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Highlights of Survey Data FY2020 IUCRC Evaluation Project December, 2022

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Overview

- Response rate
 - Slides 3-4
- Industry Findings
 - Pulse Survey: Slides 5-10
 - Benefits Inventory: Slides 11-28
- Faculty Findings
 - Slides 29-34
- Student Findings
 - Slides 45-40

FY2020 Response Rates



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	Center Level				Individual Level			
	Pulse	Benefits	Faculty	Student	Pulse	Benefits	Faculty	Student
Continuing Population from CD report	73	73	73	73	1152	2263	1061	1893
1st Year Reporting Population from CD report	+0	+0	+0	+0	+0	+0	+0	+0
NCE/Retired/Defunct Centers	15	15	15	15	236	236	179	332
NCE/Retired/Defunct Centers Reporting ^[1]	+4	+2	+1	+3	+26	+20	+5	+42
Population ^[2]	63	60	59	61	1010	1003	889	1635
Centers That Did Not Return Data ^[3]	17	27	21	25	379	376	324	668
Available Population ^[4]	46	33	38	36	631	627	565	967
Data Received	46	33	38	36	254	214	276	267
Received / Population	73.02%	55.00%	64.41%	59.02%	25.15%	21.34%	25.15%	16.33%
Received / Available Population	100%	100%	100%	100%	42.25%	34.13%	48.85%	27.61%

^[1] Retired/defunct Centers and Centers on no-cost extension (NCE) are not required to submit data, but some do. If so, those data were included in the analysis. .

^[2] Population was defined as centers that were at least 1 year old, did not report COVID-19 impacts, and/or were not classified as NCE, graduated, or retired.

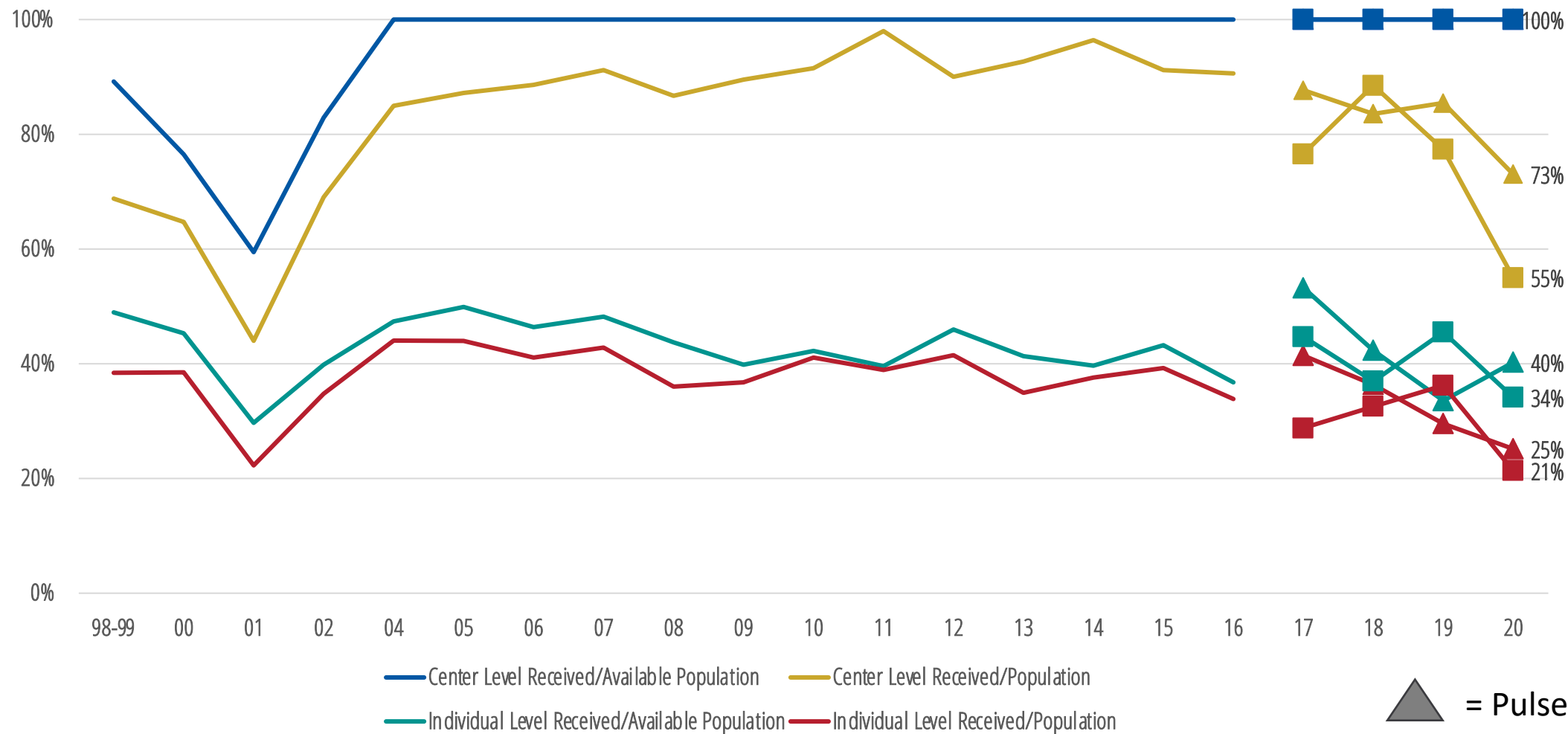
^[3] Centers were excused for reasons such as being in the midst of center restructuring, high respondent turnover, and respondent failure to complete surveys.

^[4] Numbers based on population minus excused and not returned counts.



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Industry Response Rate Over Time



▲ = Pulse
■ = Benefits



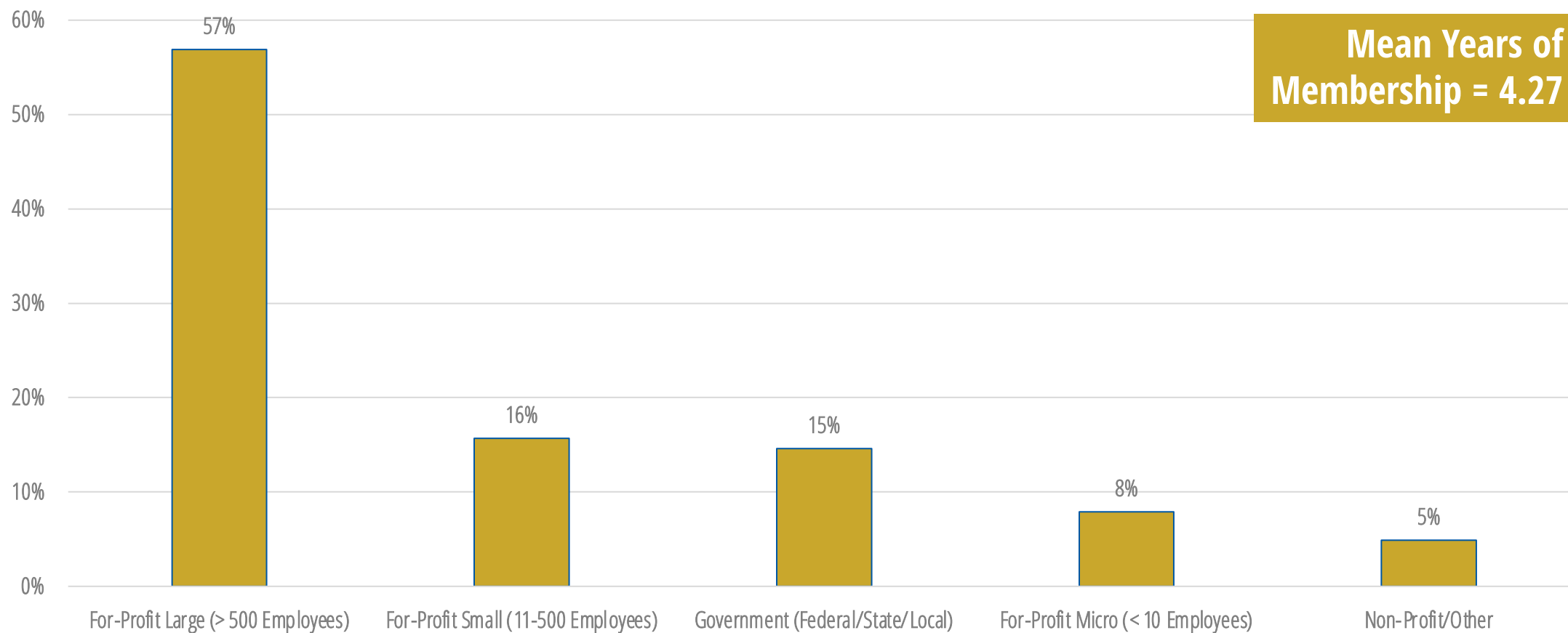
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Industry Pulse Survey



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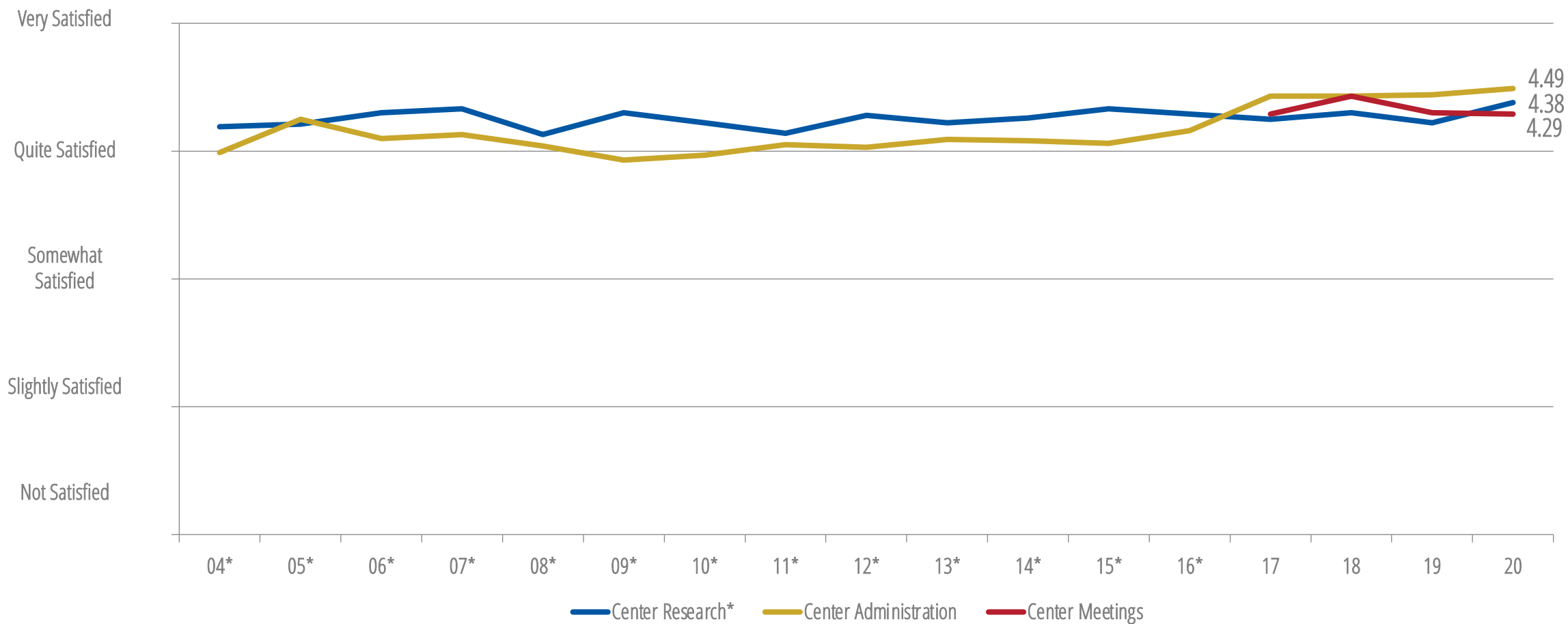
FY2020 Organization Type/Size





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IAB Member Satisfaction Over Time

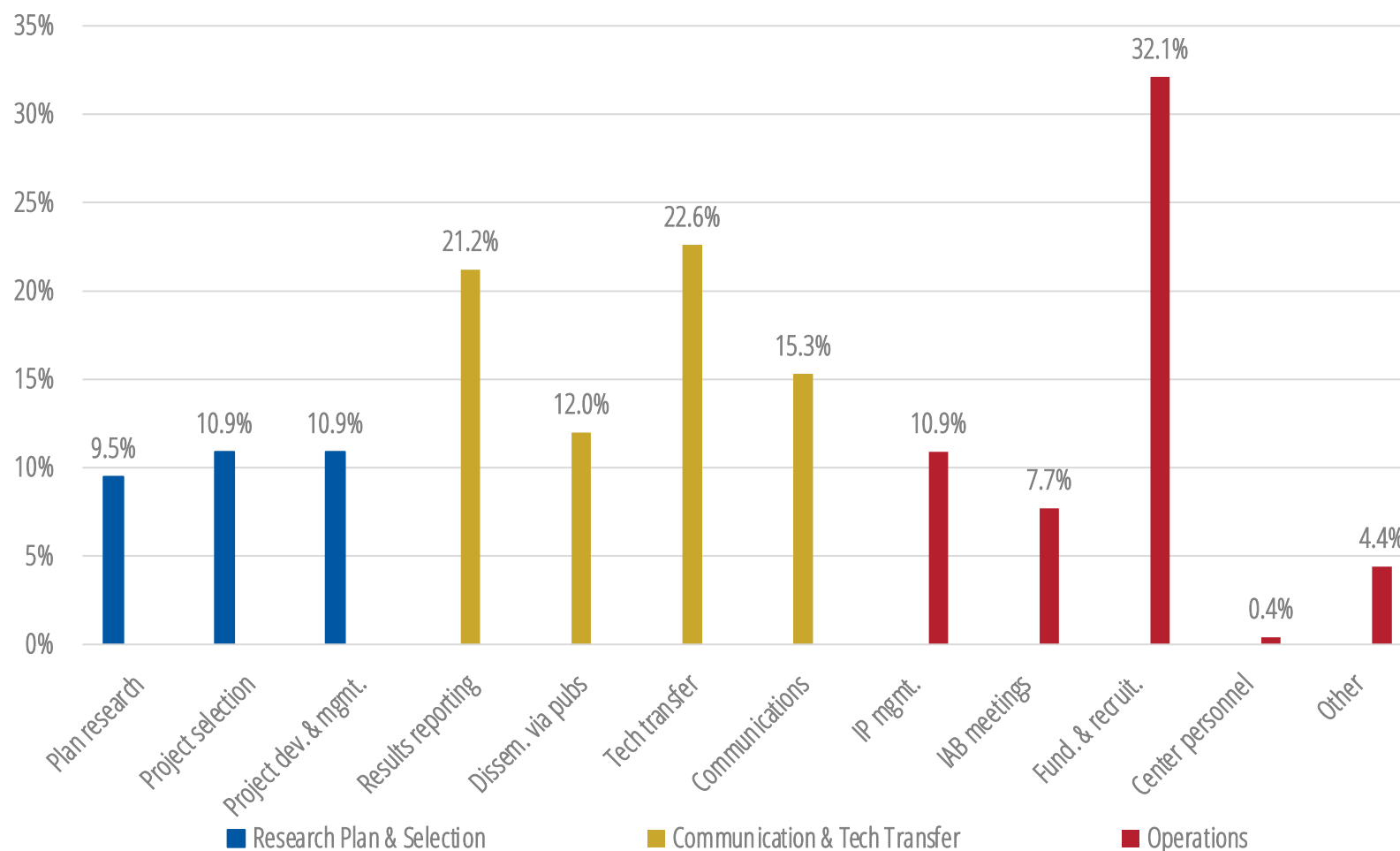


* Previous version of the survey asked for ratings of research quality



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FY2020 IAB Identified Areas for Improvement



“It appears to me that each of the centers do not practice the same best practices. I would assume that if they are all working together, they would do a better job with reporting and communicating to the research team and IAB.”

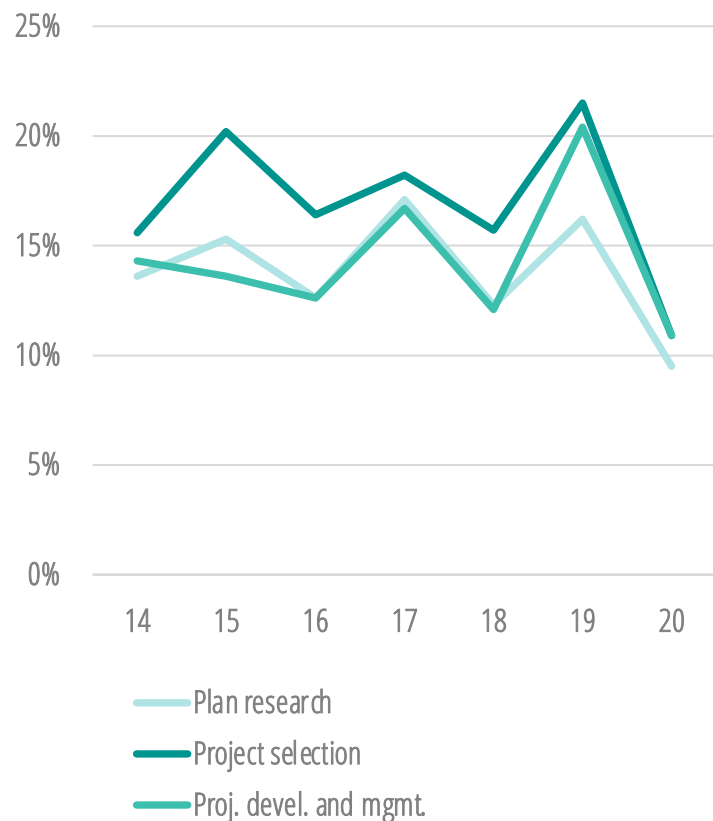
“A standardized technology transfer stage at the end of each topic life-cycle is needed and strongly suggested to implement.”

IAB Identified Areas of Improvement Over Time

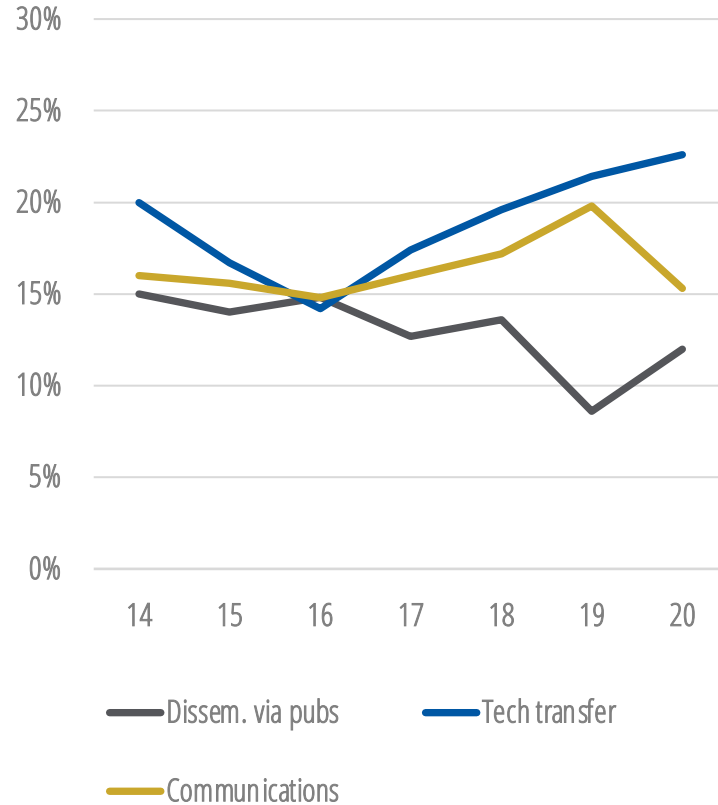


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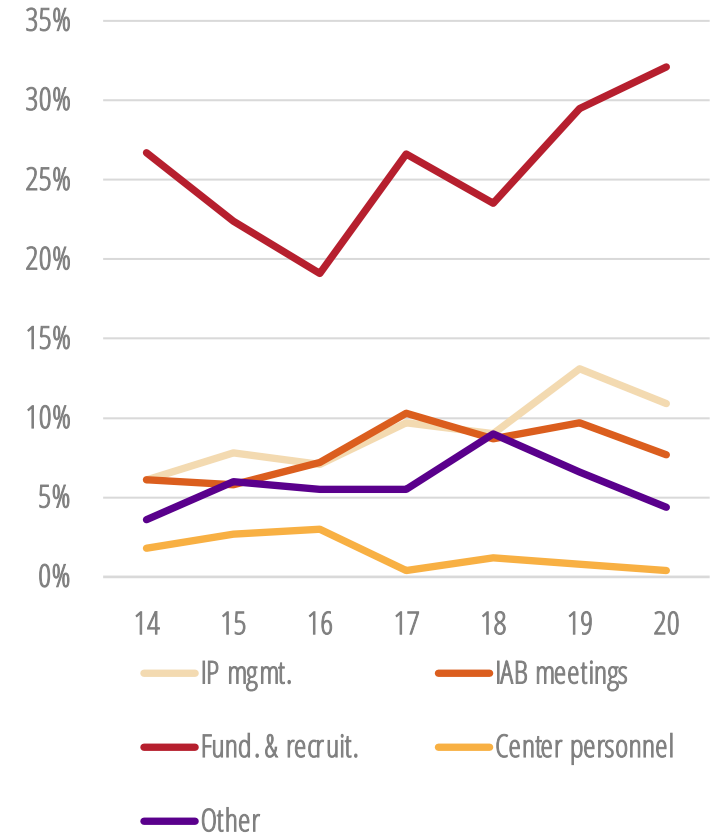
Research Planning & Selection



Communication & Tech. Transfer



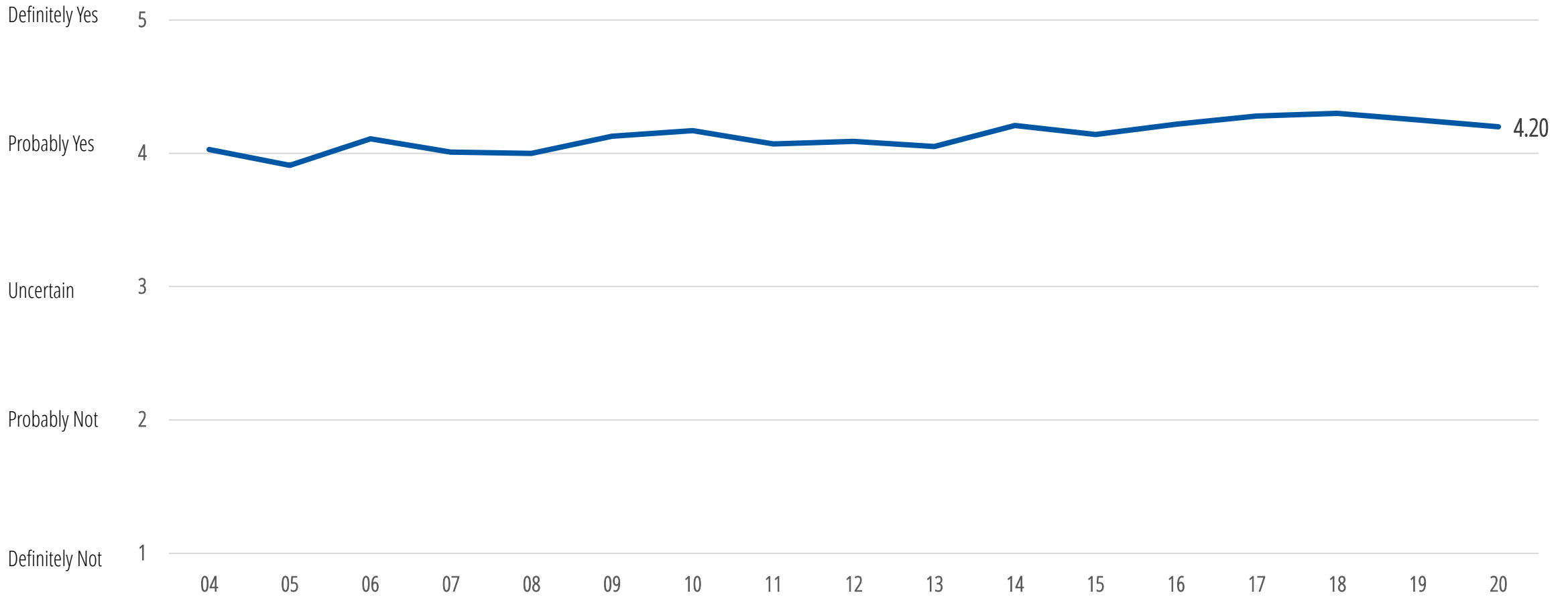
Operations



IAB Renewal Intentions Over Time



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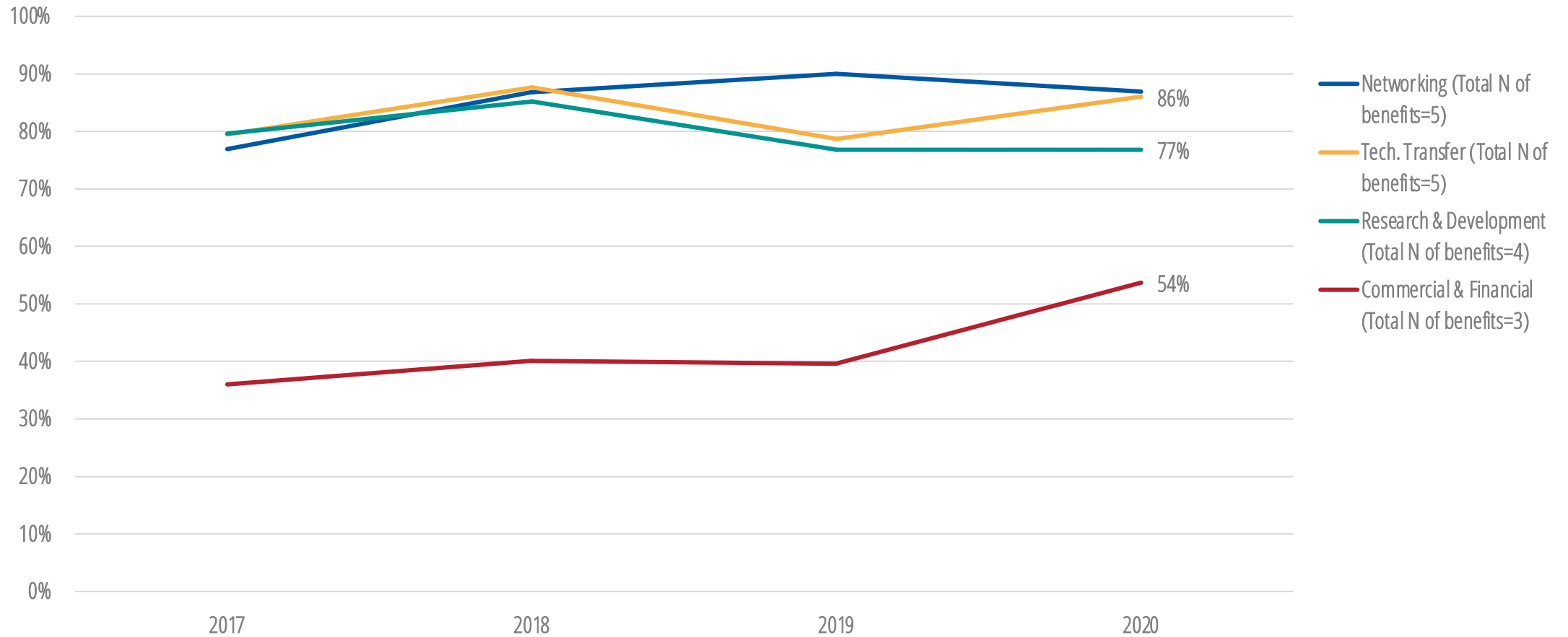
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Industry Benefits Inventory

Percent of IAB Members Reporting Any Benefit: by Category



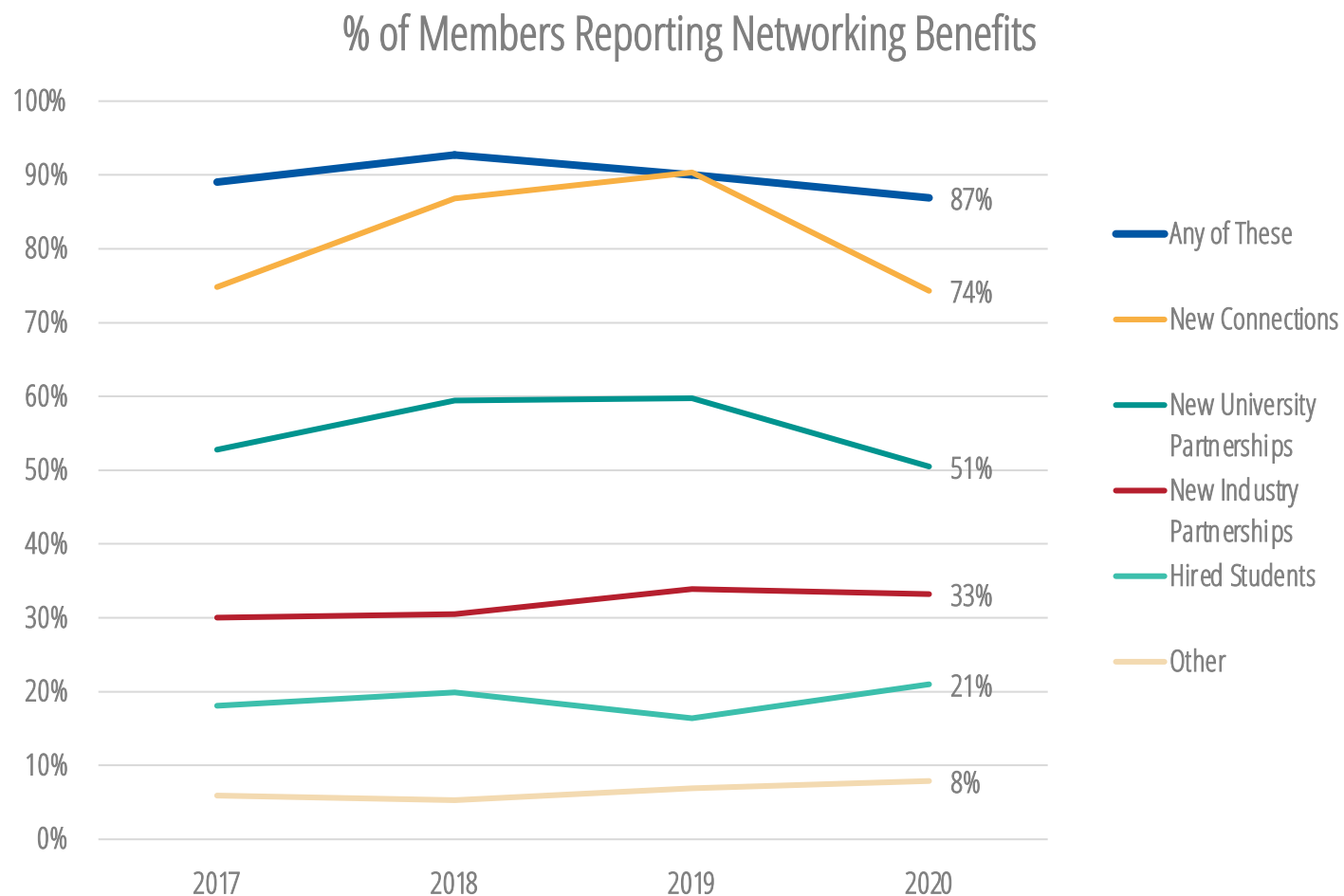
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Networking Benefits Summary: Over Time



“The connections made have strengthened relationships among partnering agencies which enhance mission success and productivity. It's tough to put a value on R&D benefits experience, but the most significant impact has been the access to both the research outcomes/products. [Center] is providing R&D results that are directly relatable to current organizational areas of interest. [...] Access to data collected from [Center] projects has been a great benefit.”

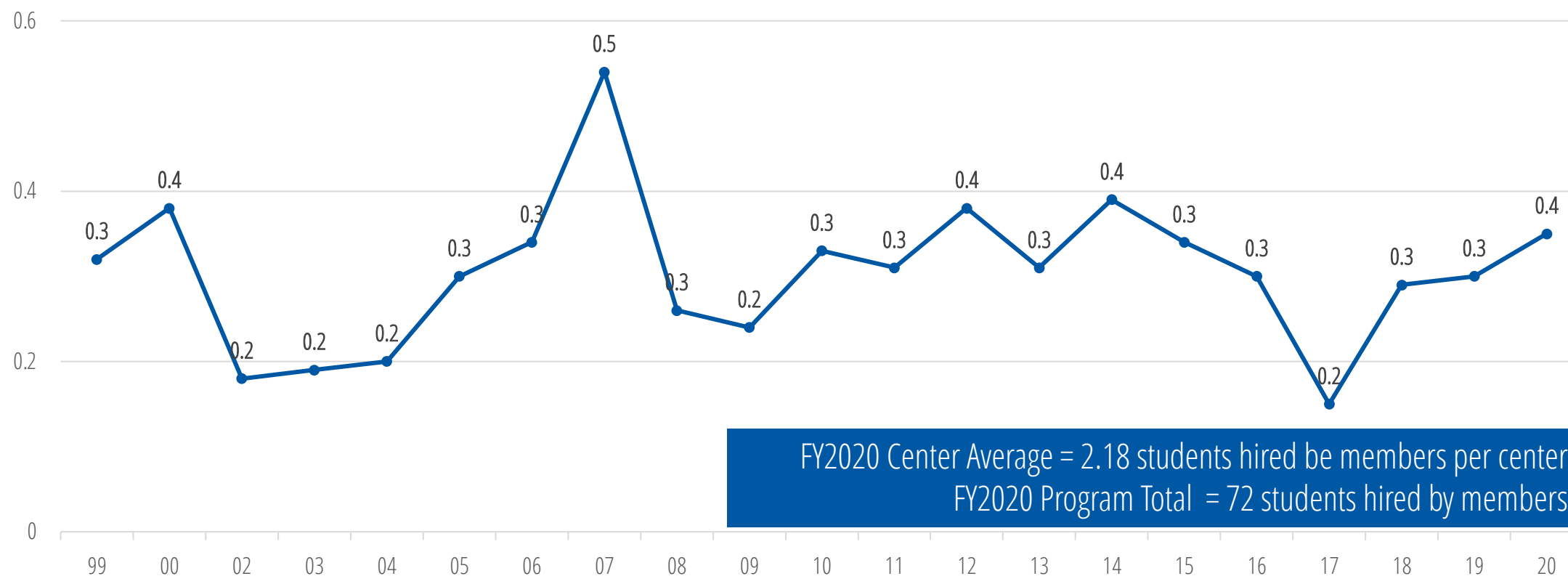
“The creation of scientific networks that have been established through the first round of CBM projects have been the greatest direct benefit to our company. This has been especially important for the engagement of new researchers across the different sites of our newly formed company.”



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Networking Benefits: Students Hired by IAB Members Over Time

Average Students Hired per Member Firm

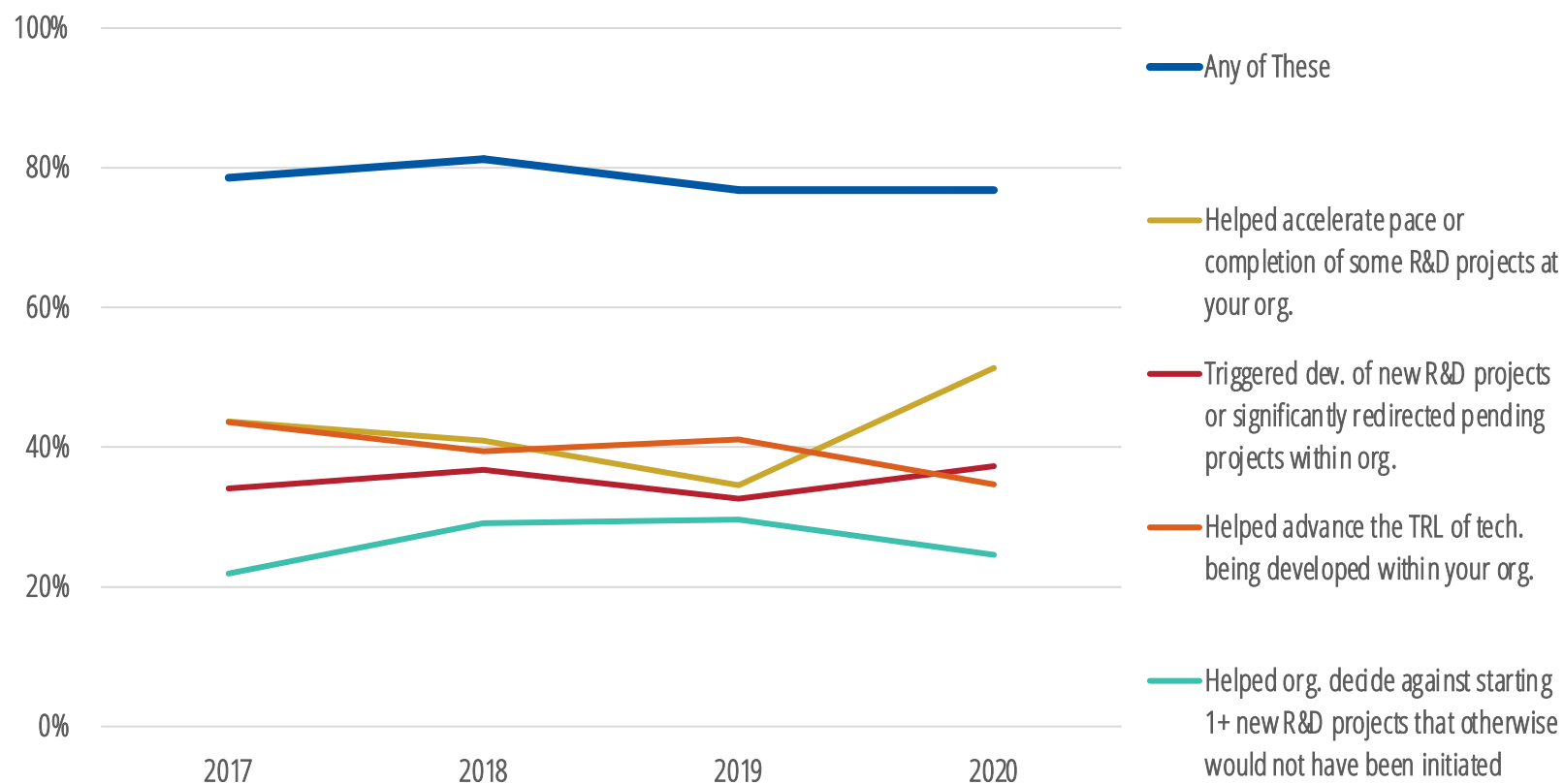




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R&D Benefits Summary: Over Time

% of Members Reporting R&D Benefits



"[A benefit was] 1000 Research hours saved on filtering good approaches for process optimization.

We were able to leverage [Center] to receive valuable deliverables significantly cheaper and quicker than the government can contract a similar industry partner. Access to world class research to inform organic development efforts. Ability to access verification and validation resources not possible in the government. Value [is equivalent to] ~\$200k."

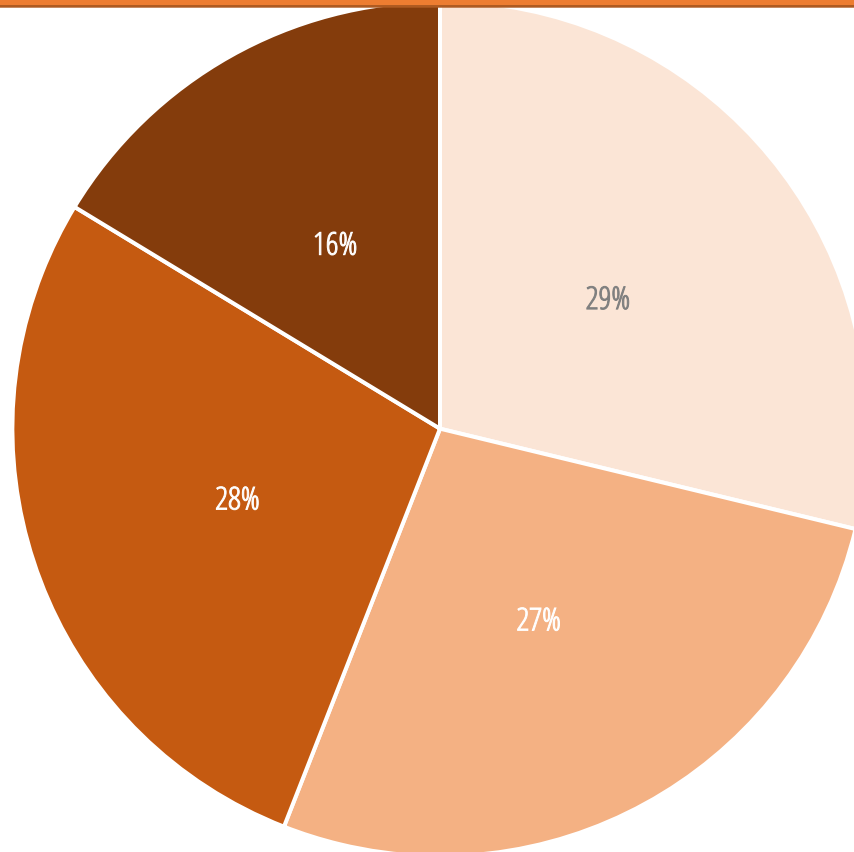
"Of most benefit has been having a "fresh set of eyes" looking at historical research gaps. Obtaining the perspective of scientists that have not been entrenched in the same problem for years provides opportunities for novel solutions."

FY2020 R&D Benefits: Research Relevance for the Average Member



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For an Average Member, 71% of Center research projects are relevant.



- Not Relevant Research: % projects that are probably not relevant to your organization's current or future needs
- Adjacent Research: % projects potentially relevant to your org's current or future needs, but in area outside your org's current focus
- Core Research: % projects so relevant to your org's needs that your org. would almost certainly have conducted/contracted out similar project within next couple years
- Transformational Research: % projects potentially relevant to your org's current or future needs, but too risky/blue sky for internal investment



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Research Cost Avoidance (RCA)

- Definition: Research cost avoidance is savings a firm obtains by having “necessary” research projects performed by a center rather than performing them internally.
- Example: If a firm reports that a particular “necessary” project would cost \$100,000 to carry out internally (counterfactual estimate) but that project was actually carried out by a center to which they pay a \$50,000 membership fee that firm has avoided \$50,000 of R&D costs.
- $RCA = N \text{ of Proj. Avoid} \times \text{Scien. Months} \times \$/\text{Scien. Months}$ (Gray & Steenhuis, 2003)
 - N of Proj. Avoid = N of Center projects (CD report) X % Core projects (Benefits Inventory)
 - N Scientist months = 5 year median



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R&D Benefits: Research Cost Avoidance (in thousands)

- Sample: N of respondents = 288, N of centers = 40

Calculation: (N of Core Projects * 12 months * Average cost per scientist month) – Primary Membership Fee

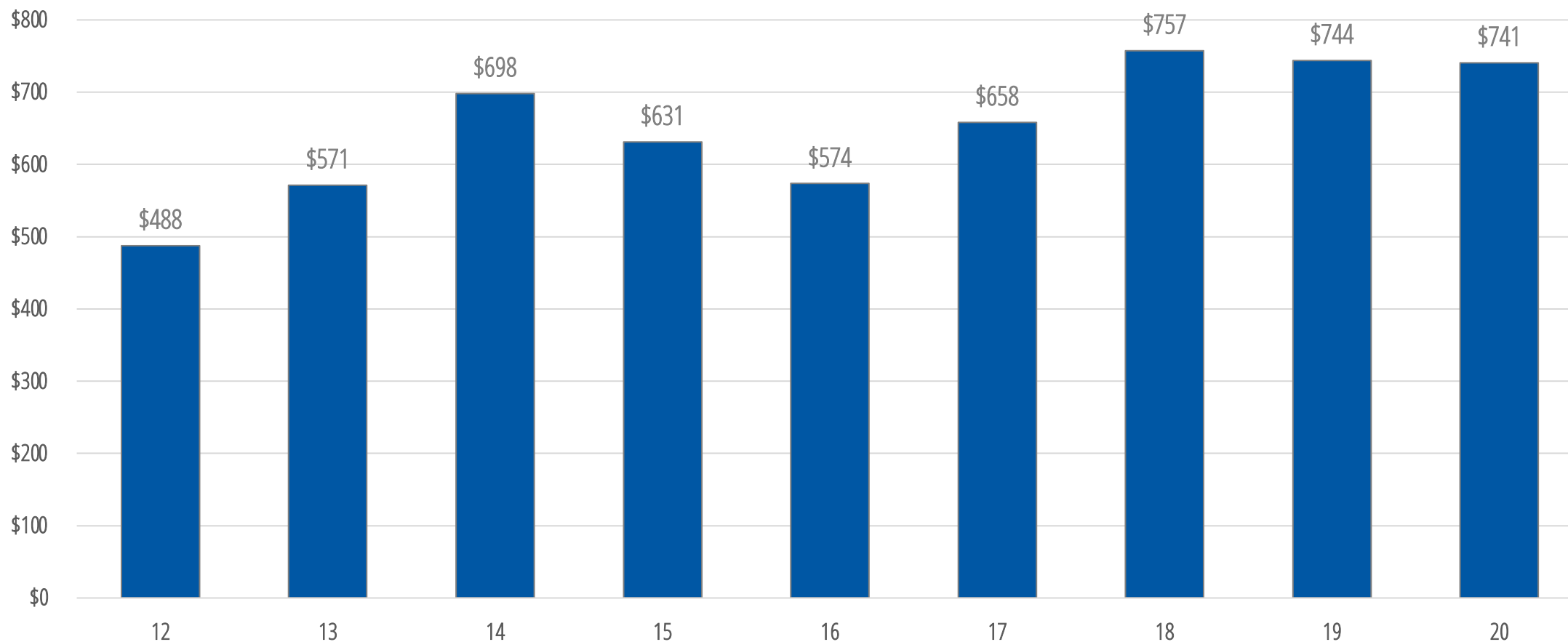
Member Level Scores	Mean	Median	S.D.
a. Average dollar value of avoided projects per respondent organization	\$740.87	\$423.79	672.09*
Center Level Scores	Mean	Median	S.D.
b. Average dollar value of avoided projects per respondent organization	\$4,132.17	\$2,164.00	\$3,393.77
Program Level Scores	Sum		
c. Total dollar value of avoided projects by respondent organizations	\$128,007,300		
RCA program = Sum of member level RCA			

*31 members (11%) have negative RCA that results in large standard deviation.



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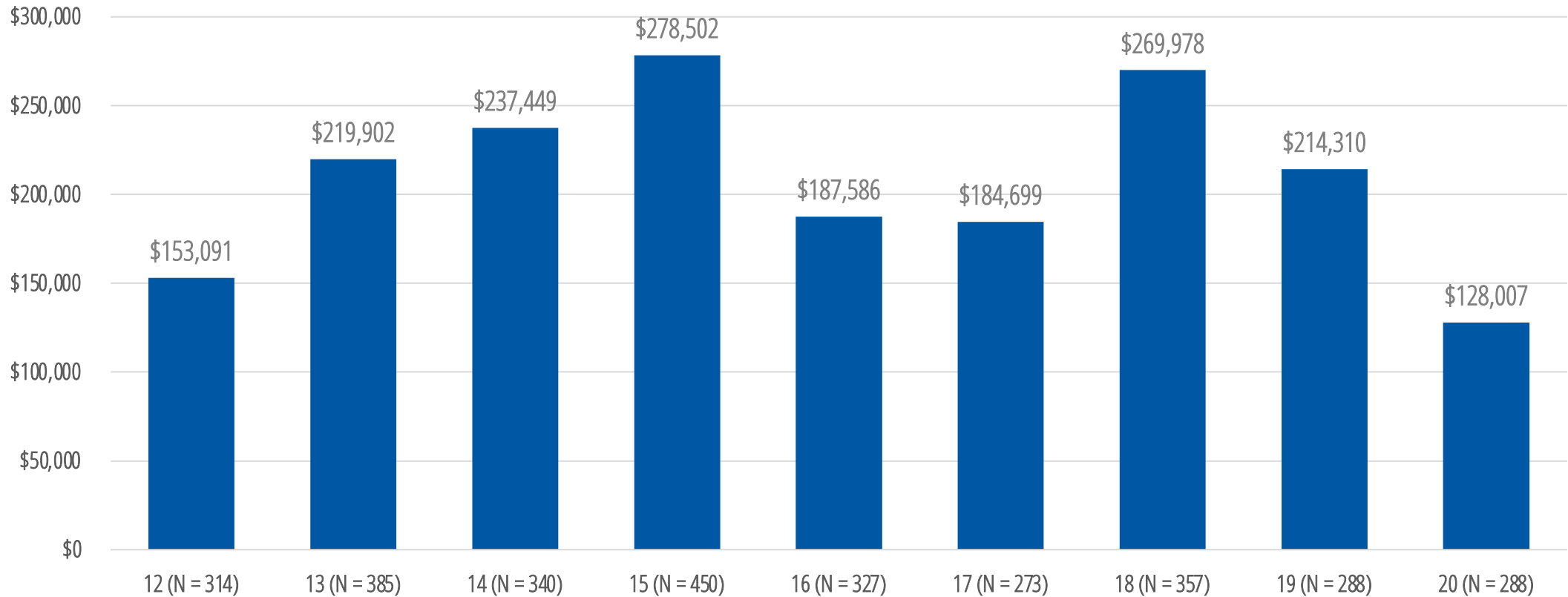
RCA Over Time: Member Level Average (in thousands)



RCA Over Time: Program Level Total (in thousands)



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R&D Benefits: Research Cost Savings

Research Cost Savings – estimated dollar value of research dollars saved

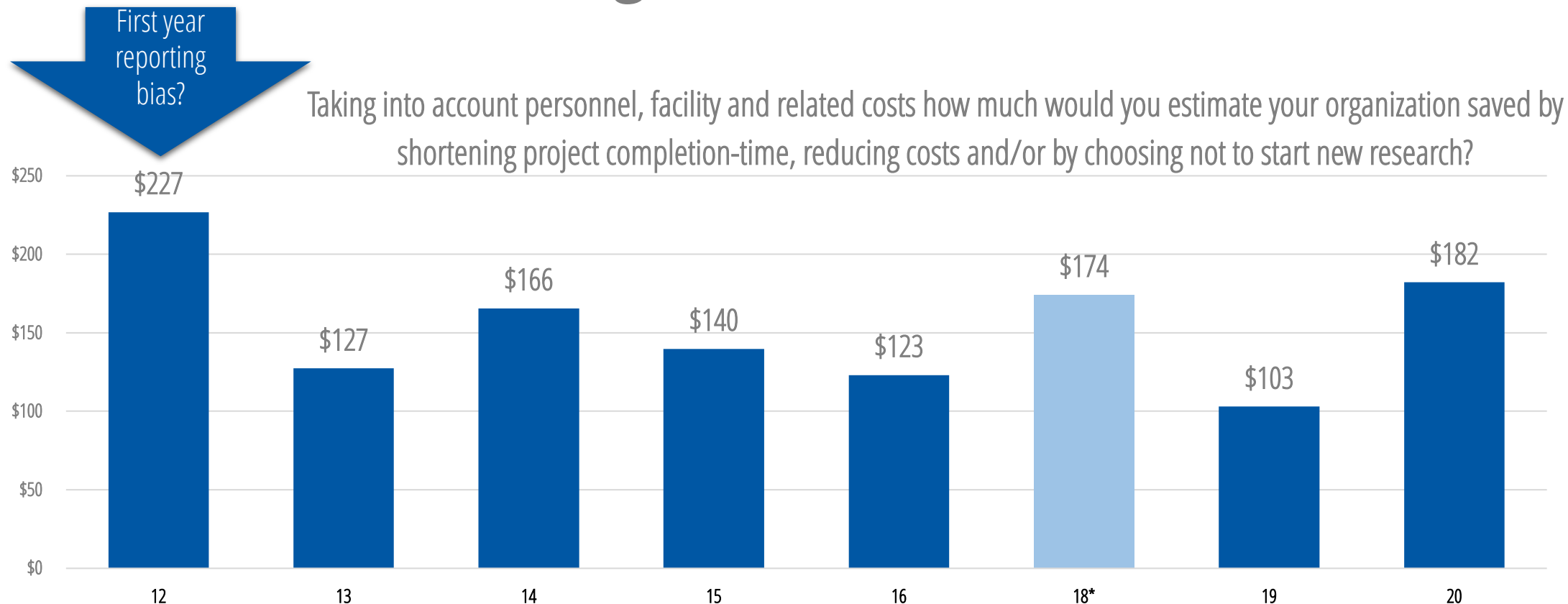
- Taking into account personnel, facility and related costs, how much would you estimate your organization saved by shortening project completion-time, reducing costs and/or by choosing not to start new research?

Level of Analysis	Dollar Value
Member Level Average	\$182,100
Center Level Average	\$1,086,600
Program Total Reported	\$33,685,000



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Research Cost Savings Over Time: Member Level Average (in thousands)



*For FY2018, the dollar value questions were administered to only a sample of 12 centers as part of the experiment to test their effect on the Benefits Inventory's response rate. Metric not collected in FY2017.

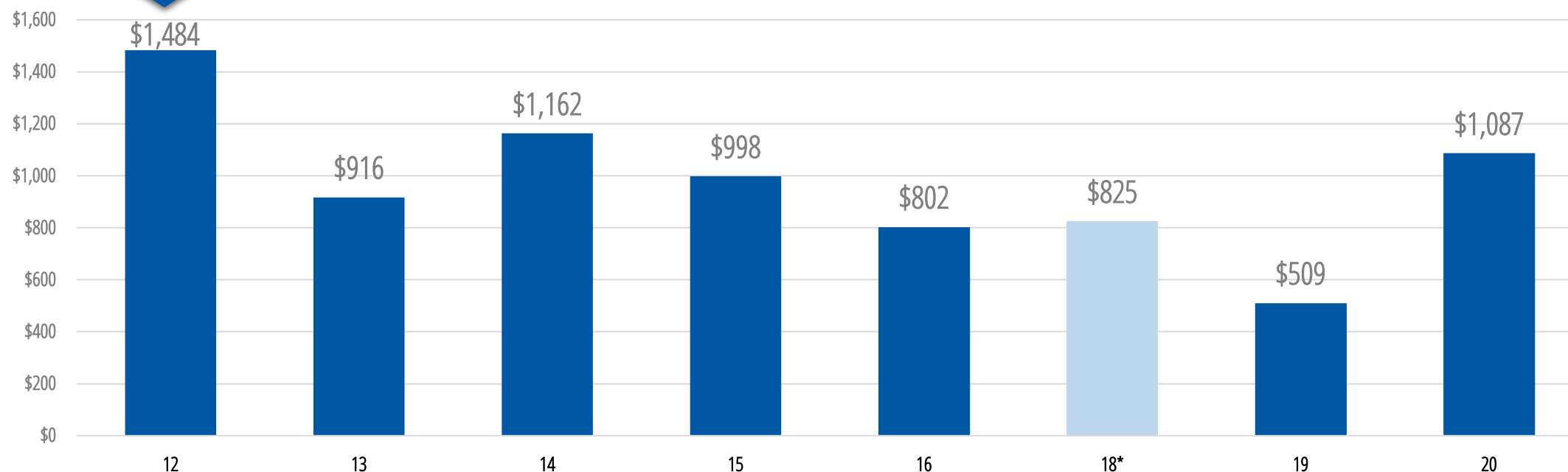


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Research Cost Savings Over Time: Center Level Average (in thousands)

First year
reporting
bias?

Taking into account personnel, facility and related costs how much would you estimate your organization saved by shortening project completion-time, reducing costs and/or by choosing not to start new research?



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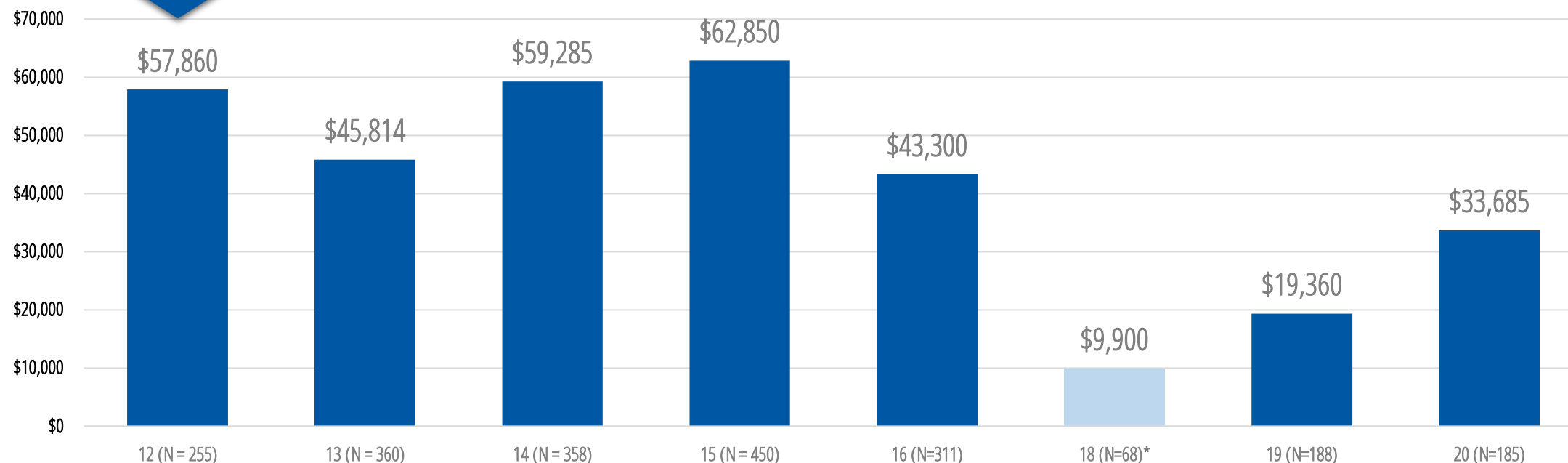


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Research Cost Savings Over Time: Program Level Total (in thousands)

First year
reporting
bias?

Taking into account personnel, facility and related costs how much would you estimate your organization saved by shortening project completion-time, reducing costs and/or by choosing not to start new research?

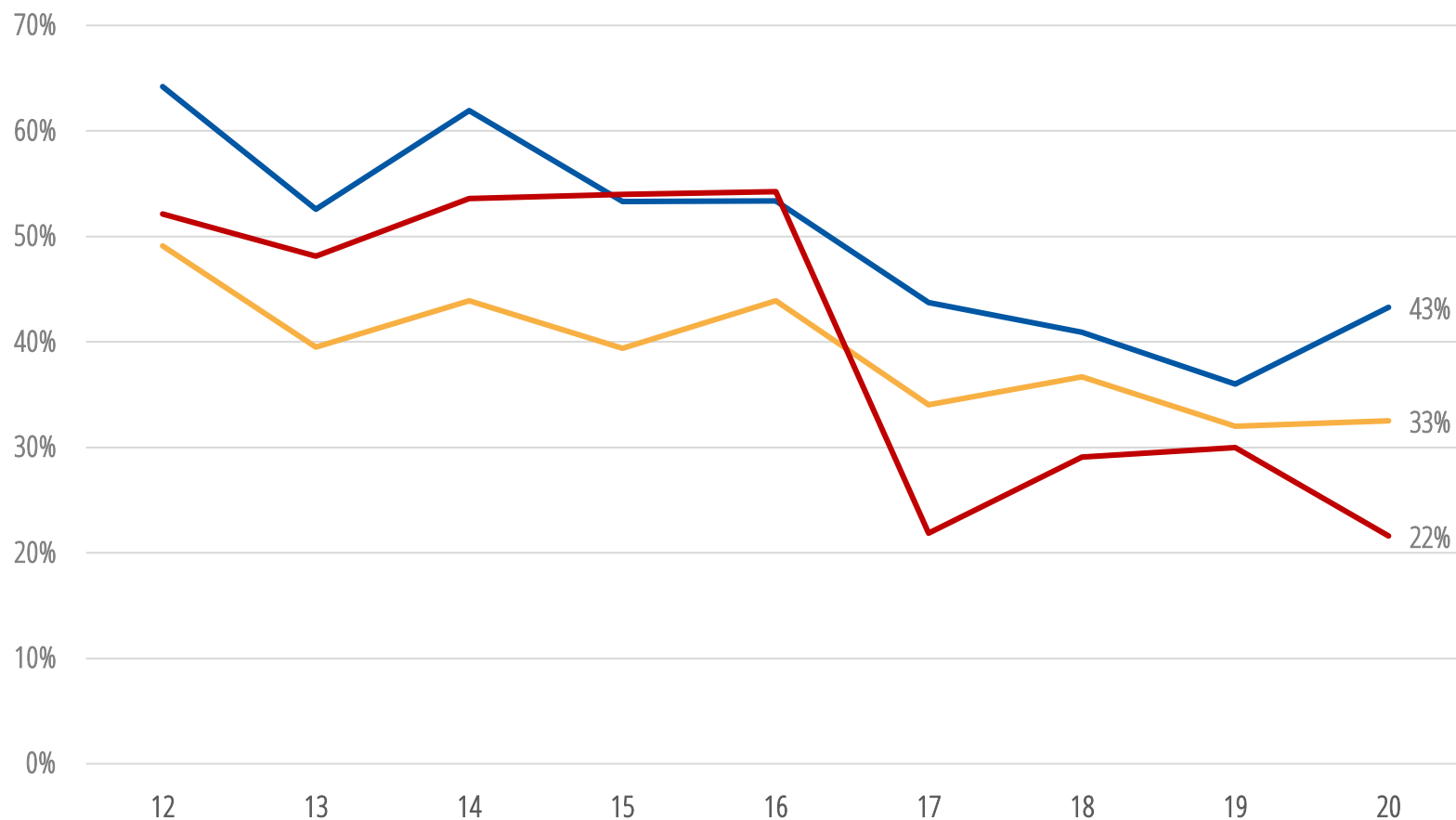


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R&D Impacts: Trend Over Time



- Helped accelerate the pace and/or completion of some R&D projects now underway at (or contracted by) your organization
- Triggered development of new R&D projects, or significantly redirected pending projects within your organization
- Helped your organization decide against starting one or more new R&D projects that otherwise would have been initiated

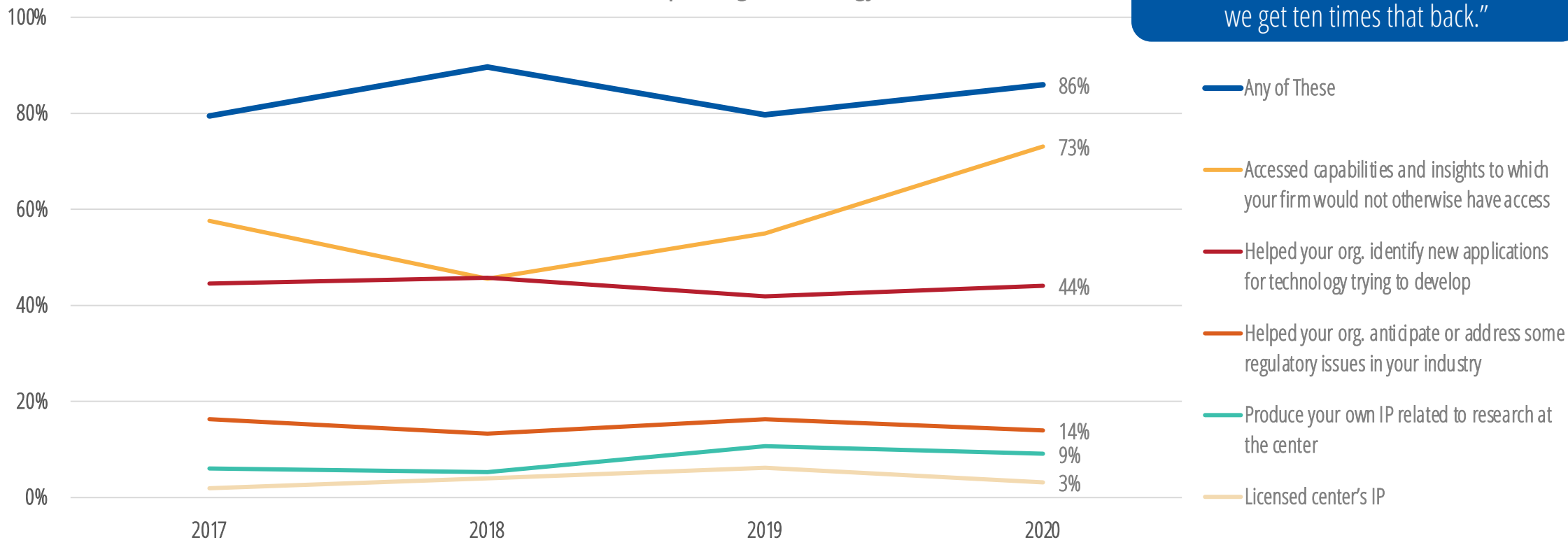


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Technology Translation Benefits Summary: Over Time

“[A benefit was] new product ideas. Time to implement. For every dollar that we invest, we get ten times that back.”

% of Members Reporting Technology Translation Benefits

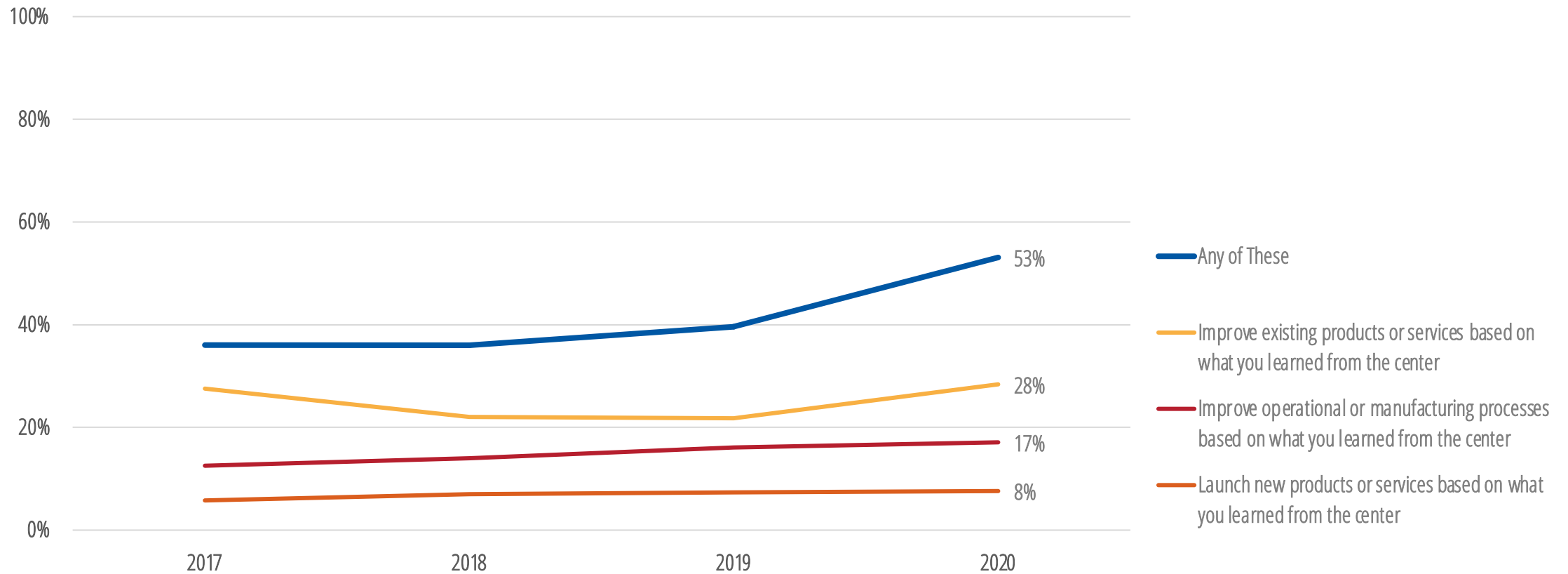


Commercial & Financial Benefits Summary: Over Time



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% of Members Reporting Commercial Benefits

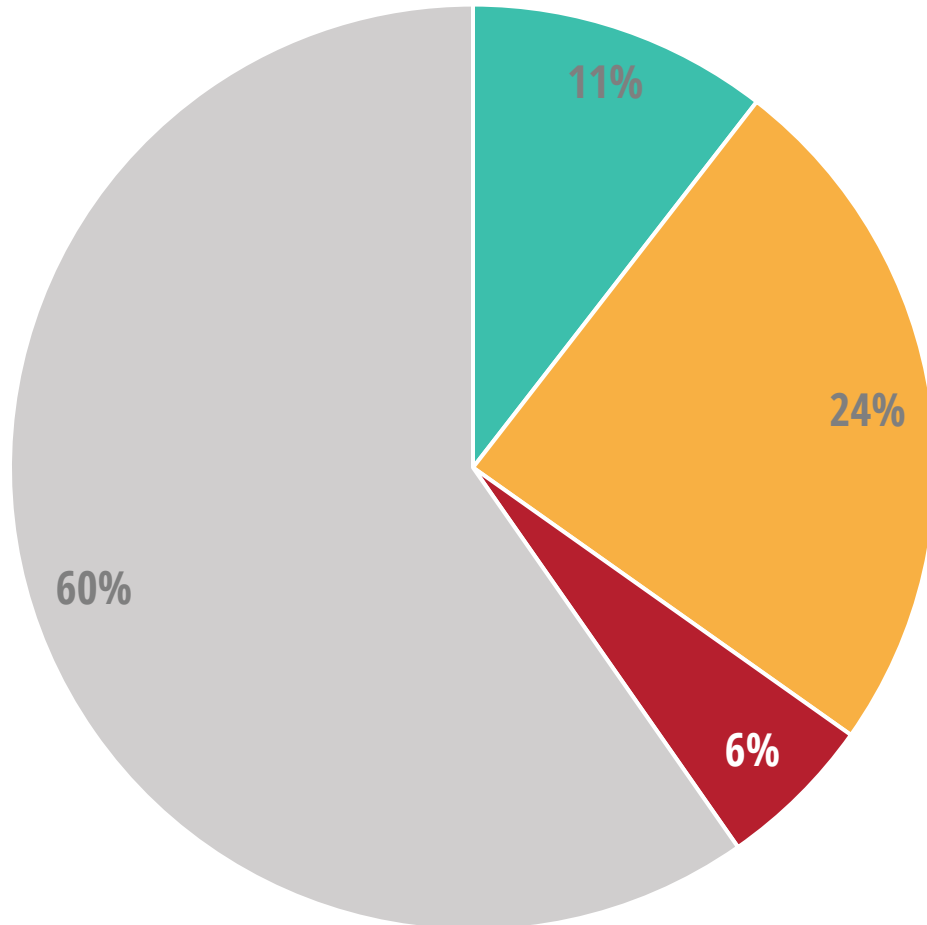


FY2020 Center Contribution to Commercial Outcomes



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Would these commercial or financial benefits have been realized in the absence of the center?



- No, the center played a critical role in realizing these benefits
- Yes, but the benefits would have been delayed without the center's involvement
- Yes, the center had only limited influence on our ability to realize these benefits
- Not applicable



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Faculty Questionnaire

Select Results



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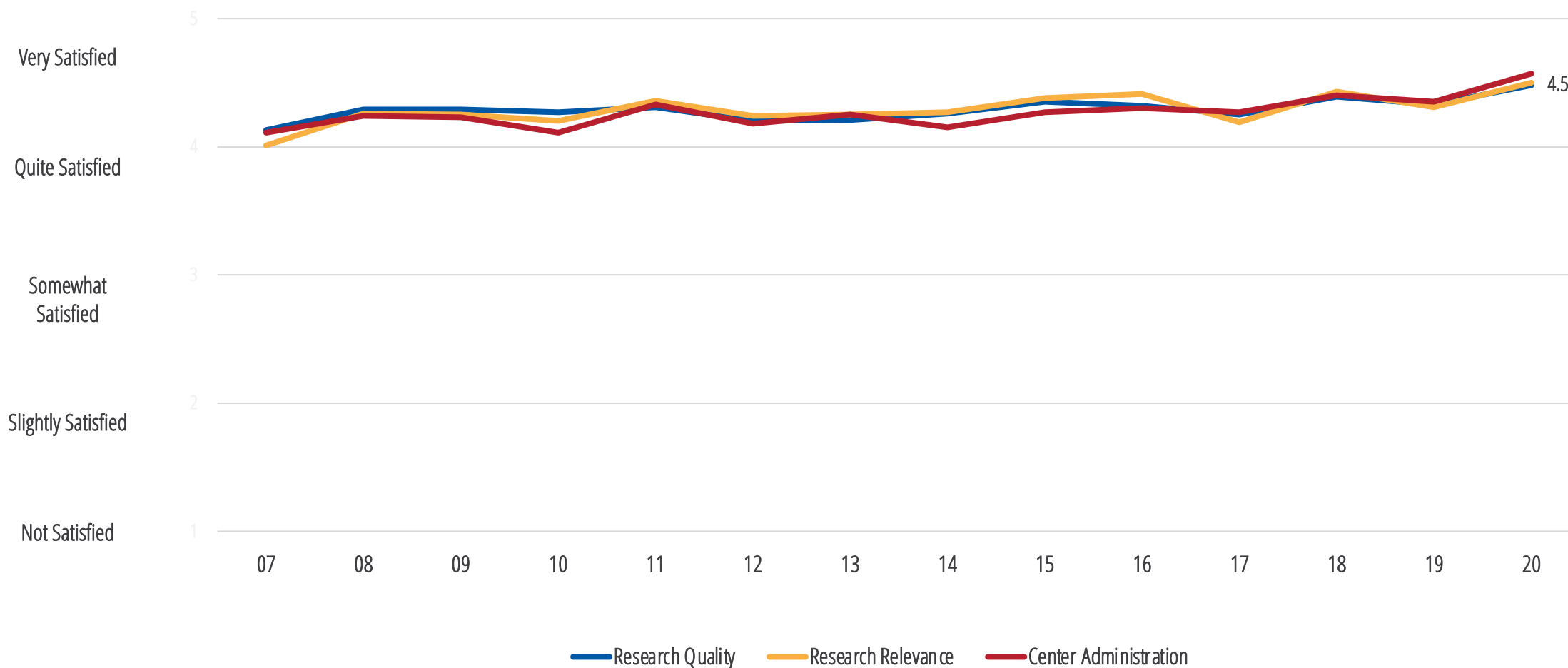
Faculty Long and Short Forms

	Long Form	Short Form
# of items	13	6
# of questions in common	6	6
# of unique questions	7	0
# of centers using form	17	25
Sample size	107	170



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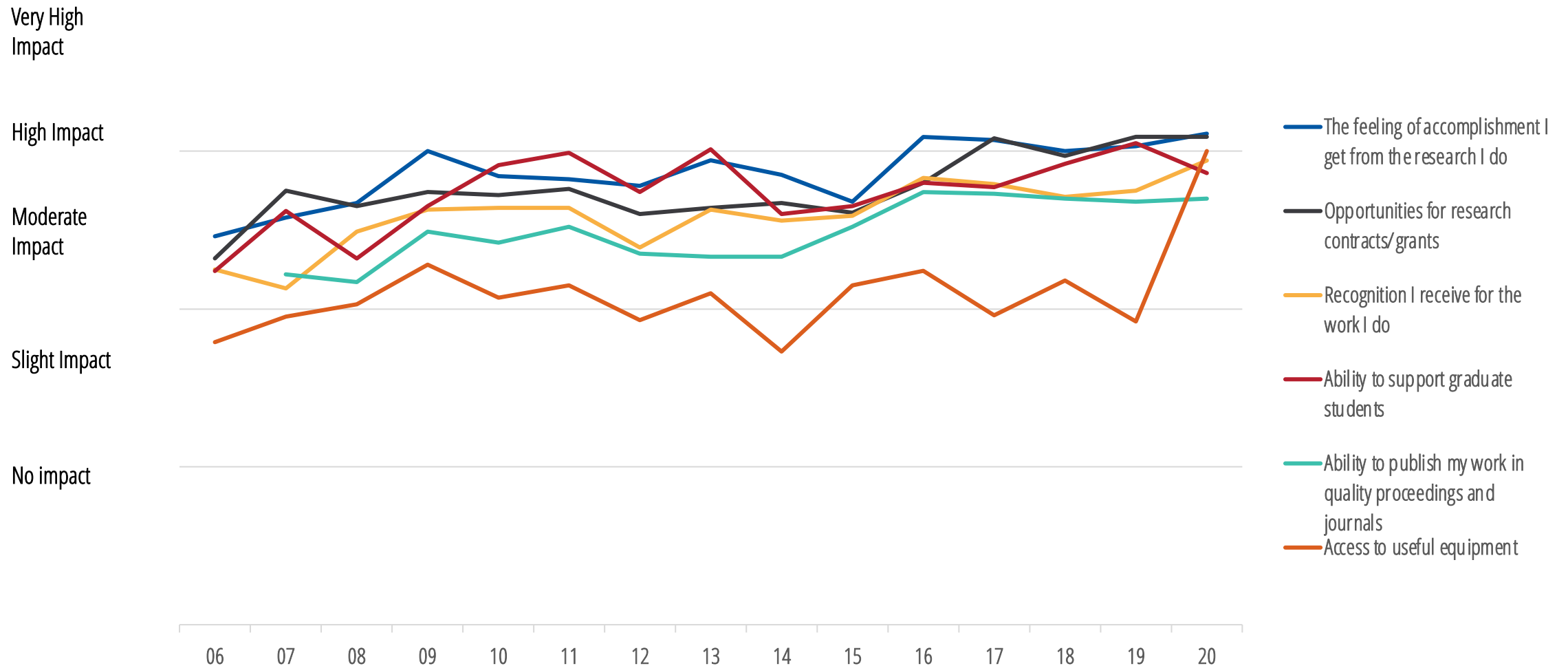
Faculty Satisfaction Over Time



Faculty Benefits Over Time (Long version only)



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Faculty Commitment Over Time

Next year I will submit my best research ideas in a center funded proposal

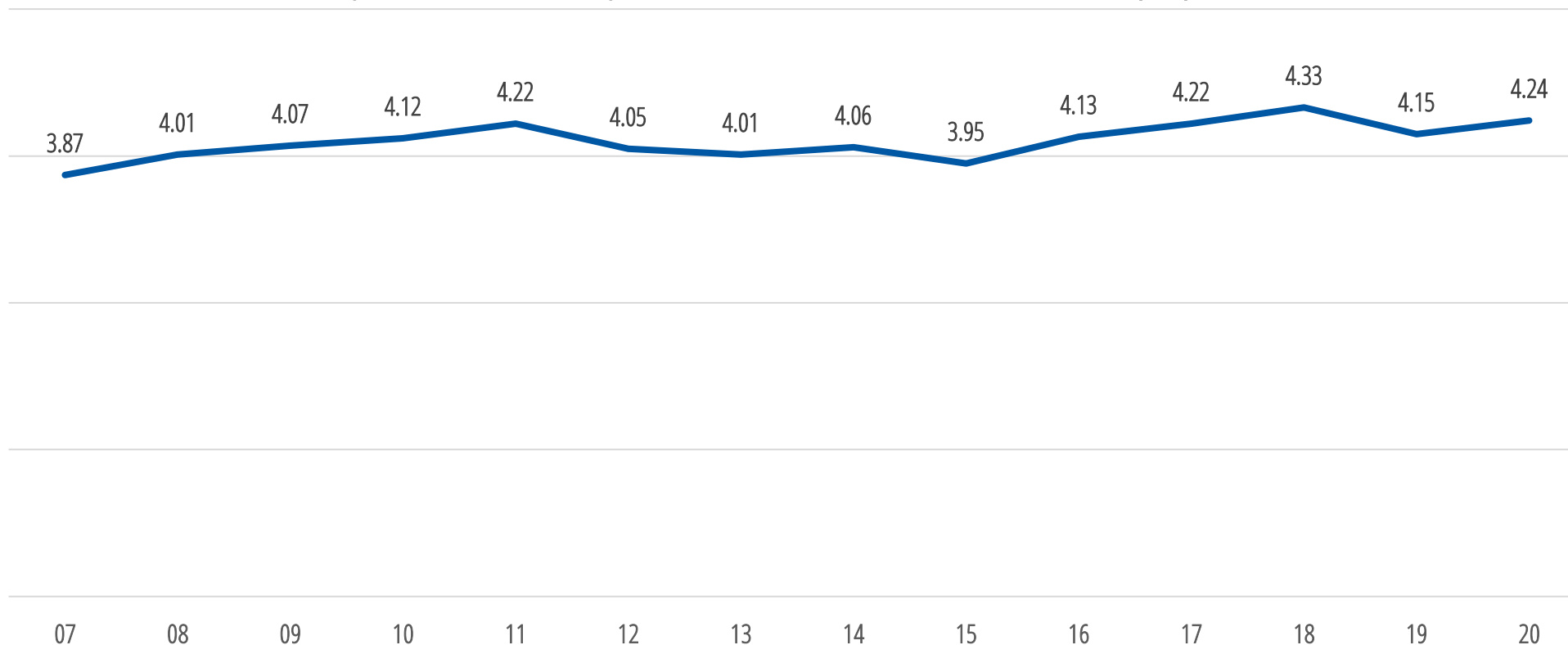
Definitely Yes

Probably Yes

Uncertain

Probably Not

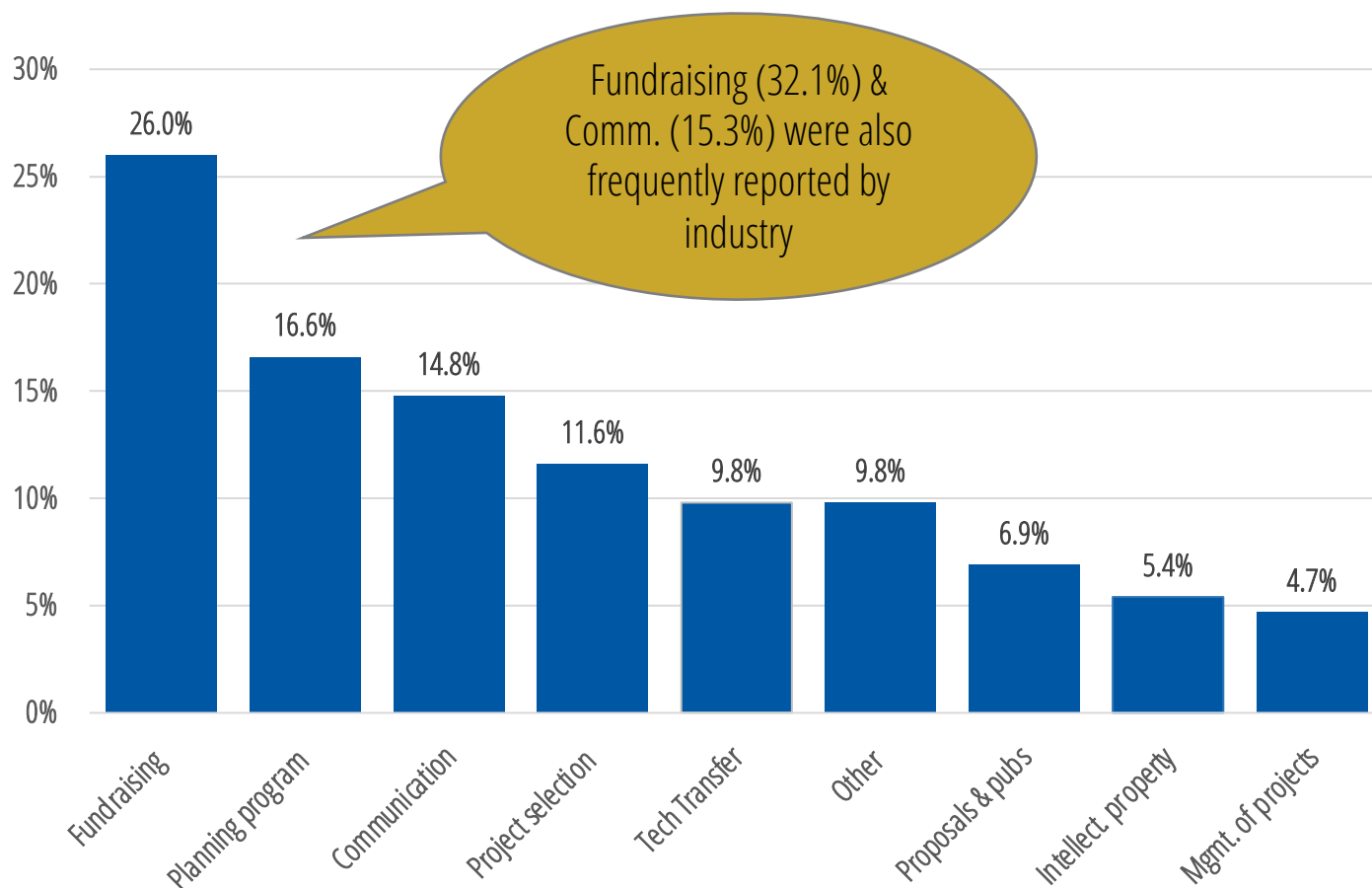
Definitely Not





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FY2020 Faculty Areas for Improvement



“Fundraising is a challenge with many companies limiting their budget and new prospective members unable to travel and see the student posters, meet in person, have those off-meeting conversations in the lobby, etc.”

“Given the number of projects and involved students, [...] more students could be employed by the industry partners.”

“Project selection is a little confusing to the PIs because we don't always get much feedback, and voting results do not always follow previous trends”



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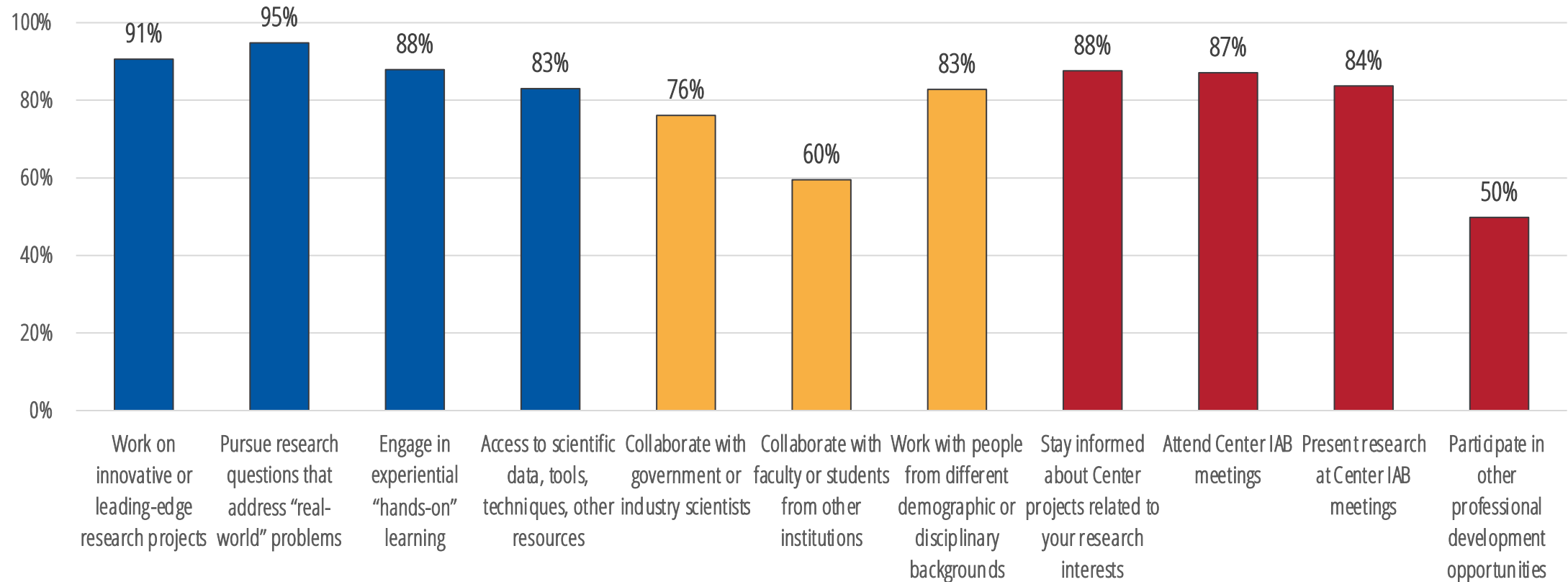
Student Questionnaire

FY2020 Training Opportunities: Indicate whether your Center experience has included the following opportunities



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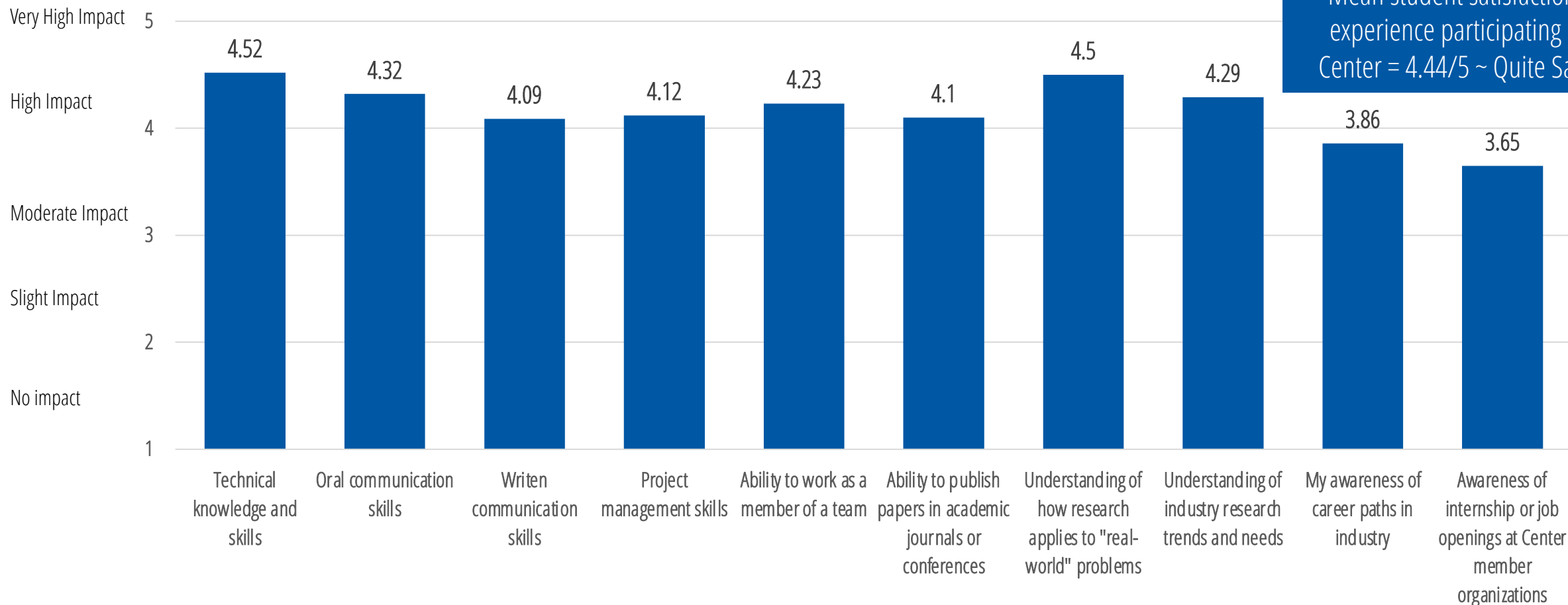
Please indicate whether your Center experience has included the following opportunities: Available and did participate





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FY2019 Impact on Trainee Knowledge and Skills



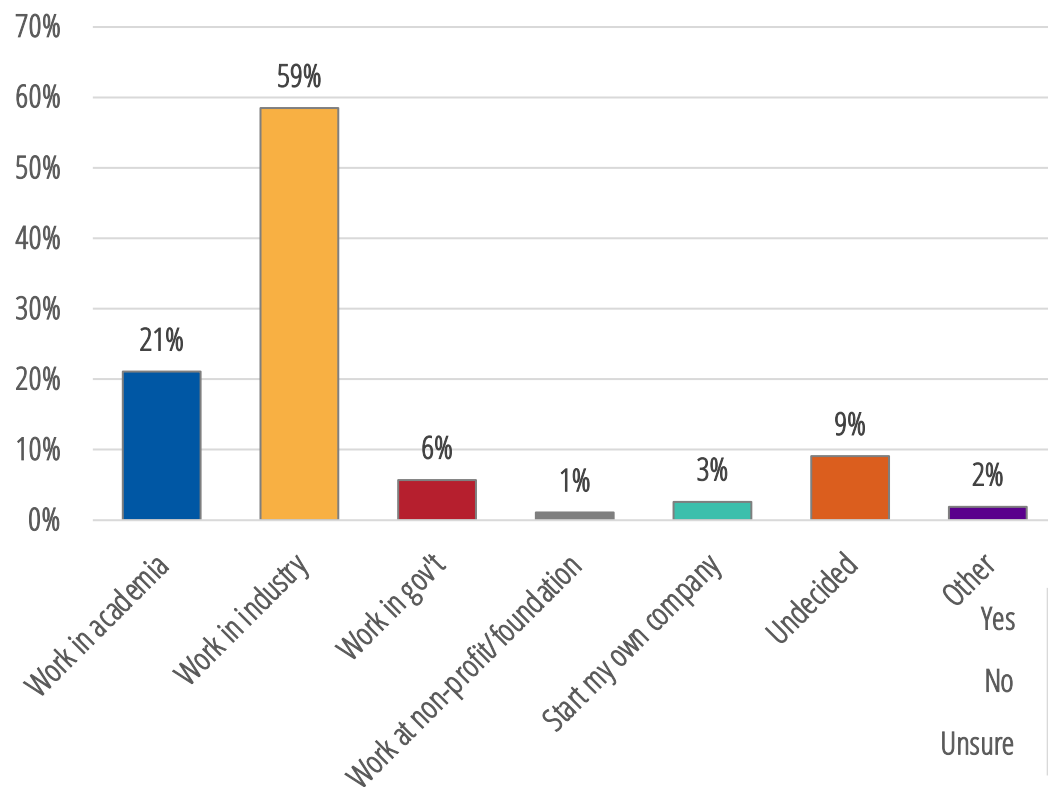
Mean student satisfaction with experience participating in the Center = 4.44/5 ~ Quite Satisfied



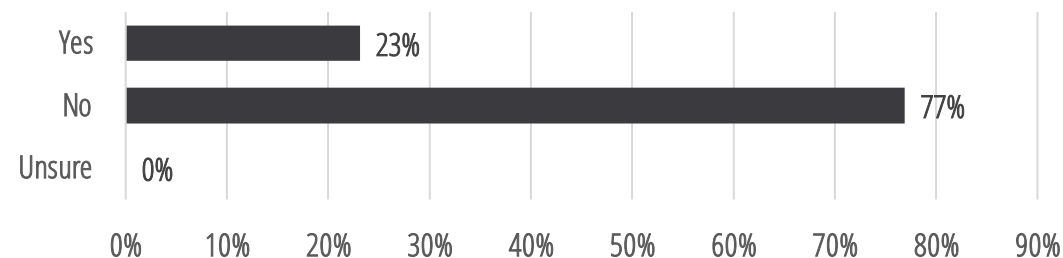
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FY2020 Career Outcomes

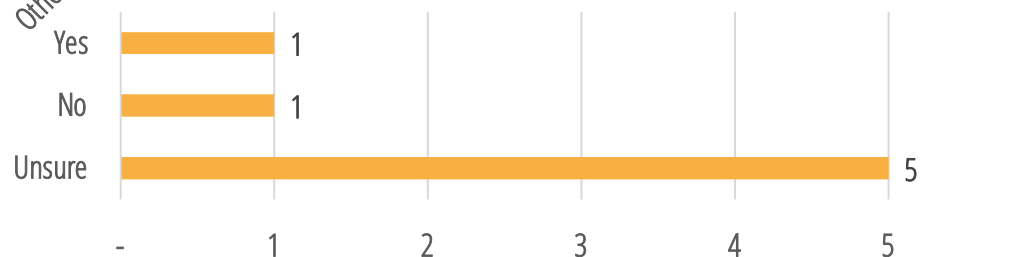
Career Goals



Has your career goal changed as a result of your Center participation?



[If starting own company] Will your company be based on an idea from your Center research?

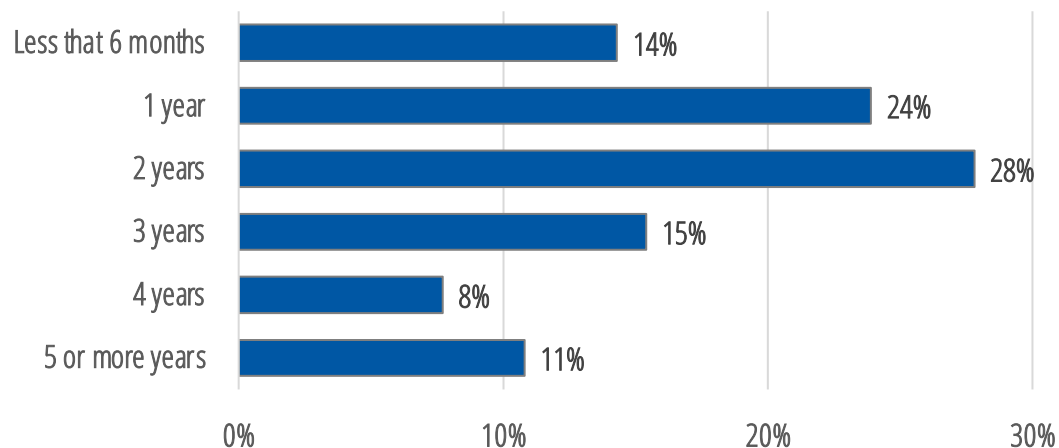




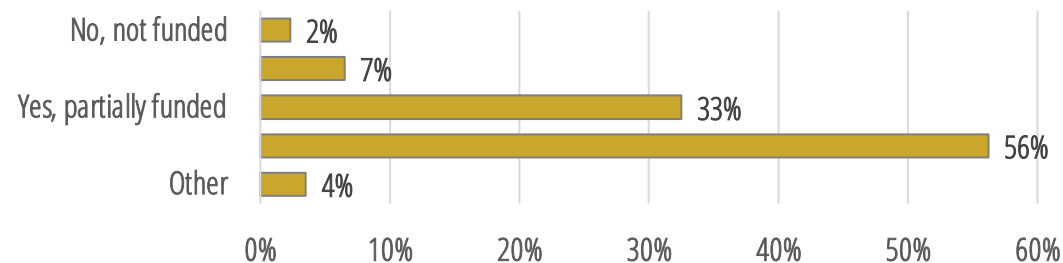
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FY2020 Trainee Characteristics

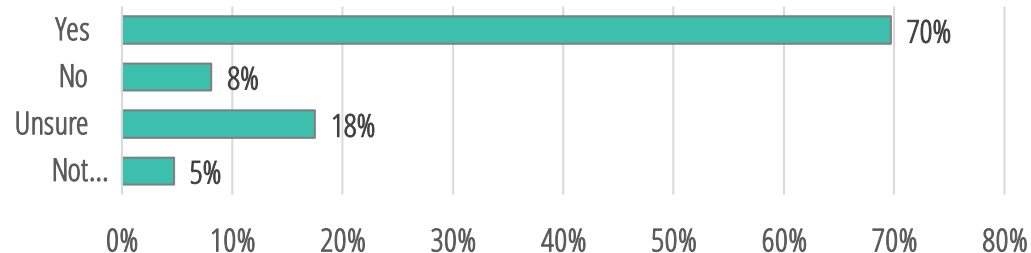
How long have you been involved with the Center?



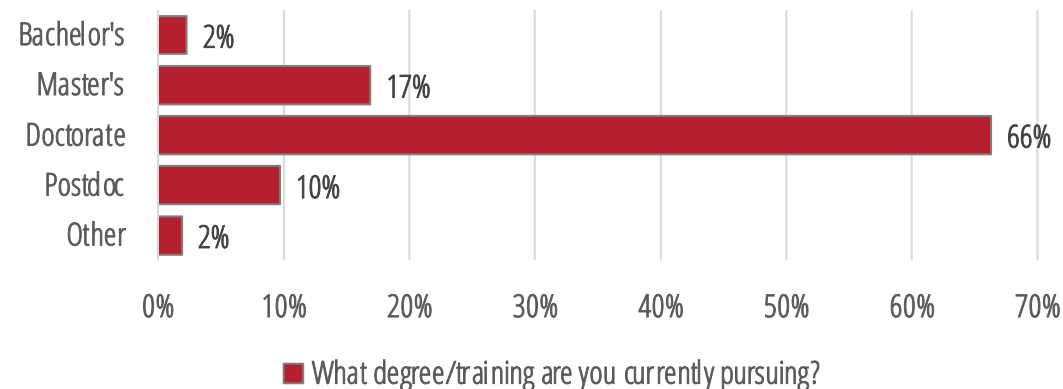
Have you been funded by the Center with which you are affiliated?



Will your thesis, dissertation, or postdoc research be based on a Center project?



What degree/training are you currently pursuing?

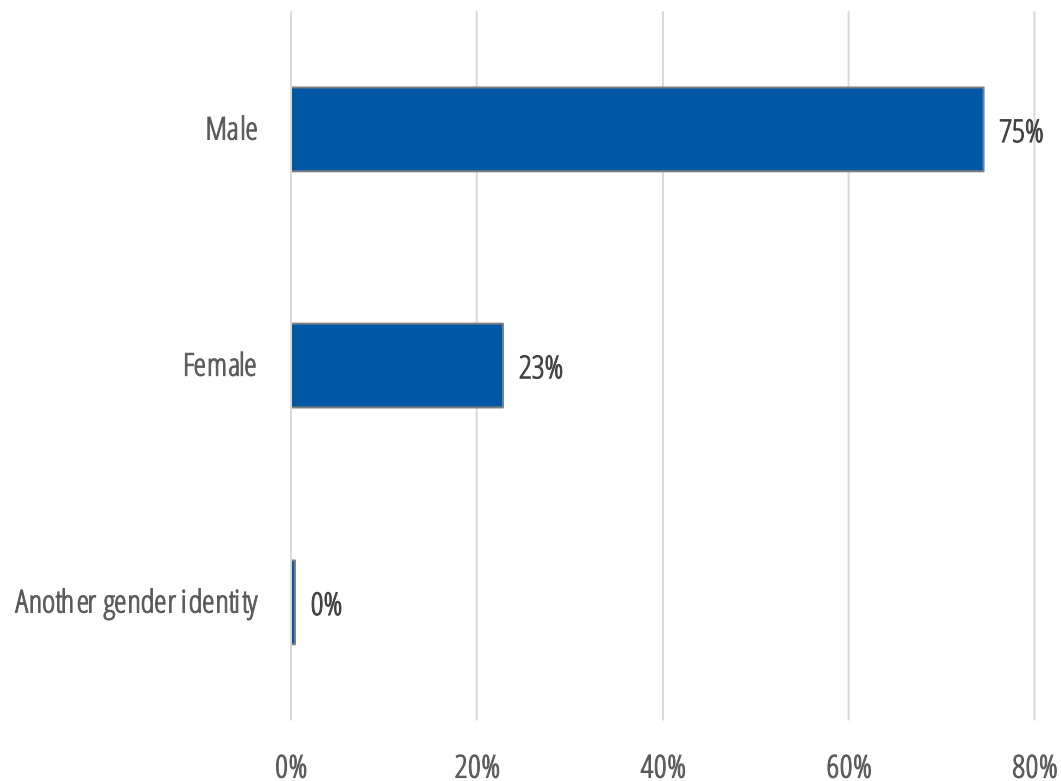




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FY2020 Trainee Characteristics

What is your gender?



What is your citizenship status?

