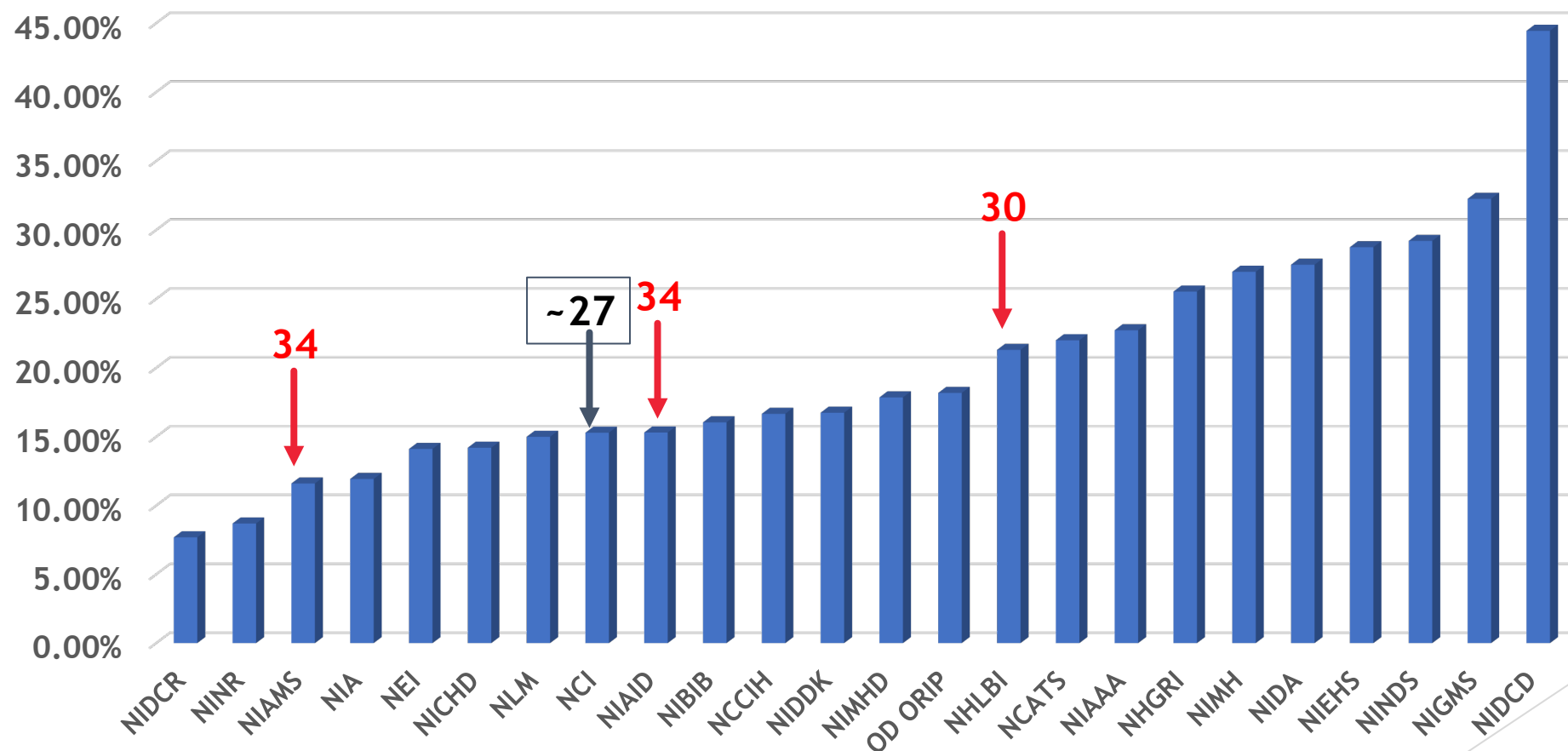*NIH STTR Success Rates and Paylines can fluctuate wildly*

SUCCESS RATE DOES NOT EQUAL PROBABILITY
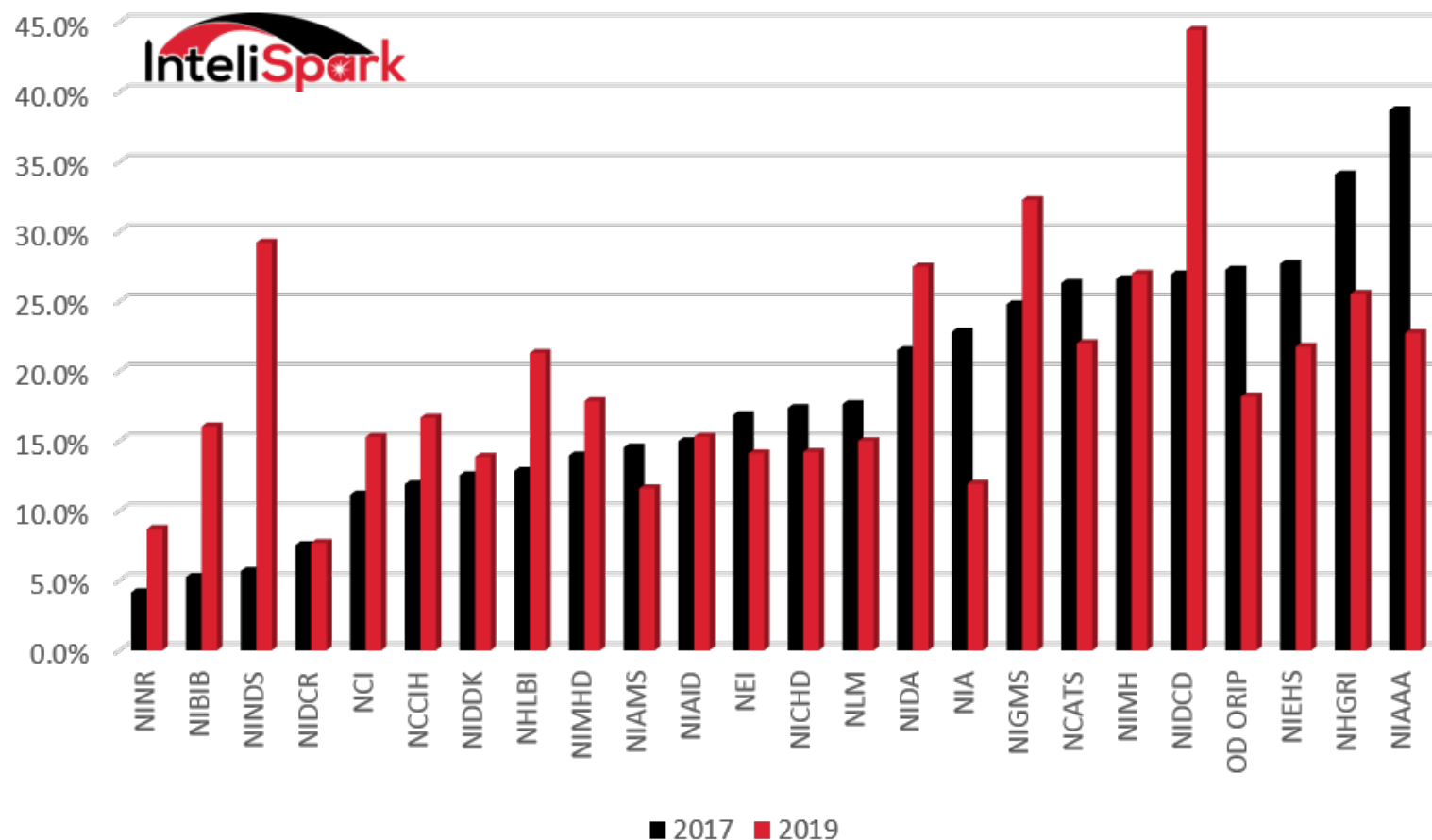
2019 NIH Phase I SBIR Success Rates

SUCCESS RATE DOES NOT EQUAL PROBABILITY

2019 NIH Phase I SBIR Success Rates

LOOKING FORWARD VS. BACKWARD

NIH 2017 vs. 2019 Phase I SBIR Success Rate

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

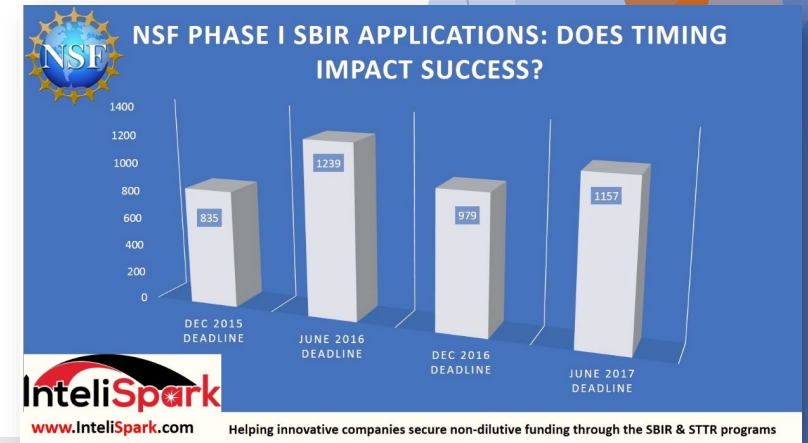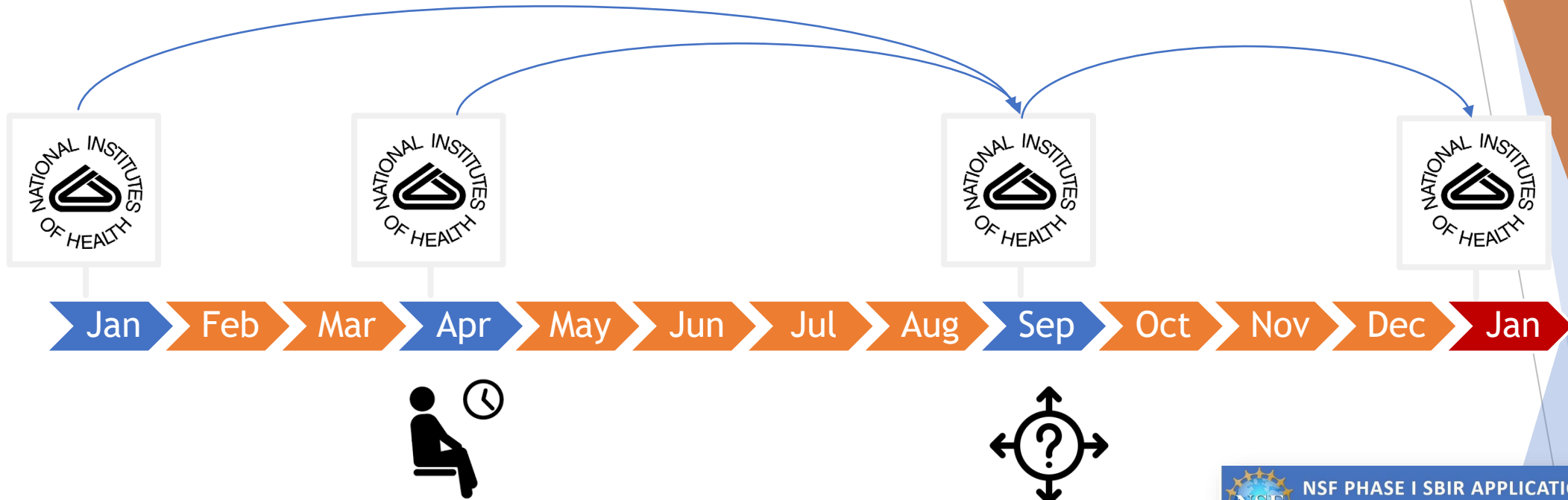|					
NIDCR	SBIR Phase I	56	17	30.4%	$3,432,933
NIDCR	SBIR Phase II	7	4	57.1%	$1,864,889
NIEHS	SBIR Phase I	72	22	30.6%	$3,868,457
NIEHS	SBIR Phase II	24	12	50.0%	$5,972,947

Published Data is Backward looking…project forward!!!

PHASE II APPLICATIONS

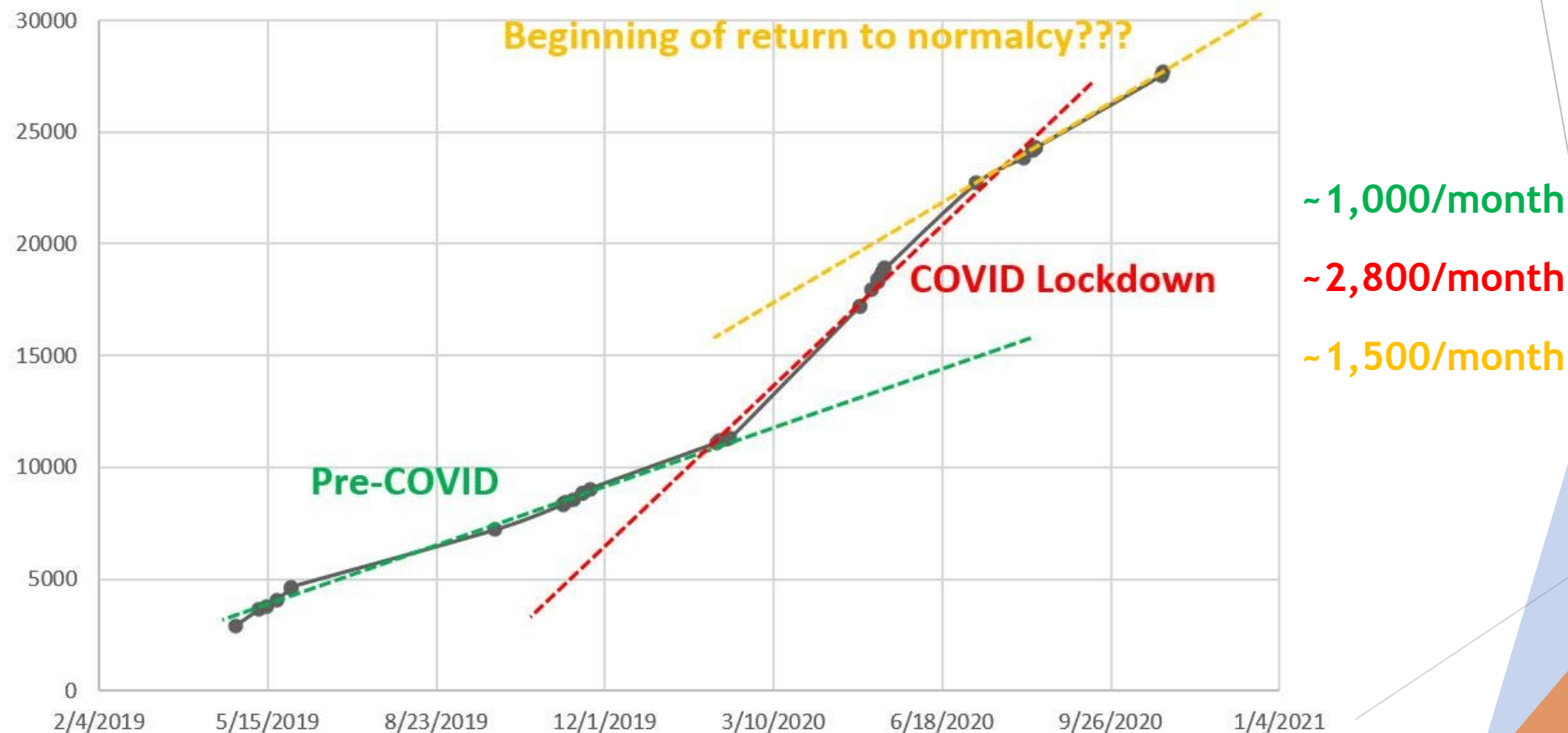NIEHS ➤ Last year 24 ➤ Next Year 22 -- funding probabilities will be similar expected

NIEHS ➤ Last year 24 ➤ Next Year 22 -- funding probabilities will be similar expected
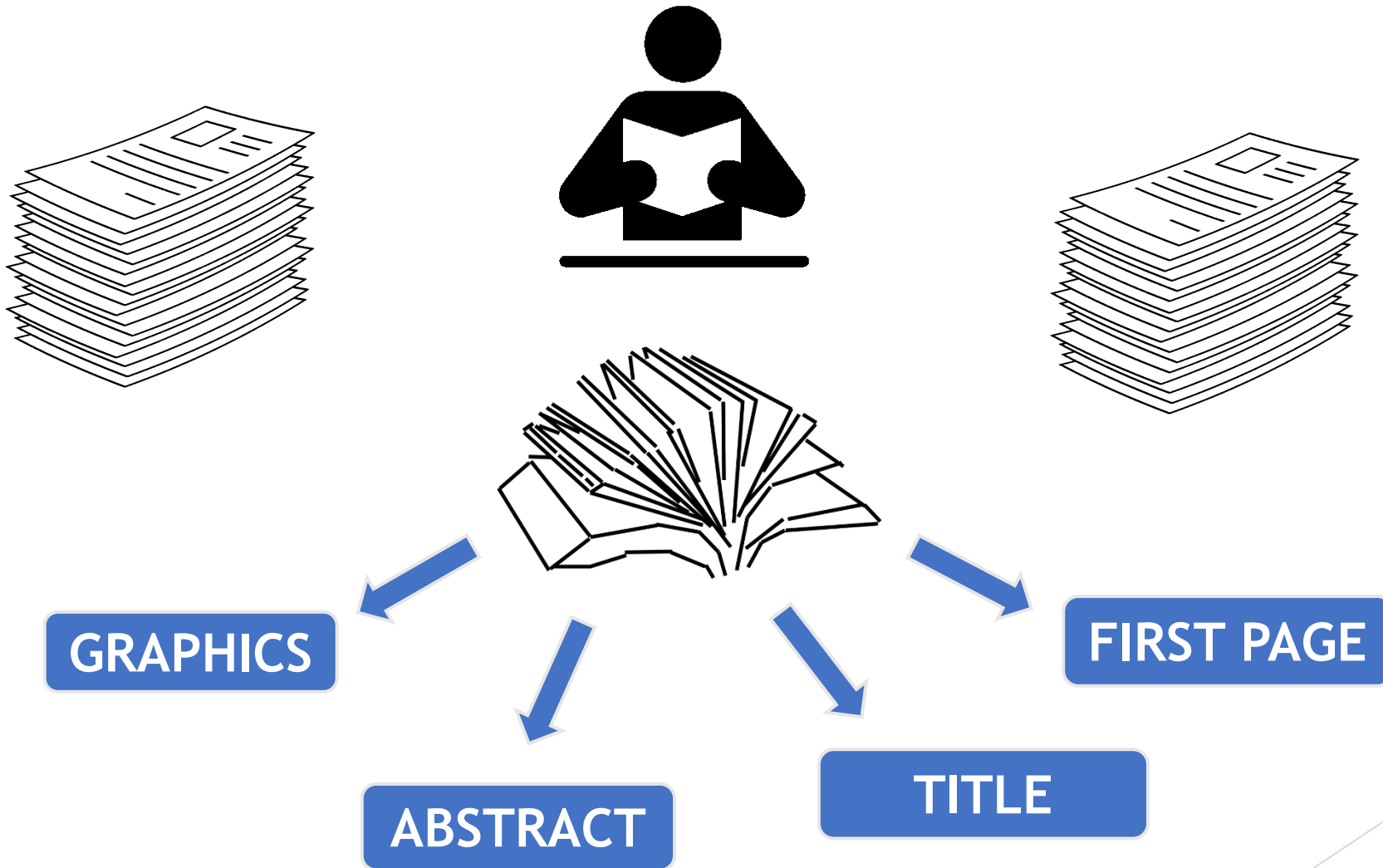
IMPACT OF SOLICITATION SCHEDULES

Jan › Feb › Mar › Apr › May › Jun › Jul › Aug › Sep › Oct › Nov › Dec › Jan

NSF PHASE I SBIR APPLICATIONS: DOES TIMING IMPACT SUCCESS?

	DEC 2015 DEADLINE	JUNE 2016 DEADLINE	DEC 2016 DEADLINE	JUNE 2017 DEADLINE
	835	1239	979	1157

InteliSpark
www.InteliSpark.com   Helping innovative companies secure non-dilutive funding through the SBIR & STTR programs

THE WORLD IMPACTS PROPOSAL VOLUME

NSF SBIR/STTR Project Pitch Number by Date

Beginning of return to normalcy???

Pre-COVID

COVID Lockdown

~1,000/month

~2,800/month

~1,500/month

NOW WRITE | *Writing an SBIR/STTR Proposal*

UNDERSTANDING REVIEWER'S POINTS OF ENTRY

GRAPHICS

ABSTRACT
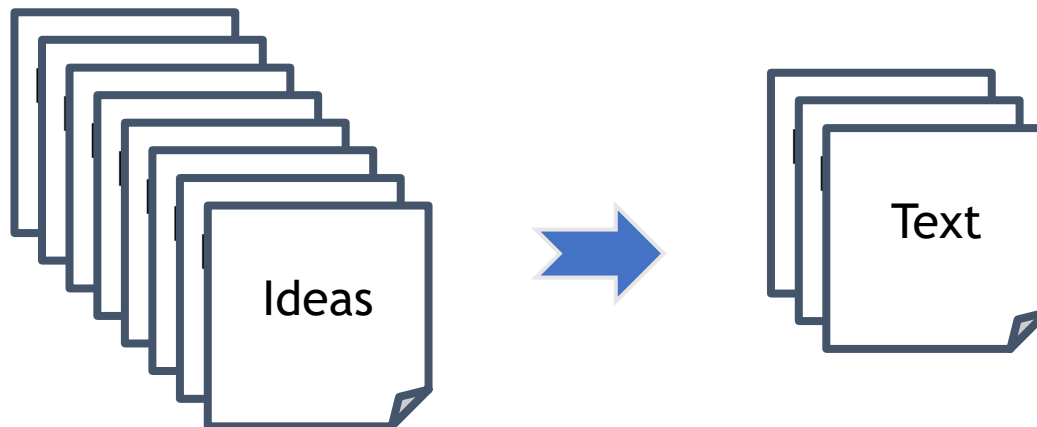
TITLE

FIRST PAGE

RESEARCH PROPOSAL WRITING

HOW YOU ARE TAUGHT TO WRITE IN SCHOOL
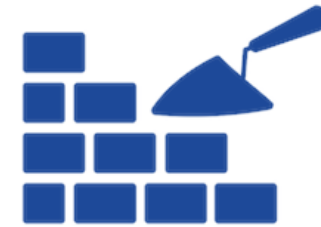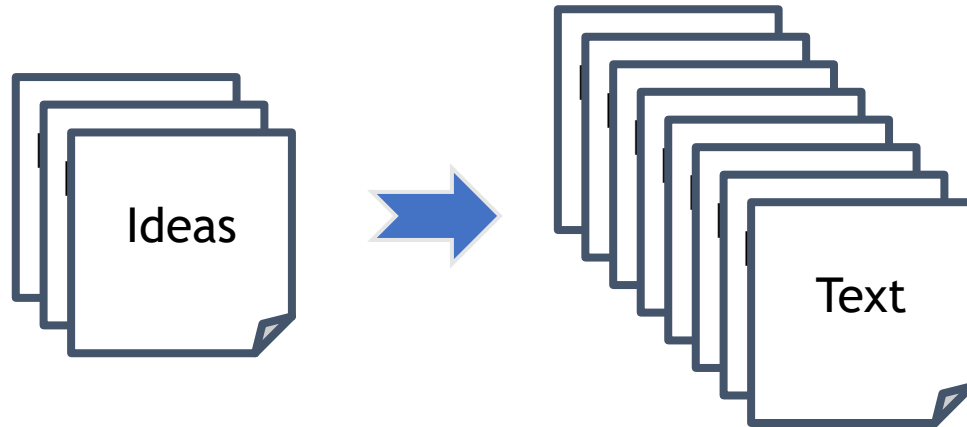
EFFECTIVE RESEARCH PROPOSAL WRITING

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.
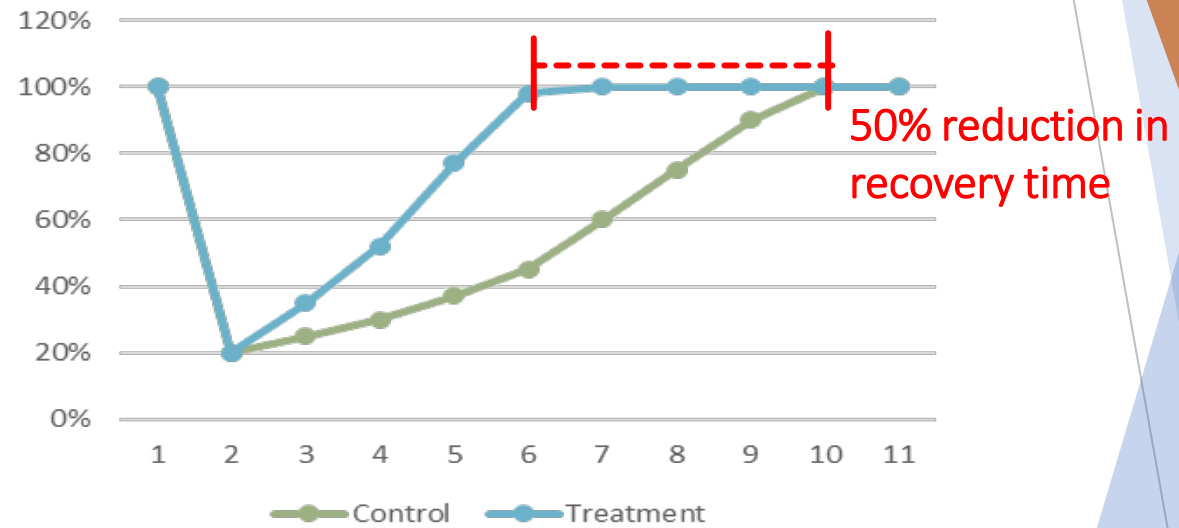
CONTROL THE NARRATIVE

FUNCTIONAL ABILITY

FUNCTIONAL ABILITY

50% reduction in recovery time
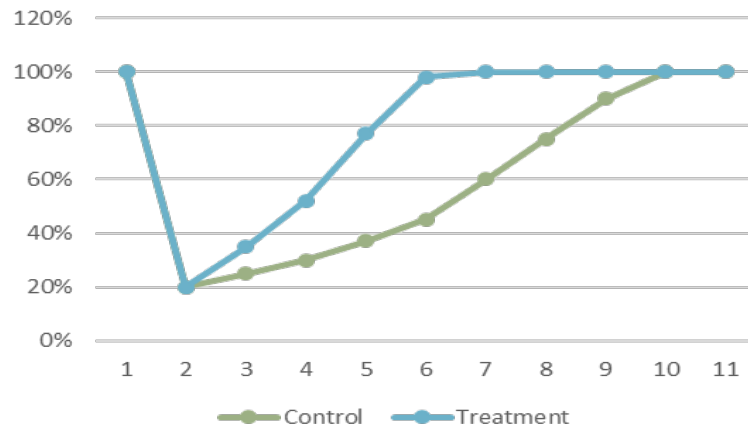
PHASE II IS EVERYTHING| *Winning a Phase I makes your mom proud of you, winning a Phase II changes the value of your company*

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

MINIMAL ← → VERY

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
America's Seed Fund

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

+

SBIR·STTR
AMERICA'S WART REMOVAL LOTION FOR START-UPS

=

- 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

FAMOUS SBIR COMPANIES

Market Cap: $100B

Market Cap: $15.64B

Market Cap: $25.44B

Market Cap: $1.5B

None received more than $9 million in SBIR/STTR funding
Total combined funding less than $20 million
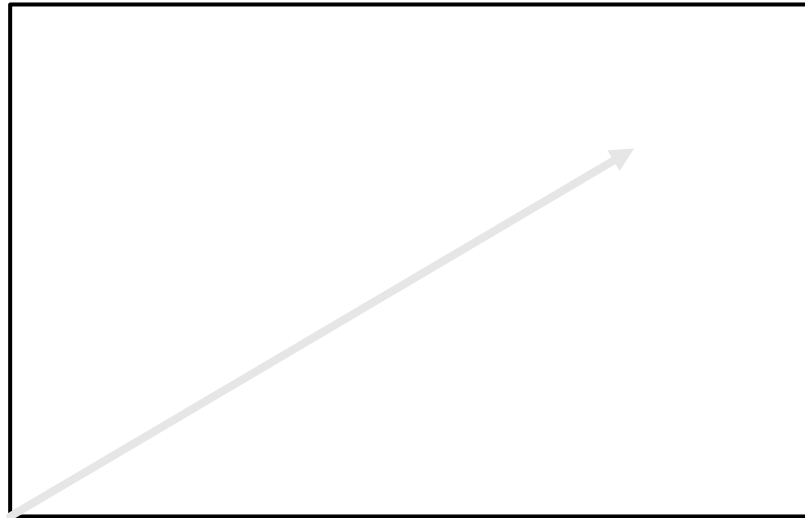
SUCCESSFUL COMPANY COMMON THEME
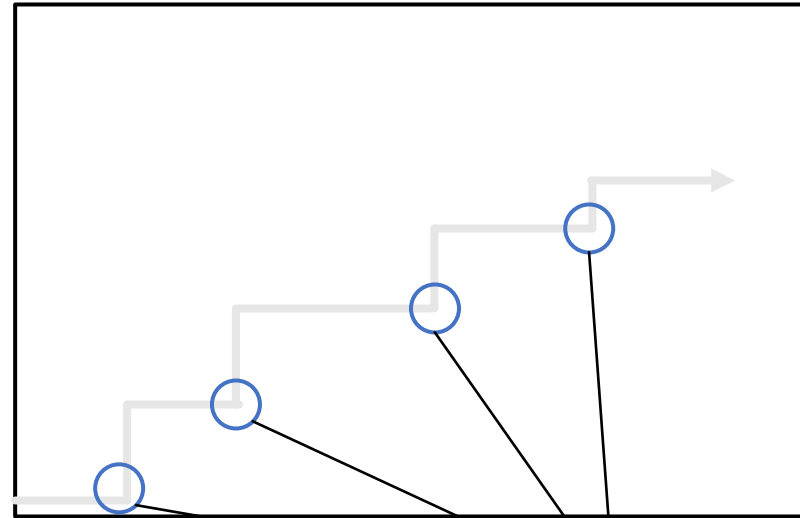
RAISE MONEY FROM POSITION OF STRENGTH
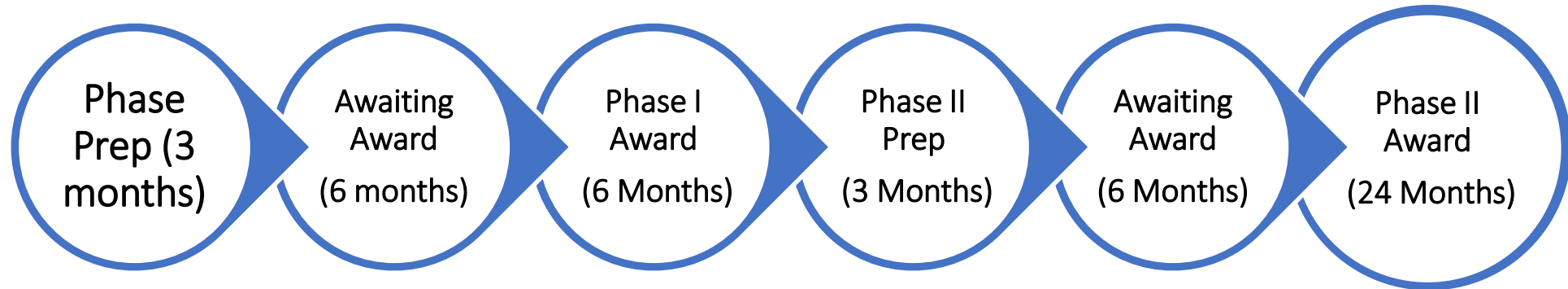
UNDERSTAND THE STEP FUNCTIONS

RARE

TYPICAL

Inflection 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

Phase Prep (3 months) → Awaiting Award (6 months) → Phase I Award (6 Months) → Phase II Prep (3 Months) → Awaiting Award (6 Months) → Phase II Award (24 Months)

← **3.5-4 Year Process** →

OTHER ISSUES

- Government Data Rights

- Government Accounting Rules

- Reporting Requirements

- Cashflow Issues (most awards work on reimbursement basis)

- SBIR/STTR funding is sloooooooooow!!!

- Relying Solely on Government Grants is a Bad Strategy

THE END | *Questions?*

WANT TO SCHEDULE A 1-ON-1?
https://calendly.com/intelispark/intro

Thank you!

▶ Please answer the Zoom poll question.

▶ Recording will be sent tomorrow.

▶ Don't forget to connect with us on LinkedIn.

▶ See you next week for

Week 5: June 30

Grant Budget Basics – Managing Your Award Like A Pro

Jaron Kuppers, Amala Consulting

SUNY STARTUP
SUMMER SCHOOL