



# **Supplemental Opportunity for SBIR/STTR Memberships in IUCRCs: Evaluation of Impacts on SBIR/STTR Firms**

*Based on Draft Report*

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*Denis Gray*

*Drew Rivers*

*Lindsey McGowen*

*Lena Leonchuck*

*Tim Michaelis*

*IUCRC Evaluation Project*

*North Carolina State University*

# Overview

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- Background on Supplement
- Evaluation Objectives and Strategy
- Objective 1 & 2 Reprise on Findings
- Objective 3 Methodology and Findings
- Conclusions and Recommendations

# Background on the “SBIR Supplement”



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- Supplemental funding opportunity first announced in 2007 (updated in 2008, 2009): An experiment
- Objective stated as:
  - *The supplements are intended to accelerate the innovation process by partnering industry-relevant academic research with commercialization focused small business research.*
- Invited active Phase II (IIB) SBIR/STTR awardees to request a supplement they could use to join an I/UCRC (including graduated I/UCRCs)
  - NSF would pay all but \$5k of membership for 2 years or 2 x 1 year
    - Intention was to allow 2 years via SBIR and 2 years via IUCRC? (Larsen)
- As of 2013 72 SBIR/STTRs have taken 124 membership years in 26 Centers
- 2012 Cost of program is: ~ \$805K
- Total cost of program is: ~\$4.45M
- No systematic evaluation up to this point



# “Theory of Change” for Supplement

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## Need-Based

- Most supplements aim to address a program-specific or Foundation-wide need
- Many Foundation-wide
  - REU/RET/REV
- Typically direct provision of resources
  - CAP for SBIR/STTR; CLB
- Little systematic evaluation



**Incremental Program Innovation**

## Synergy-Based

- Within-program supplement for awardees in 2 programs
- Similar goals, different partners and complementary innovation stages
- *Mutual exchange* of resources and services



**Combinatorial Program Innovation**

# Combinatorial Innovation

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- Innovation Theory:
  - *Combinatorial innovation*: innovations that are created by combining features or elements of two or more existing technologies (Varian, Farrell & Shapiro, 2004).
    - Adjacent possible: proximity often plays a role
  - Einstein: “Combinatorial play seems to be the essential feature of productive thought”
  - Examples: printing press (screw press for wine making + metal type); double-entry accounting; air conditioning
- Questions:
  - Can we produce innovative STI programs by combining the features of two or more existing organizational innovations?
    - Can we avoid combinatorial chaos?



# STI Programs and U.S. Innovation Ecosystem

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FEDERAL CSC LINKAGES

STATE CSCs LINKAGES

**FEDERAL NSF PROGRAMS**

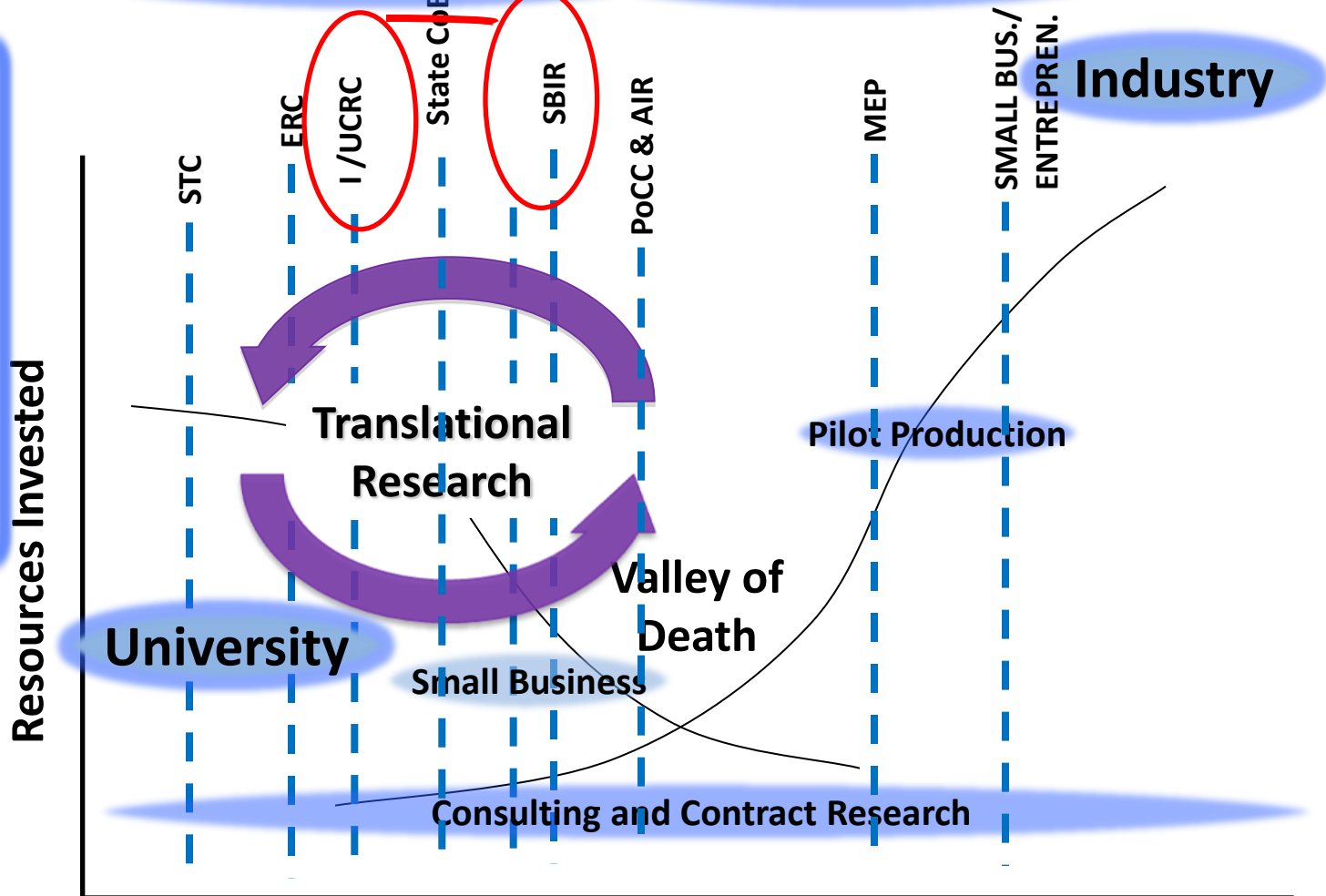
- STC
- ERC
- I/UCRC
- SBIR/STTR

**STATE PROGRAMS**

- State CoEs
- MEP
- BUS. DEV. & ENTREPREN.

**EMERGENT PROGRAMS**

- PoCC & AIR



# Overview of Evaluation Objectives and Methodology



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**Goal:** Evaluate the impact of the *SBIR/STTR Membership in I/UCRCs Supplement* on IUCRC and SBIR/STTR programs

Study Stage	Knowledge objectives	Data source
<b>Objective 1</b>	Assess the impact of the SBIR/STTR I/UCRC Membership Supplement on the I/UCRC membership profile	Secondary data available on I/UCRC memberships 2008 – 2013 Secondary data on SBIR/STTR firms participating in the supplement opportunity 2008 – 2013 Secondary data available through an online industry database (i.e., Hoovers)
<b>Objective 2</b>	Assess the reactions of center and site directors in the I/UCRC program regarding their experiences with SBIR/STTR firms as members in their center under the I/UCRC membership supplement.	Online survey feedback from center and site directors with experience recruiting SBIR/STTR firms for center membership
<b>Objective 3</b>	To understand the outcomes and impacts of participation in an I/UCRC for SBIR/STTR supplement members	Structured phone interviews with SBIR/STTR firm representatives (qualitative and quantitative)

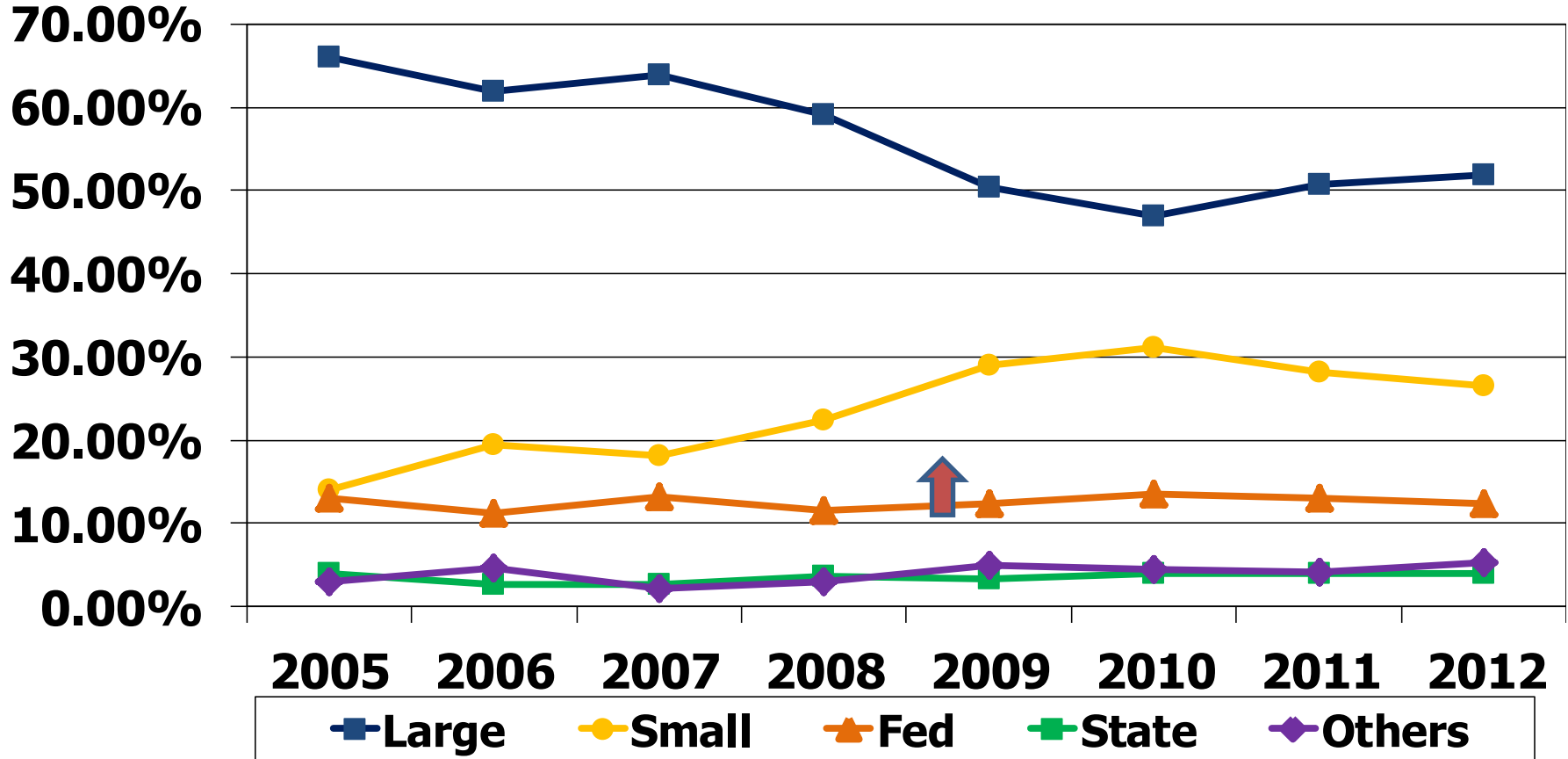


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# SBIR Impact on Member Composition

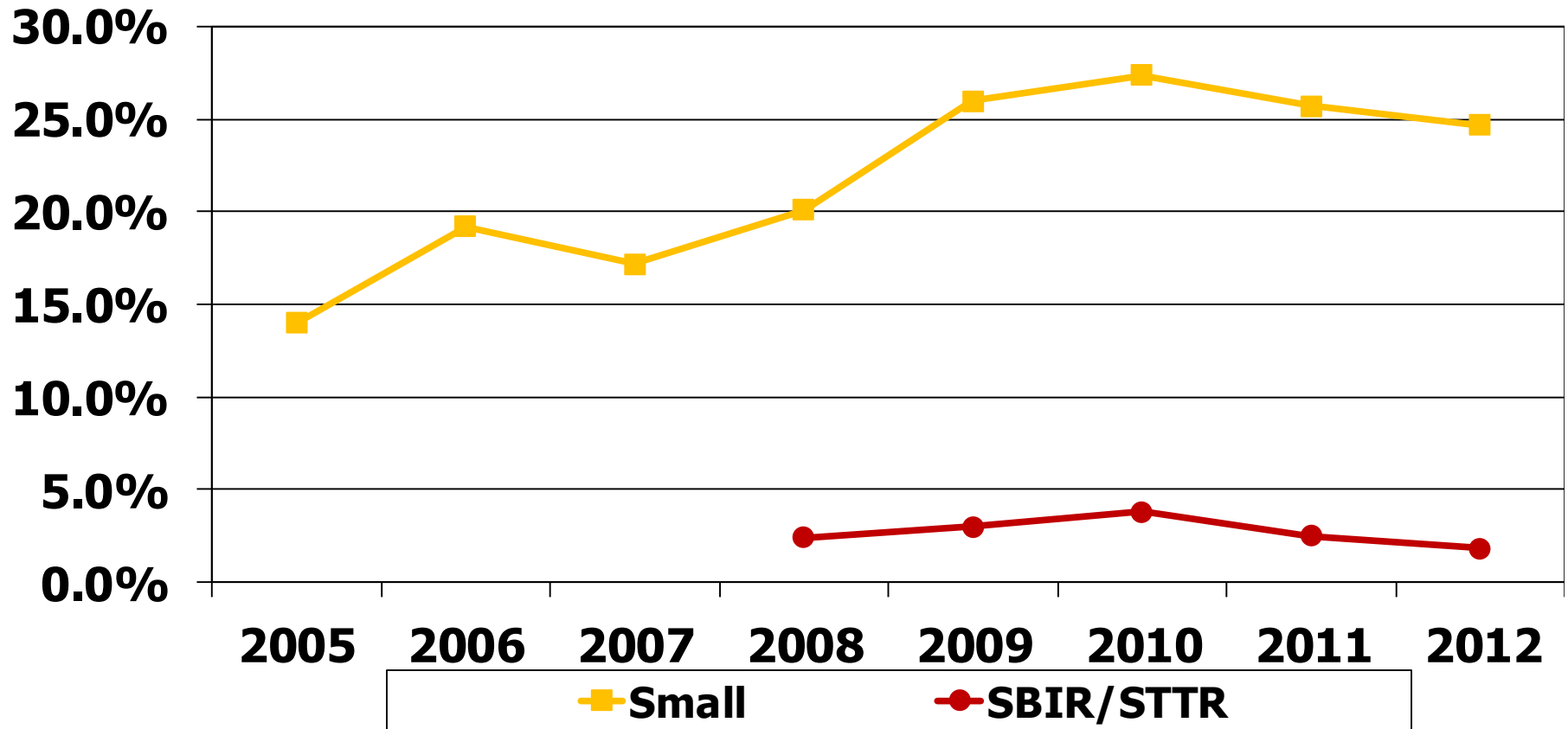


# Member Composition 2005-2012 : Percentage of All Members



^ Categories comprising Others include: non-profit, non-US government, and other organization

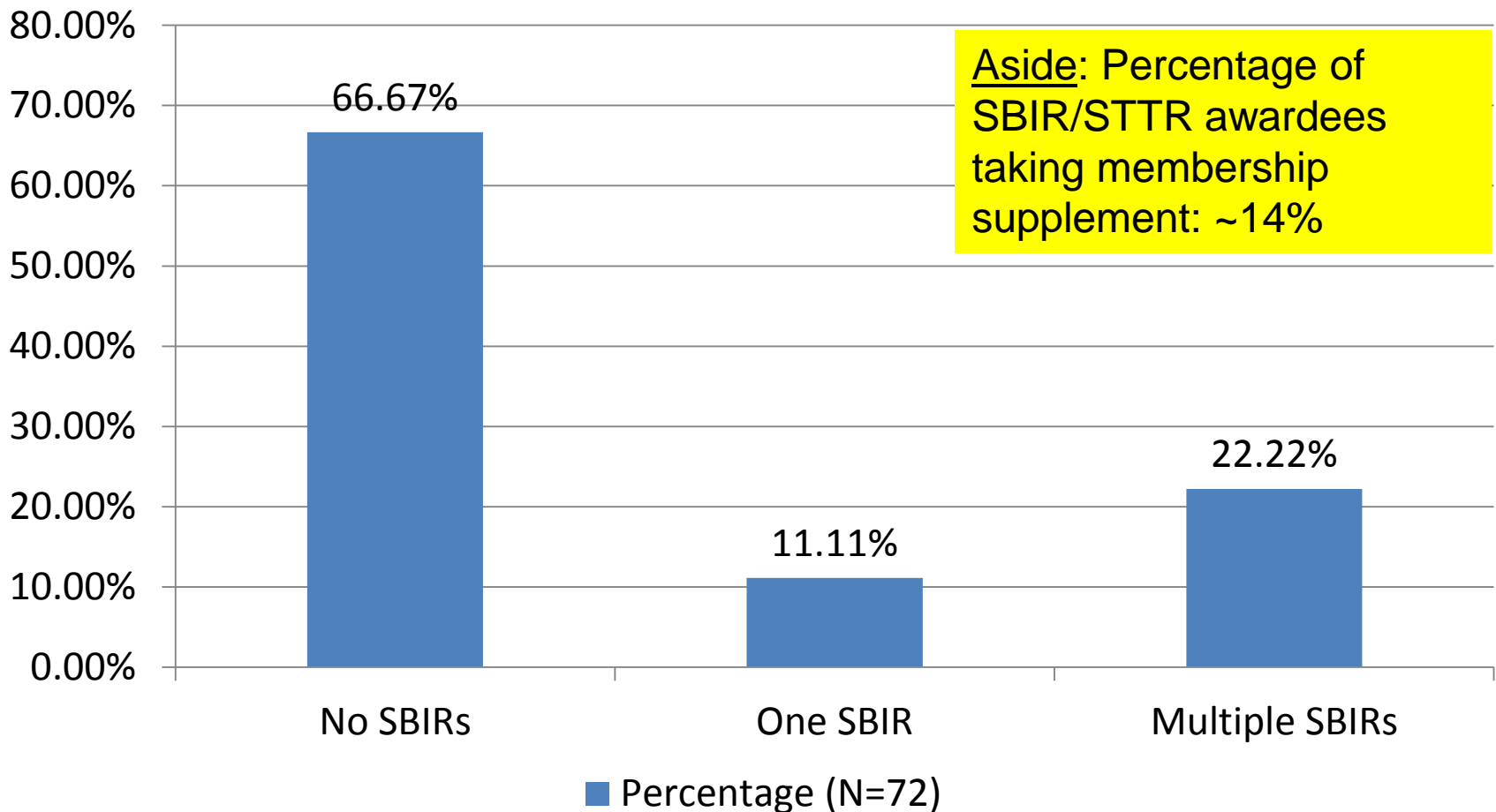
# Member Composition 2005-2012: Small & SBIR/STTR Only



# Percentage of Centers with SBIR members



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# Comparing SBIR vs SB Members

	Small Business	SBIR/STTR	Sig.
Annual Sales	\$10.79M	\$3.05M	$F = 10.51(p < .05)^*$
N of Employees	63	22	$F = 28.21(p < .01)^*$
Year Founded	1993	1999	$F = 7.75(p = .06)^{\wedge}$
Women/Minority Owned	9(14.8%)	17(27.4%)	$\chi^2 = 6.52(p < .05)^*$
Headquarters of a multi-site firm vs. Single Location	Headquarters = 15(24.6%)	Headquarters = 5(8.1%)	$\chi^2 = 6.97(p < .05)^*$
IP events/center	SBIR Membership		$\chi^2 = 3.2(p < .06)^*$

## Conclusions:

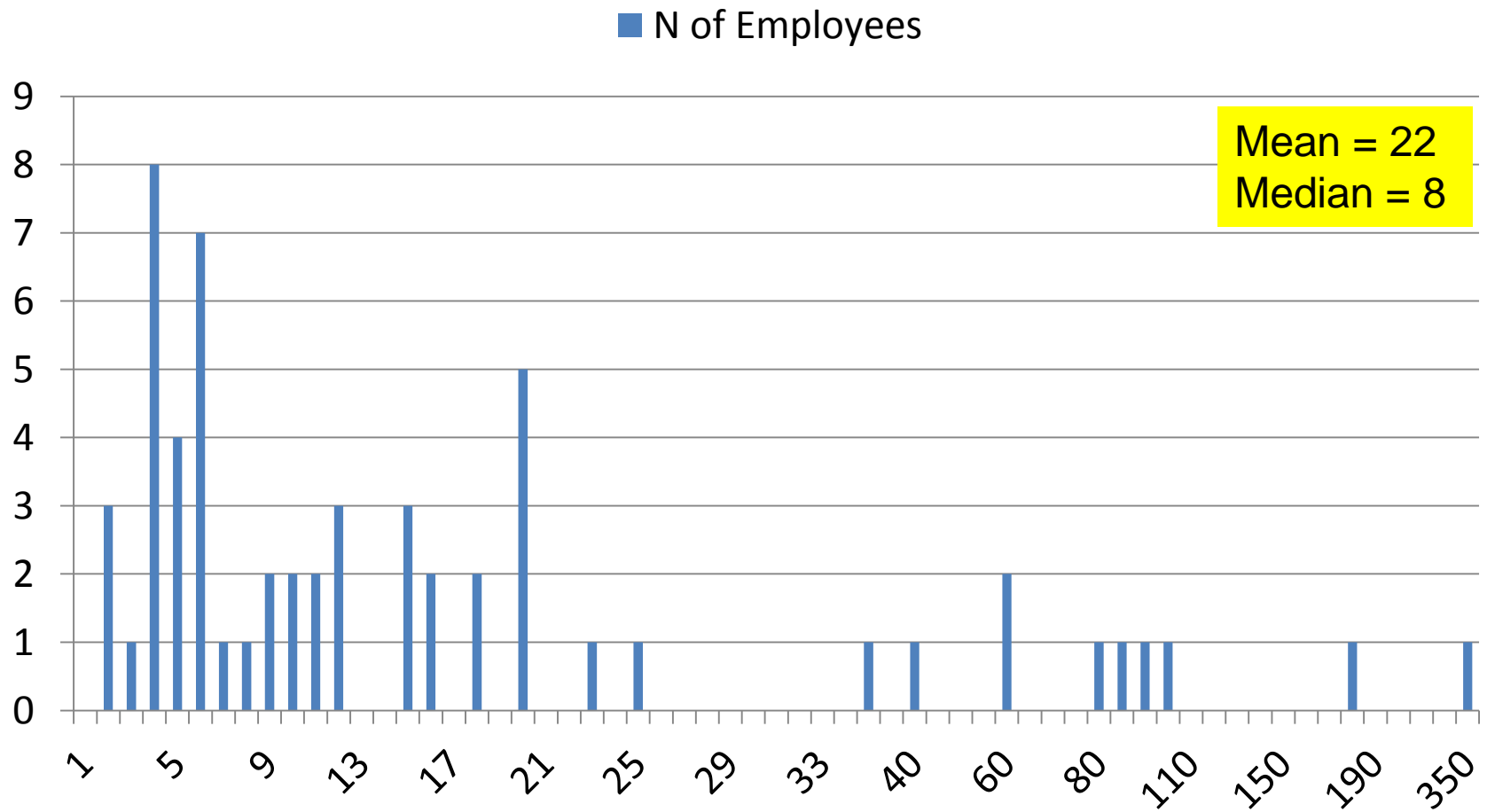
- **Caution data reflect current status not status when SBIR or supplement awarded**
- Experimental-scale deployment of supplement had a modest but noticeable impact on number of small firms in IUCRCs
- Did have a statistically significant impact on type of small firms: smaller, younger = start-ups, micro-enterprises
- IP active centers attract SBIRs



# SBIR/STTR N of Employees Distribution for 2012



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Mean = 22  
Median = 8



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# I/UCRC Director Perspectives

# Objective 2: Director's Assessment of SBIR Memberships

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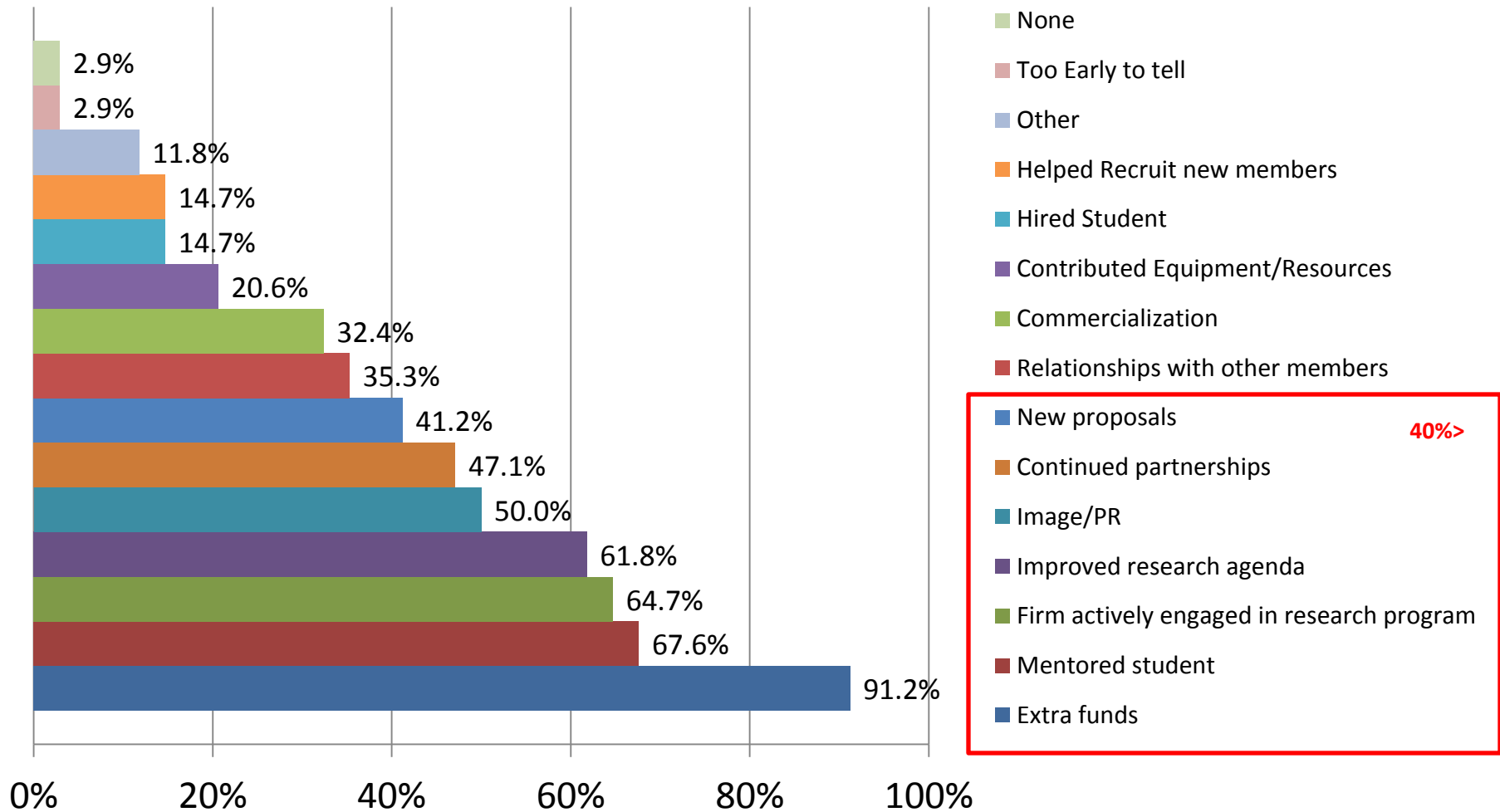
- Major Findings
  - *For those who found members, recruiting success rate was very high: 86% success vs. 30% success with 'typical' members*
    - *But we didn't survey centers with no supplements so ...*
  - *Members found via multiple channels: NSF (SBIR list); company contact; network*
  - *Memberships have multiple benefits*
  - *Memberships have some costs*



# Benefits of having an SBIR member



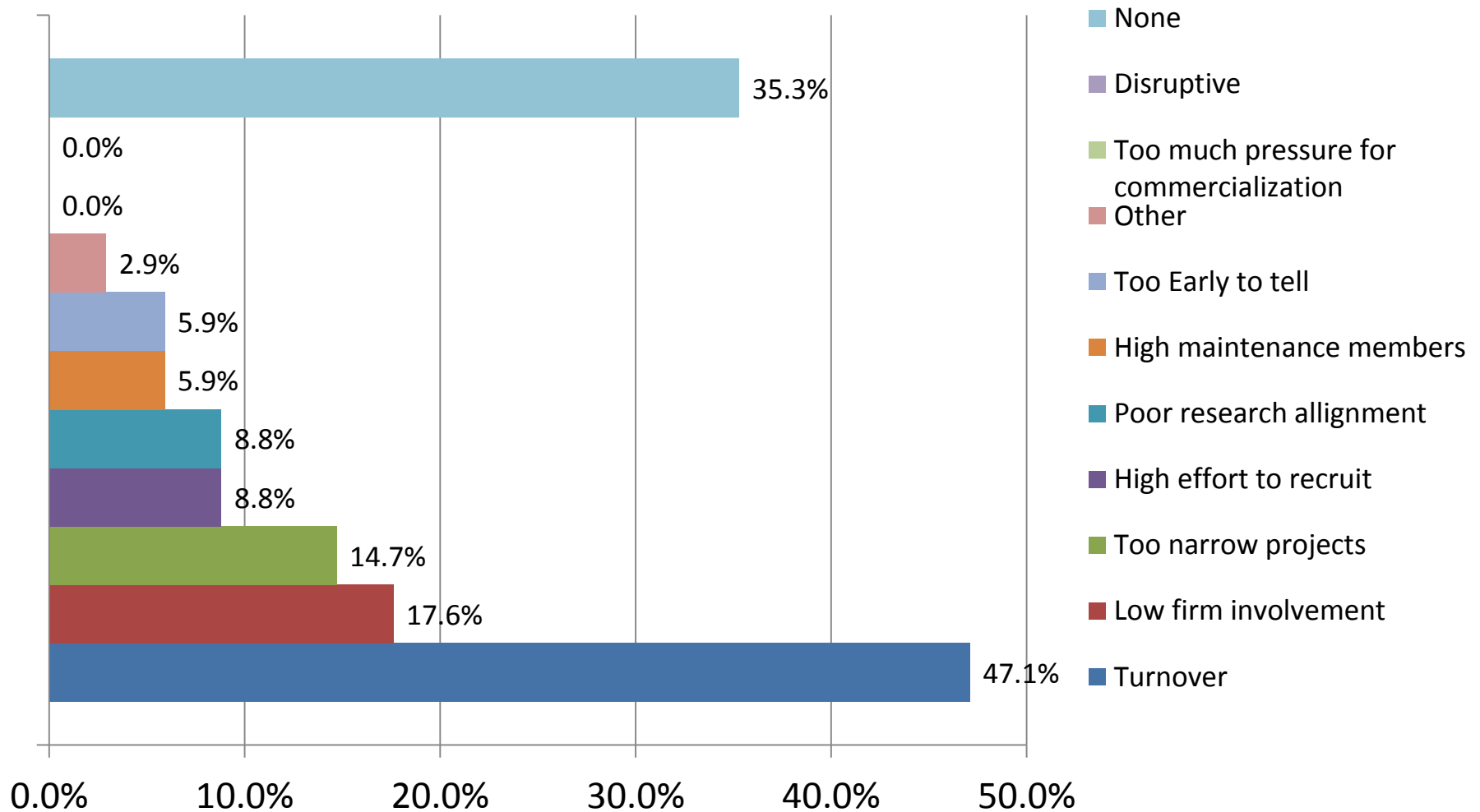
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# Costs of having and SBIR member



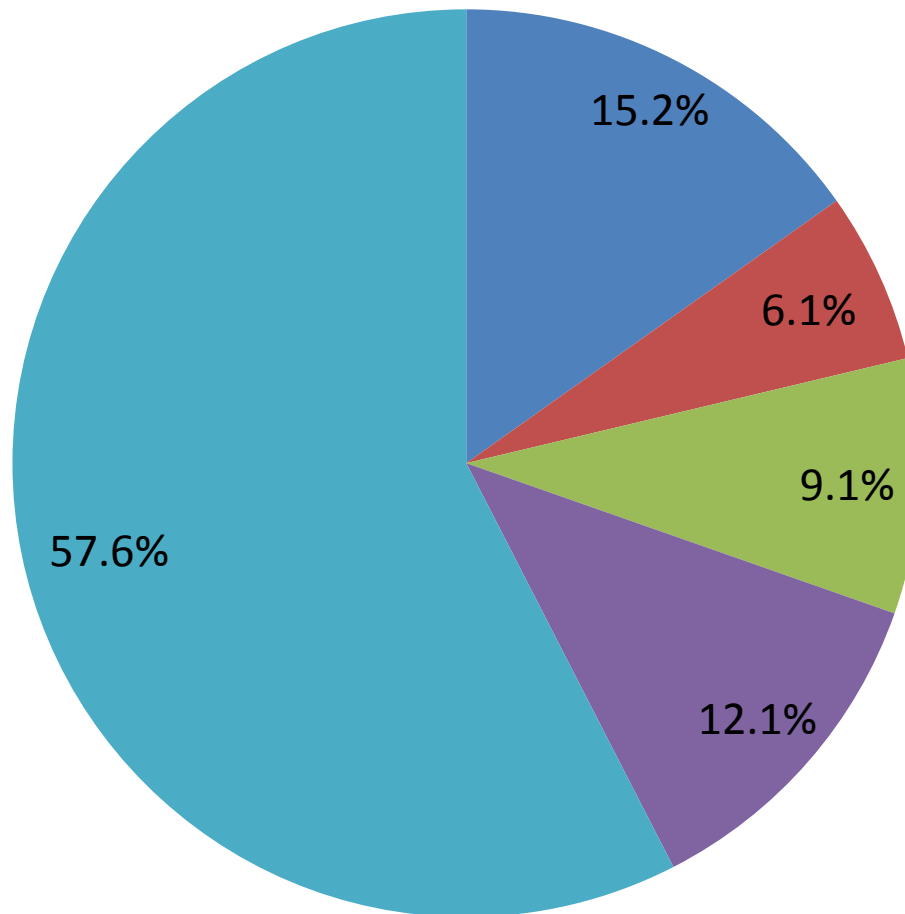
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# Likely to recruit SBIR/STTR again?



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Likely: 79.8%  
Undecided: 6.1%  
V. Unlikely: 15.2%

- Very Unlikely
- Undecided
- Somewhat Likely
- Likely
- Very Likely

# Objective 3: SBIR Assessment of Supplement

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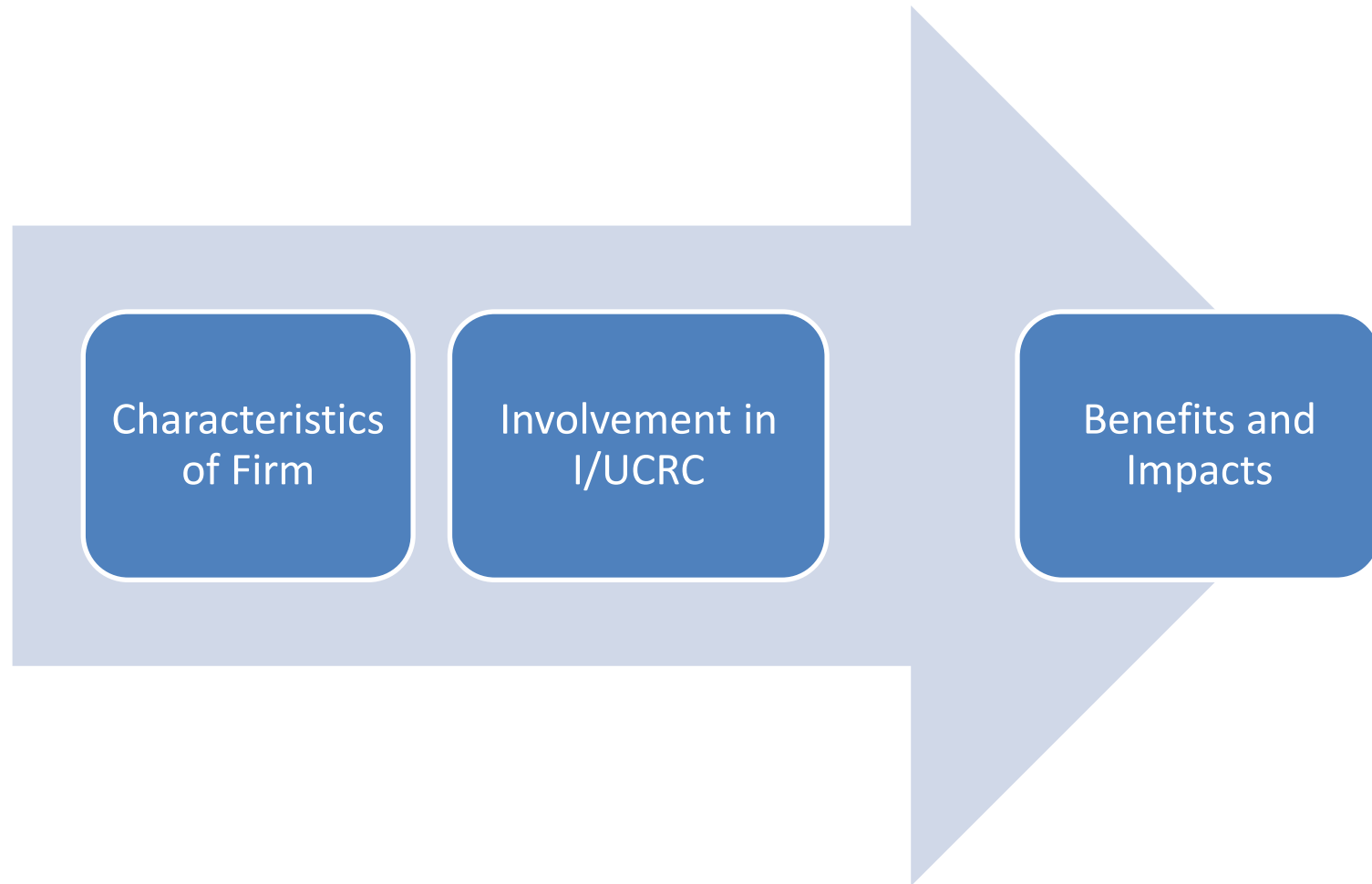
- Methodology
  - Data
    - Structured interview with IAB representative from SBIR firm (forced-choice and open-ended): 30 minutes
      - Qualitative and quantitative: lot of content analysis performed
      - Archival information on firm and SBIR abstract
    - Dimensions: background; recruitment process; meeting assessment; benefits (realized/anticipated); problems/negatives; continued membership; overall evaluation; recommendations
  - Sample
    - All SBIRs awarded effective fall 2013
    - Procedure: Letter from NSF/SBIR; Letter from Project Team; Email request to schedule telephone interview; Assignment to interviewers; Interview
    - Population:  $N = 72$
    - Sample: 61 or 82% response rate; 88% response rate (exclude out of business)

# Broad Conceptual Model

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# Some Firm Characteristics

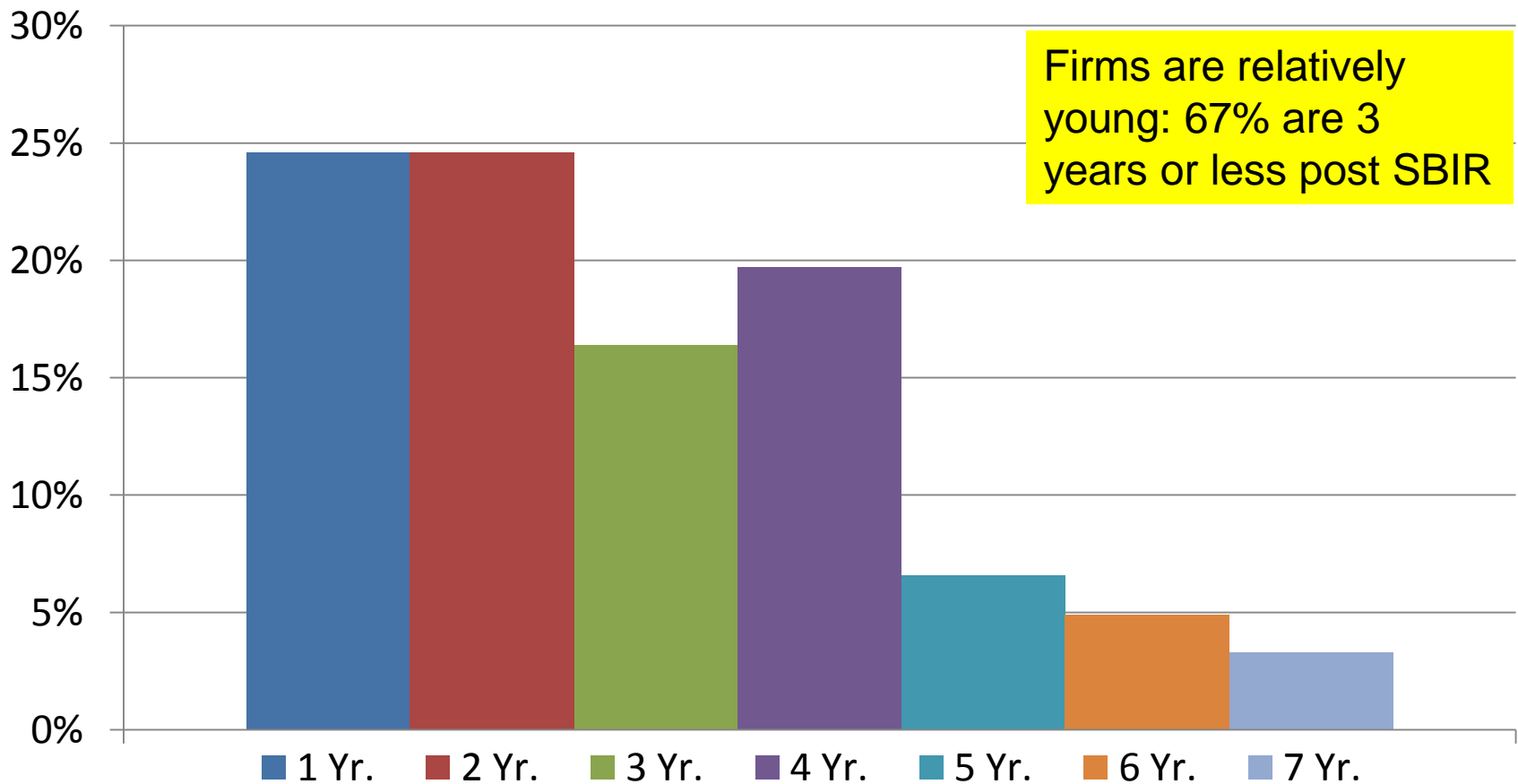
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- Still in business: 93.4%
- Number of employees: Mean = 26.8; Median = 10.5
- Previous university collaborations
  - Great deal: 56.7%
  - Fair amount: 41.7%
- Source for first contact with I/UCRC
  - Existing relationship: 29.2%
  - Center contacted firm: 29.2%
  - NSF: 25% (SBIR meeting mentioned)

# Years since SBIR/STTR award ended



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# Technical Alignment I/UCRC and SBIR/STTR Member Firm



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	N	%	Illustrative Comments
Not at all aligned	3	5.0	“ <b>we’re a small company looking for immediate results to benefit product lines</b> ”; “not much in common, approaches are different”
Moderately aligned	31	51.7	“Our core technology was different from the center's. It was more complimentary”; “ <b>center has one expertise but not necessarily the other one we need</b> ”; “other members into geoapplication ... we are into using for pattern recognition”; “the center is not focused on our applications per se although they are doing research which is related to our interests.”
Very well aligned	26	43.3	“center has diverse technologies and we are looking for one particular application that is very well aligned”; “ <b>center is very close to core technology ...other IAB members also aligned</b> ”; “they had a metal lab that allowed us to access some essential equipment”



# Likelihood Join I/UCRC Without Supplement



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	N	%	Illustrative Comment
Yes	3	4.9	“the supplement definitely helped but, Yes, we would have still joined due to the capabilities the center has”
Not Sure	7	11.5	“Center expertise was very attractive but we still had to put up some money and even this was a barrier at the time.”
No	51	83.6	“As a small firm we did not have the funds to join”; “probably not because the ROI is nebulous - hard to quantify the benefit”

Little evidence that supplement is “crowding out” private sector investment



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# SBIR/STTR Involvement in I/UCRC



# Attendance at IAB Meetings

	N	%	Illustrative Comments
Attended All	27	44.3	“During 2 year period, I attended all meetings in person”; “If the I could not attend, then someone else from the company would go. In some cases 2 of us attended.”
Attended Some	23	37.7	“direct conflict with a conference at which I was presenting”; “The reason for missing the meeting was primarily due to time lost from work”
Attended Some Remotely	6	9.8	“able to attend local meetings in-person; however, those out-of-state I could only attend via Skype or video call”
Did not Attend	5	8.2	“no budget to travel”; “we just got electronic files and reports from the center”

Meeting reaction generally positive (90%):

- Research updates
- Networking



# Interactions Outside of IAB Meetings

## Faculty and Students

	N	%
<b>Channel</b>		
Phone/Email	26	42.6
In Person	3	4.9
Both	30	49.2
None	2	3.3
<b>Frequency</b>		
A lot	17	28.8
A Moderate Amount	34	57.6
A Little	6	10.2
None	2	3.4

97%

## Other IAB Members

	N	%
<b>Channel</b>		
Phone/Email	8	13.6
In Person	6	10.2
Both	14	23.7
None	31	52.5
Missing	2	
<b>Frequency</b>		
A lot	4	6.6
A Moderate Amount	16	26.2
A Little	10	16.4
None	31	50.8

48%



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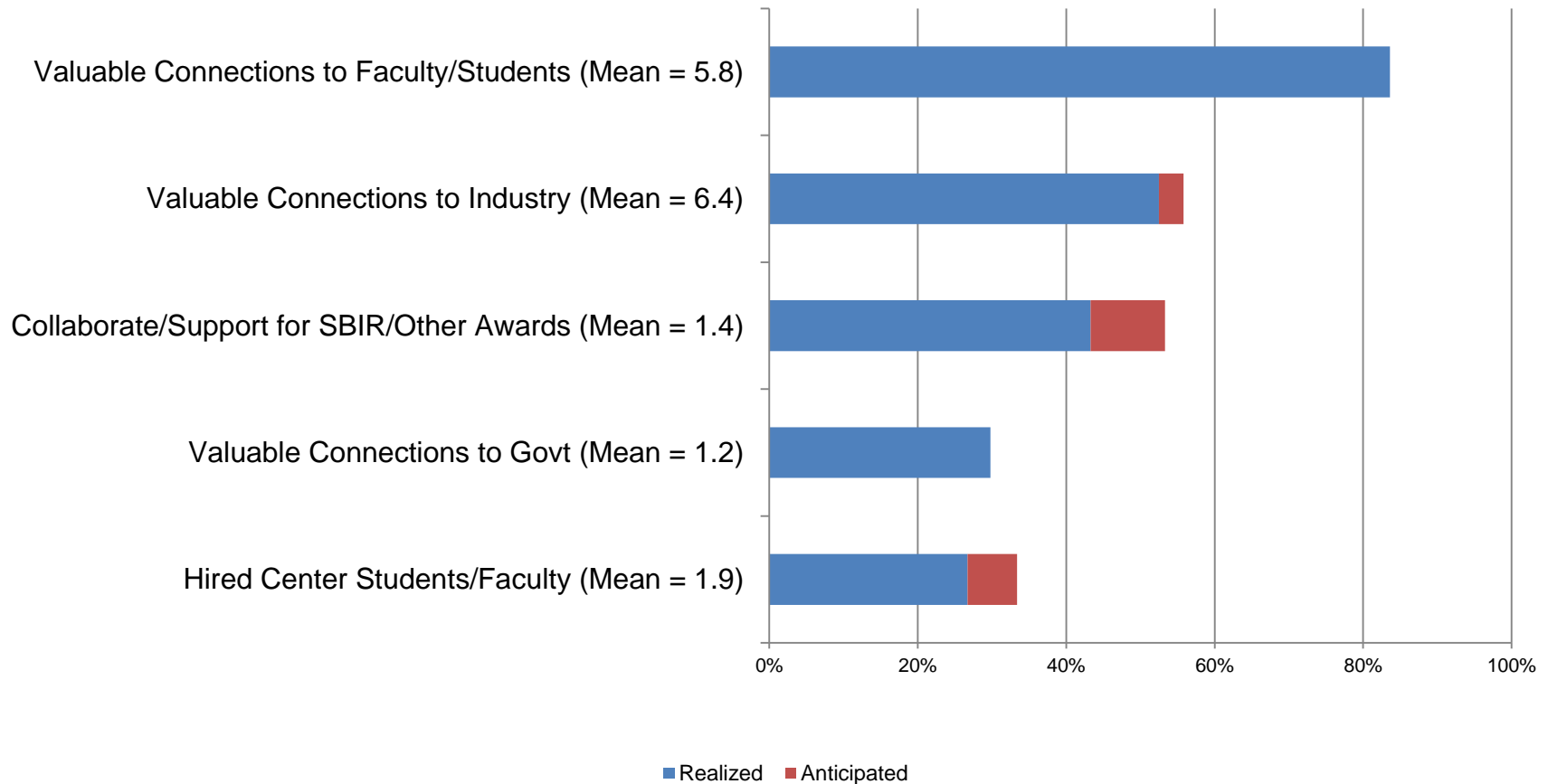
# Benefits and Outcomes

# Reported Benefits—Social Networking and Human Capital



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Networking Benefits Reported by SBIR/STTR Firms



# Reported Benefits—Social Networking and Human Capital



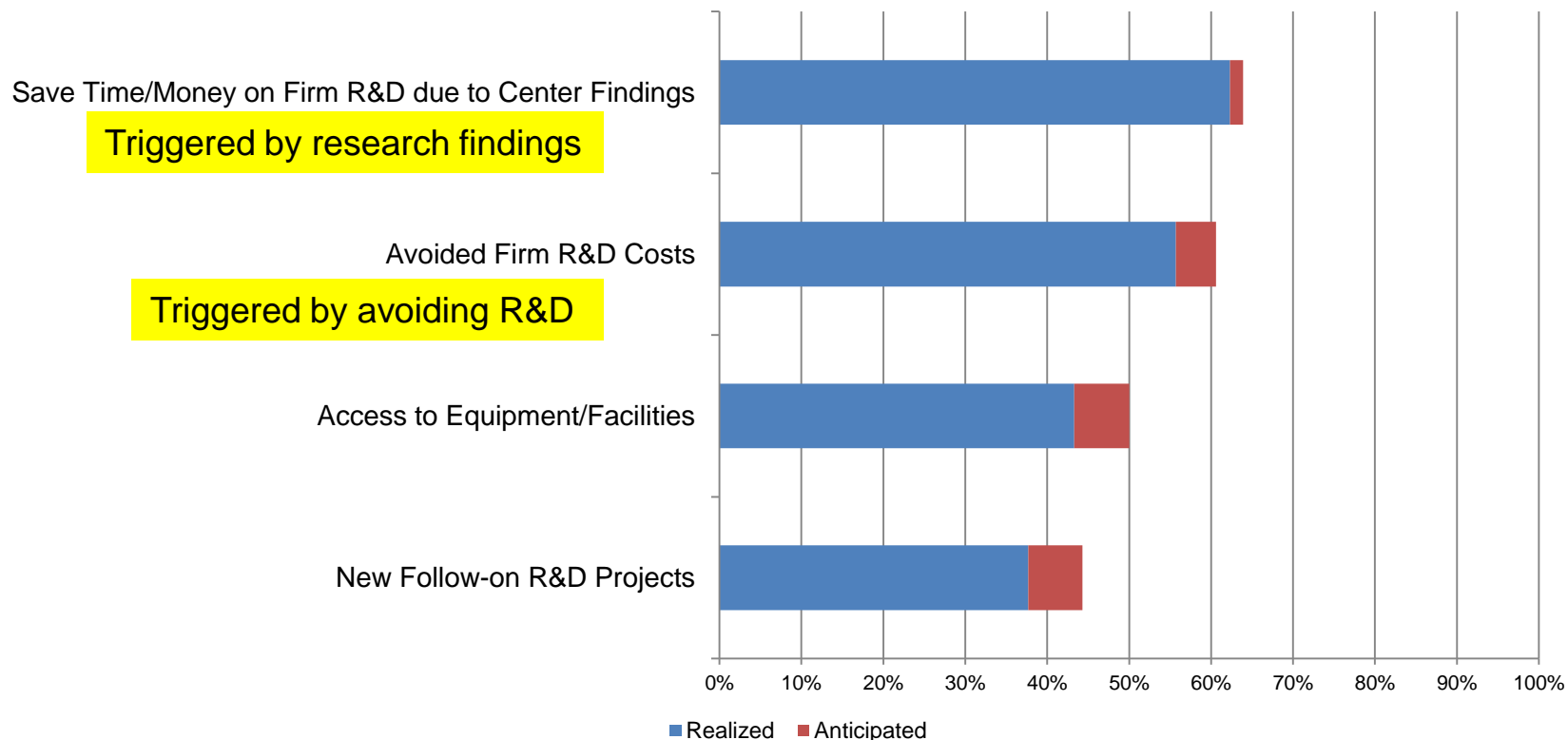
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Benefit	Illustrative Comments
Valuable Connections to Faculty/Students	“made great connections with several faculty and students”; <b>“working with director on several other projects”</b> ; “faculty has different expertise related to our interests”; “networking helped us win won a number of fed and private grants -income as a result of that”
Valuable Connections to Industry	“I met a lot of people, learned how the big firms do business”; “The networking opportunities were first and foremost”; “We were also able to contract with a key service provider. We also bought raw materials from a member” <b>“our company name spread through the network of large companies”</b> ; “established a partnership with another member”; “director introduced us to some investors”
Collaboration/ Support for SBIR/Other Awards	“we did write a proposal and the faculty helped evaluate and check our proposal”; “actively working on some new proposals with some of the faculty associated with the center”; <b>“Obtained letters of support from members for a successful DOE SBIR proposal”</b>
Valuable Connections to Gov’t	“developed new connections to... NSF, NASA, DoE, a National Lab, Army...”
Hired Center Students/Faculty	“around 2 or 3 employees hired”; <b>“hired one or two [students] each year”</b> ; “hired faculty as consultants”; “professor is a subcontractor”; “projects with faculty that involve supporting students”; “eight students hired”; “going to add 2 jobs next year.”



# Reported Benefits – R&D

### R&D Benefits Reported by SBIR/STTR Firms







# Reported Benefits – R&D

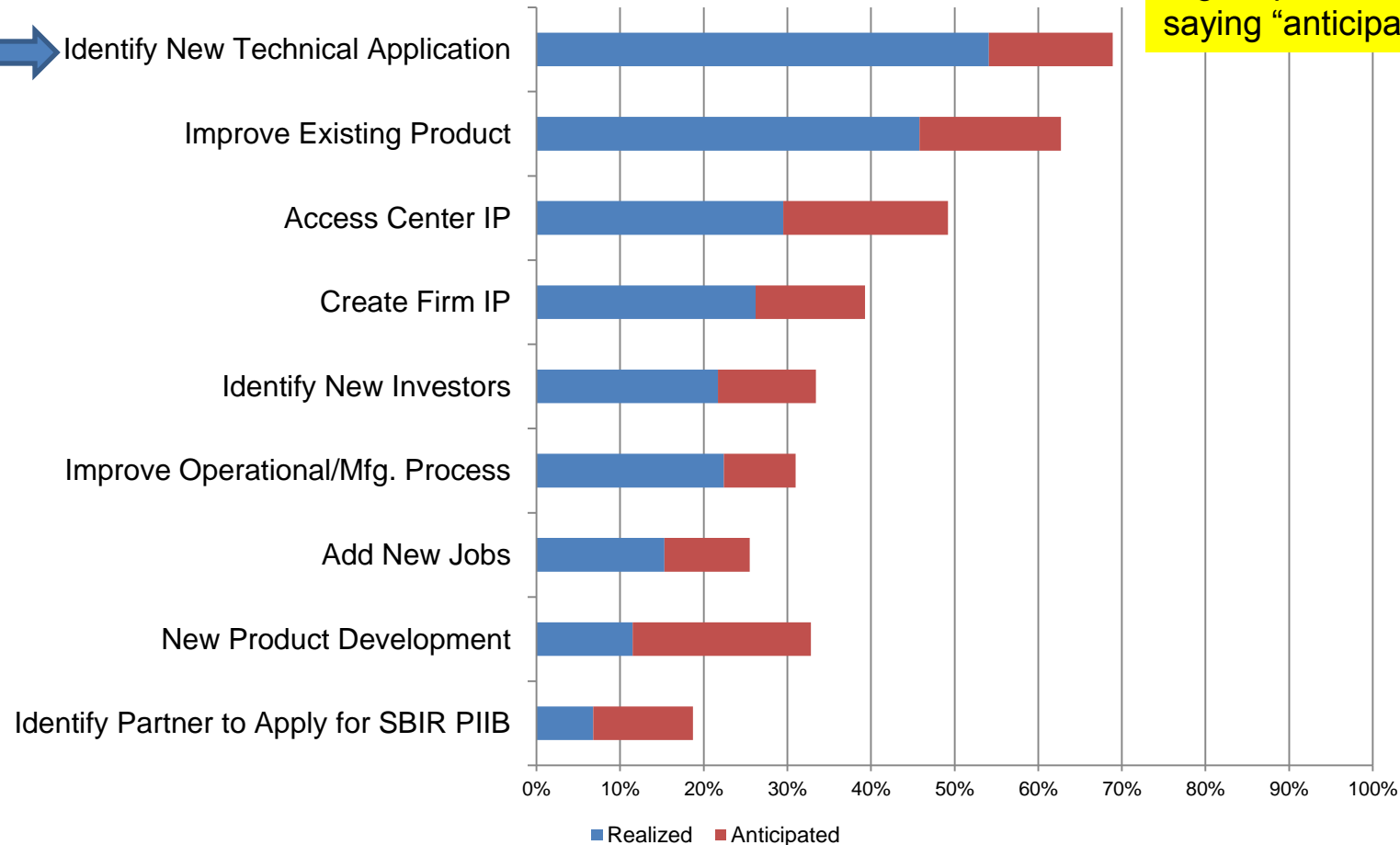
Benefit	Illustrative Comments
Accelerated R&D /Save Time Money	“we were investigating membranes and they helped us along - might not have looked at it without this collaboration”; “feasibility studies very useful to reduce risk of early ideas”; <b>“work accelerated our ability to resolve issues in product development”</b> ; “using their knowledge was big time saver”; “new testing methods - saved lots of time - and did it better”
Avoided Firm R&D Costs	“center was able to help identify the problem which helped the us to prevent extra costs”; <b>“thought something was a bad idea; it didn't work and reaffirmed”</b> ; “We could not have done this work internally”; “they did prototyping - we wouldn't have funds to do that”; “avoided unproductive research lines based on what we learned”; “they are doing research we couldn't”
Access to Equipment	“Tested performance and learned we did not want to invest in this instrument. Saved us time and money”; <b>“had specialized equipment we couldn't possibly afford”</b> ; “helped center acquire some equipment we were using”; “a device designed for us would have cost too much to do ourselves - the R&D opportunities we've seen that we wouldn't have addressed”
New Lines of Research	“far more important than saving \$ on R&D - growth of the company”; “has taken us in a different application direction than they had previously”; “stimulated ideas for our work developing imaging technology”; “now that we know this is possible [new direction], we are trying to explore on our own”; <b>“directions of the research within firm has changed because of center”</b> ; “Center has helped to confirm new directions in sensors- influenced research strategy”
<b>Augmented our R&amp;D</b>	“more augmented our R&D”; “we augmented rather than avoided costs”; “would not have been able to evaluate technology without their resources and knowledge”; “we did not have R&D without this”; <b>“they are doing research we couldn't”</b> ; “they are doing the software development we couldn't do”; “exploring projects internally we would never have explored otherwise”; “got additional R&D outside what we do normally, we wouldn't have done it ourselves”






# Reported Benefits -- Commercialization

Commercialization Benefits Reported by SBIR/STTR Firms





# Reported Benefits -- Commercialization

Benefit	Illustrative Comment
Identify new technical application	<p>“possibility of new factory related chemistry process”; <b>“didn’t realize our technology had a more important application involving measuring contaminants in materials”</b>; “translated our technology to another sector”; “their technology allow us to access broader market”; “identified new way of interaction between user and device”; “found our technology was more powerful than we initially thought (for new application)”; “may allow technology to work under different conditions”; “two IAB members can use our technology (in a way we didn’t anticipate)”; “applicability of our additives to a new different type of material”;</p>
Improve existing product	<p>“improved the technique”; “part of product was improved with faculty help”; <b>“understand device landscape and made adjustments to meet”</b>; “indirectly helped to improve products”; “upgrade their product”; “characterization allowed improvement”; “using laser welding based advice and expertise of center”;</p>
Access Center IP	<p>“it showed improvement but we didn’t use it”; <b>“integrated center technology into our product”</b>; “a component came out of proposed project”; “technology was perfect for us”; “licensed their software”; “now in our software product”; “IP filed that we hope to use”; “their IP developed and improved testing methods”; “IP related to additives in a material”;</p>
Create Firm IP	<p><b>“center research has led to a pending patent with university”</b>; “we take what they do and modify to improve our product”; “yes, but difficult to attribute to center”; “filed for some patents”; “our IP enhanced by center research”; “validated our IP in their lab”; “anticipate some disclosures”; “may influence our IP”: “provisional patent filed”;</p>
Identify new investors for firm	<p><b>“one for certain and four probable investors”</b>; “one tied back to new application of our technology”; “got support from other manufacturers”; “member firm will act as our distributor”; “military group funded us”; “two potential investors”; “promising but too soon to tell”; “no investment yet but interest.”</p>
Improve operational/mfg. process	<p>“improved internal product development process”; <b>“new approach for prototyping is ground-breaking”</b>; “collaboration with company will lead to new sensor technology with huge benefit”; “on hardware side we are improving manufacturing”; “testing and lab work helped work more effectively with manufacturers”; “yes, through new test method”;</p>
Add new jobs	<p>“got exposed to student we hired”; “hired two new interns per year”; <b>“hired around 2-3”</b>; “will add two jobs next year”; “more maintained jobs we already had”; “new Army project will result in five new hires”; “yes, all people here result of fact they helped us get VC support”</p>
Launch new product/service	<p><b>“actually new services launched”</b>; “if results of current work is positive we will”; “yes, a new prototyping method”; “attempted to launch a new product”;</p>
Identify investor to apply for SBIR PIIB	<p><b>“got letter of support on project”</b>; “got a different Phase 1 award”; “prototype attracted an investor”; “in the talking stage”; “yes but after the grant was over”; “in process but not realized yet”; “tried but ran out of time to apply.”</p>
<p><b>Market intelligence</b></p> 	<p>“[advice] expanded market”; “good suggestions for transferring product to market”; “helped market map some potential new applications”; “translated technology into other markets”; “got information about the market potential of our technology”; <b>“helped reposition to new markets”</b>; “better understanding of the market which led to new spheres of research”; “changed marketing to new target”; “business contacts helped us identify new markets”</p>

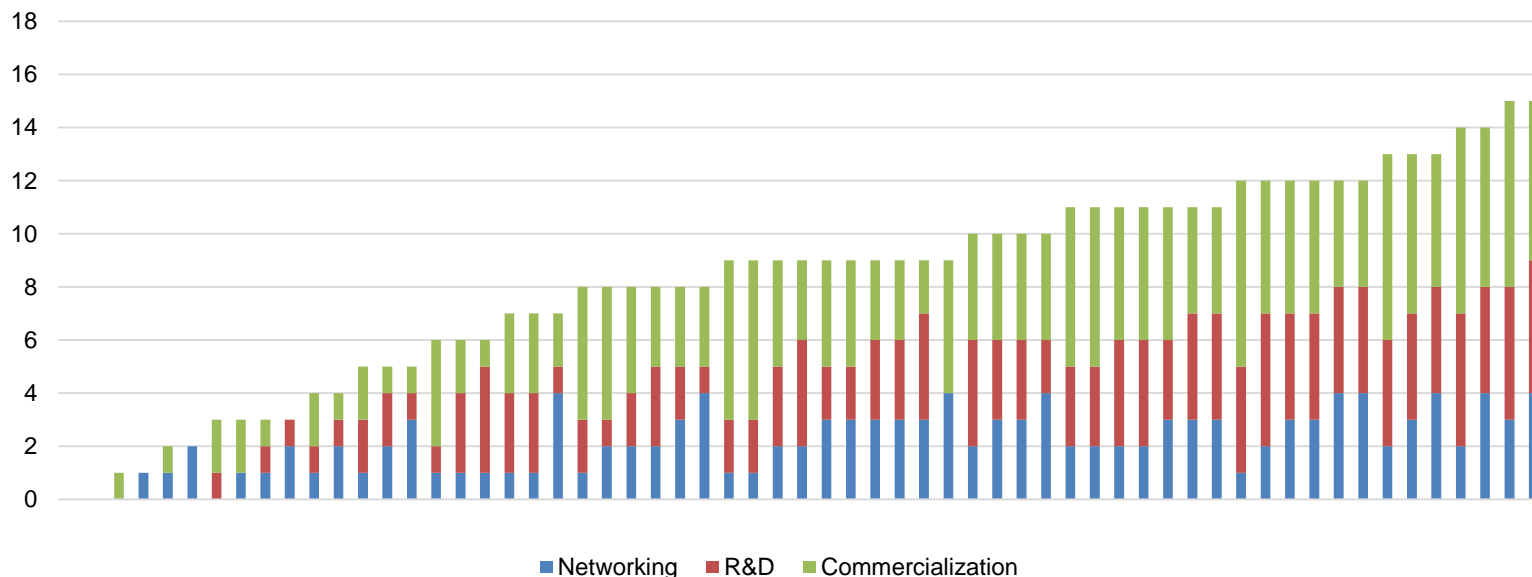


# Multiple and Synergistic Benefits

Benefit Type	Mean	Percentage of Total
Networking	2.5	50.0%
R&D	2.2	55.0%
Commercialization	3.6	40.0%
<b>Total</b>	<b>8.3</b>	<b>46.1%</b>

See case in  
extra slides

**Benefit Profiles Reported by SBIR/STTR Member Firms**





# Problems and Negatives

Response Category	N	% of Firms	Illustrative Comments
No problems	28	41.0	"No, everything was fine"; [did not provide an answer]
<i>Operational Issues</i>	13	28.3	
Agreements/ Promises Not Fulfilled	5	10.9	"...they promised to have the equipment ready...they didn't have it and had to borrow it...very frustrating...They overpromised..."; "two people who overpromised in terms of connections with faculty and other members – turns out they had fairly weak links and were not able to connect us to anyone..."
Poor Communications/ Meetings	4	8.7	"Some of early meetings were less organized than later meetings. Level of organization was important to getting benefits from the meeting."; "most small companies were spin offs of that center and treated "special"... we felt like outsiders"
Agreement/IP	2	4.3	"standard member agreement has IP language that was overly restrictive for a small company-- limited the value that company would gain from being a member";
Little Project Selection Influence	2	4.3	"Told they would be able to suggest projects. Suggested 4-5 projects. None were presented for voting on...They chose to funnel money into an old project that had no relevance to him"
<i>Supplement Shortcomings</i>	9	19.6	
Time Frame/ Funding	7	15.2	"it's still very challenging to go to the meetings in terms of time and money to get there"; "problem maintaining my membership because the supplement is over. Just hanging in by a thread - paying monthly"; "Was approached by another center and promised a student on a specific project but the funding wasn't available. "
Misinformation	2	4.3	"Person who told us not to submit from NSF... wanted technology to be on market, to have investments from businesses"
<i>Research Issues</i>	8	17.4	
Quality/ Relevance	5	10.9	"The engineers brought in to represent the center was quite a lot of language barrier and knowledge barrier - we were not impressed at all"; "direction of center research. It is a good team, but it is just little off course. We are too narrow for them [center]."
Progress Slow or Unpredictable	3	6.5	"post doc never showed up...so there was a long start up time... for a small firm, this is detrimental...a small firm doesn't have the resources to hang around like that";
Total		106.3	

1 yr.



# Continued Membership

Membership status	N	%
SB member	7	14.3
Not a member	38	75.5
NA: No longer in business	4	12.2

Response Category	N	%	Illustrative Comment
Firm could not afford the fee	22	56.4	<p>“Entirely financial. If company was awarded a Phase II under the NASA award they would likely have used the supplement to join the center again.”</p> <p>“[We] would definitely continue their membership if supplement was available; however, without the supplement [we] do not have the funds.”</p>
Firm continues to interact with the center	12	30.8	<p>“The money is too much. But once we get some technology going and get more money we want to rejoin. Informally, we are still in communication.”</p> <p>“[We] do still interact informally. We still meet with faculty, discuss their projects, get together on commercial proposals to customers collaborating with the univ. We have submitted a few proposals since then.”</p>
ROI was not apparent	13	33.3	<p>“Eventually we saw the idea did not lead to a commercializeable product. It was not quite ready so we couldn’t invest anymore because it was a dead end. But we do still interact informally.”</p> <p>“The company felt they were investing too much with too little in return.”</p>
Other reasons	6	15.4	<p>“While the company could afford the membership fee now, it’s not a top priority for them. They still interact and maintain contact but do not collaborate currently.”</p> <p>“While the company could afford the membership fee now, it’s not a top priority for them.”</p>

**Estimate >80% continue interaction**





# Worth Time and Money Invested

	N	%	Illustrative Comments
87%	42	68.9	<b>“I would tell almost any small business to do it. This center is great. A small business would be foolish not to take advantage”</b> ; “Have received some very tangible benefits. They developed connections that they would not be able to achieve...The nature of the center and meetings, people were sharing the research.” It definitely shortened the time to connect and have opportunities to interact. The density of networking opportunities was a big benefit.”
	11	18.0	“we haven't gotten the results yet, <b>but it looks like it's going to work out”</b>
	4	6.6	<b>“they dropped the ball on us”</b> ; “I do see potential value in the I/UCRC program; this particular case just did not work out well”
	4	6.6	<b>“Lost money from membership and traveling associated with it”</b> ; “The faculty members don't like to log time and don't like to be restricted by deliverables and time.”

# Conclusions

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- Program-Level
  - Modest penetration for both SBIR/STTR and I/UCRC
  - Added micro-enterprises/start ups to I/UCRC mix
- I/UCRC (*incremental innovation*)
  - Several benefits: \$; Student mentoring; social capital
  - Turnover was “negative” by half
- SBIR/STTR (*combinatorial innovation?*)
  - Self-selected participant group: may not be for everyone
  - Multiple and synergistic benefits
    - Surprisingly few “unintended consequences” or big conflicts
  - Time limited formal membership but lasting interactions and social capital



# Recommendations

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## ***Recommendations for IIP***

- *Convert the SBIR/STTR Membership in I/UCRCs supplement to a permanent supplemental opportunity*
- *Consider lengthening the membership period*
- *Review supplement goals and decide on an appropriate level and mechanism for funding*
- *Provide more guidance about the eligibility, funding periods, and best practices*
- *Facilitate the matching and on-boarding*
- *Encourage other Federal SBIR-sponsoring agencies to develop similar supplements*
- *Consider evaluation of longer-term impacts*

## ***Recommendations for NSF***

- *Look for additional opportunities for synergistic combinatorial effects between various NSF programs*



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# Questions

Supported under: IIP-1140438 supplement.

*Any conclusions, findings, or recommendations are those of the authors and do not necessarily reflect those of the National Science Foundation or the U.S. government.*

# SBIR Recommendations for Improving



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Response Category	N	%	Illustrative Comment
<i>Longer/Additional Support</i>	25	40.9	
Increase length of supplement	16	26.2	“The supplement is very generous, but doesn't last very long. You don't get to the point where you can realize the benefit”; “NSF could improve by allowing some kind of a tapering down of the membership subsidy -- whether based on revenue for longer term of support. Do it over a period with increasing fees. Need longer interaction to get the real benefit of it.”
Keep partial subsidy	6	9.8	“I think it is very well structured. Making company put some skin in the game is a wise way to proceed. Incentivizes the company to get something out of it.”  “Do not change that the SB has to have skin in the game. Partially subsidized ride is not unreasonable. Resist push let SB have membership without putting something up.”
Provide travel support	3	4.9	“Minimum NSF can do additionally: provide travel money. We had research idea, but it was not funded because of NSF political interests and because we did not have budget to be involved with the center even after our membership fees were covered.”  “It would be great if NSF could pay the entire membership fee. Costs for travel go above what we were able to afford, in addition to the fee.”
<i>Better Matching &amp; Onboarding</i>	19	31.1	
More support for matching and onboarding	11	18.0	“Figure out a way to identify who are the right people to partner. Not always easy to do that. I think this study will help. It's finding the right center to put the money is the key thing. Maybe NSF should advise SBIRs to go and investigate and talk to several in their area that might be a good fit and then make a choice.”  “The annual SBIR/STTR conference is a busy time; however, it'd be helpful to invite the centers or have a poster session to market the various opportunities to small business. Otherwise very difficult to find these centers.”
Clarify expectations between SB and center	8	13.1	“We are looking for some technology. With a small firm you need results you can use faster. Maybe the centers should get some counseling that the projects need to see results in yr 1 and then polish in yr 2, within the constraints of being a science project, not product development.”  “Set expectations correctly in working with researchers as a small business. Also setting expectations for faculty. Faculty members should manage their students like a company would manage their employees.”

# Case Vignette from Successful SBIR



Industry/University  
Cooperative Research  
Centers

## Sidebar 4: Firm with Multiple Synergistic Benefits

This firm focuses on energy and emissions related technology research and development. They had a very high regard for the center director and wanted to get involved in the research he was working on and thought it overlapped nicely with the kind of problems they were working on. They were very adamant that without the supplement they wouldn't have joined the center. They indicate that they have received a number of very concrete R&D and commercialization benefits from participation in the center. First, involvement has produced a lot of R&D cost avoidance and savings and accelerated their ability to do product development. As a consequence they have been able to deploy their limited R&D resources more effectively. They report that they have gotten a lot of free expert consulting from the center and characterize the experience of the faculty as "astounding." A device designed for them would have cost too much for them to do themselves – and this R&D opportunity would never have been addressed.

According to the company a project they proposed made a lot of progress solving a tech issue. As a consequence, they pulled this work into their own R&D because: "You only get so far in the center because it's precompetitive and then have to take it the rest of the way on your own." This work has been incorporated into an existing product component they are currently refining and using. Although they haven't licensed any center IP, they "take what the center does and modify it and improve for their own issues." In addition, in the course of working with the center they realized they had a technology and that had another more important application -measuring contaminants in materials. They are in the process of commercializing this application. In another case one of their research projects was dormant due to a technical issue they couldn't overcome. With the center's help they were able to get through the issue. Based on this work they are designing a new technology for a new customer.

They also anticipate a new product may come from their work that will be targeted at a DoE project. They report winning a number of federal and private grants as a result of the work they have done with the center which has produced additional income for the firm. They report they have already attracted one new investor and a possible four additional investors in part due to these center-related commercialization developments. This work has resulted in them hiring two summer interns, subcontracting a project with a professor, are a subcontractor on a project funded through the center. They anticipate adding two jobs next year that are related to the center's work. The impact of getting involved in the center on their social capital is impressive with them reporting relationships with 18 new faculty or students and 30 IAB members. Not surprisingly they report, "I would tell almost any small business to do it. This center is great. A small business would be foolish not to take advantage of it."