Highlights of Survey Data FY2018
IUCRC Evaluation Project

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Overview

• Response rate
  • Slides 3-5

• Industry Findings
  • Pulse Survey: Slides 6-13
  • Benefits Inventory: Slides 14-39

• Faculty Findings
  • Slides 40-45

• Student Findings
  • Slides 46-48

• Conclusions
  • Slide 49
## FY2018 Response Rates

<table>
<thead>
<tr>
<th></th>
<th>Center Level</th>
<th>Individual Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pulse</td>
<td>Benefits</td>
</tr>
<tr>
<td>1st Year Reporting Population from CD report [2]</td>
<td>+6</td>
<td>+0</td>
</tr>
<tr>
<td>NCE/Retired/Defunct Centers</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>NCE/Retired/Defunct Centers Reporting [3]</td>
<td>+4</td>
<td>+4</td>
</tr>
<tr>
<td>Centers That Did Not Return Data [5]</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>Data Received</td>
<td>56</td>
<td>54</td>
</tr>
<tr>
<td>Received / Population</td>
<td>83.58%</td>
<td>88.52%</td>
</tr>
<tr>
<td>Received / Available Population</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

[1] Individual-level numbers for Pulse, Benefits and Faculty surveys are different from 2017-2018 CD report because they include 2016-2017 numbers for Grid-Connected Advanced Power Electronic Systems. The CD data for this center was not collected for 2017-2018 report due to a new reporting schedule.

[2] 1st Year Reporting Population from CD report includes numbers from Wind Hazard and Infrastructure Performance which as not listed in FY2017-2018 CD report because it was launched after the end of that fiscal year.

[3] 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.

[4] Population was defined as centers that were at least 1 year old.

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

Industry Response Rate

Industry/University Cooperative Research Centers

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Impact of Measuring Economic Impact on Response Rate

• Spring 2019, administered 2 versions of the benefits inventory:
  • 1 included questions that asked members to estimate the dollar value of benefits they received
    • Research cost savings and follow-on research investment
  • 1 version did not include those dollar value questions
  • Sample (Centers administering the benefits survey on LIFE, Jan-Jun 2019) = 22
    • 12, 55% had dollar questions

• Correlation between whether center had dollar questions (0 – no, 1 – yes) and that center’s benefit inventory response rate (%):
  • $r = -0.150$, $p = 0.505$

• Adding dollar value questions to the survey does not significantly impact response rate
Industry Pulse Survey
Organization Type/Size

Mean Years of Membership = 4.04
Industry Satisfaction

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

“Need to figure out a strategy to bring in new members to increase to research funding pools and to provide more diversity of opinions”

“On the one hand, I like the 20 minutes per project updates, since that forces the story to be punchy and to the point. On the other, a pre-read or some other form of written communication with some more data or detail prior to the meeting would also be good, as some of the details are missed.”
Areas of Improvement Over Time

**Research Planning & Selection**
- Plan research
- Project selection
- Proj. devel. and mgmt.

**Communication & Tech. Transfer**
- Dissem. via pubs
- Tech transfer
- Communications

**Operations**
- IP mgmt.
- IAB meetings
- Fund. & recruit.
- Center personnel
- Other

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Renewal Intentions

- Definitely Yes: 5
  - 4.13
  - 4.17
  - 4.07
  - 4.09
  - 4.05
  - 4.21
  - 4.14
  - 4.22
  - 4.28
  - 4.30

- Probably Yes: 4
  - 09
  - 10
  - 11
  - 12
  - 13
  - 14
  - 15
  - 16
  - 17
  - 18

- Uncertain: 3

- Probably Not: 2

- Definitely Not: 1

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Predicting Renewal Intentions: Regression

- 1st looked at bivariate correlations. Found that satisfaction metrics, as well as several areas for improvement were significantly correlated with renewal intentions.
- Variables that were significant at the bivariate level were included in the multiple regression. Significant predictors of renewal intentions reported below.
- 13% of decision to renew is predicted by satisfaction with center research and meetings, communication, and fundraising and recruitment, $F(3, 394) = 19.649, p < .001, R^2 = .130$
- Members who are more satisfied with center research, center meetings, who think the center needs to improve it’s fundraising and recruitment, and who did not have concerns about center communication had more positive intentions to renew their membership.

<table>
<thead>
<tr>
<th>Renewal Intentions</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction: Center Research</td>
<td>.149</td>
<td>.053</td>
<td>.151</td>
<td>2.795</td>
<td>.005</td>
</tr>
<tr>
<td>Satisfaction: Center Meetings</td>
<td>.184</td>
<td>.057</td>
<td>.190</td>
<td>3.204</td>
<td>.001</td>
</tr>
<tr>
<td>Area for Improvement: Communication</td>
<td>-.217</td>
<td>.087</td>
<td>-.125</td>
<td>-2.485</td>
<td>.013</td>
</tr>
<tr>
<td>Area for Improvement: Fundraising &amp; Recruitment</td>
<td>.161</td>
<td>.076</td>
<td>.106</td>
<td>2.111</td>
<td>.035</td>
</tr>
</tbody>
</table>
Comments for NSF

Positive Comment: 61.84%

Area of Improvement for Center: 23.68%

Area of Improvement for NSF: 14.47%

- “This is an excellent program and the funding schema is very clever, keep this up.”
- “This organization is very well run, efficient and provides huge value in research, with many projects directly applicable from industry.”
- “This is a very important center not only for providing research, but also for training qualified graduates that are in exceptionally short supply.”

- “Still concerned with efforts to grow membership and diversify the kinds of end market industries involved in the Center.”
- “Some of the faculty could be more vested in the program (industry and university together) rather than projects only.”

- “Try not to burden this small center with too many quarterly reports or other bureaucratic overhead that sucks up time and energy.”
- “We are disappointed that the program director hasn’t been able to make it to a meeting this year. As new members, we feel it is important to make direct contact with our Program Director.”
Industry Benefits Inventory
Percent of Members Reporting Any Benefit: by Category

- Networking (Total N=5): 92.72%
- Research & Development (Total N=4): 81.23%
- Tech. Transfer (Total N=5): 80.95%
- Commercial & Financial (Total N=3): 35.57%
Networking Benefits Summary

% of Members Reporting Networking Benefits

- New Connections: 86.80%
- New University Partnerships: 59.40%
- New Industry Partnerships: 30.50%
- Hired Students: 19.90%
- Other: 5.30%
- Any of these: 92.71%

"The connections afforded by the center enabled the organization to hire new employees with strong research experience and technical background."

"Making progress to start a new company to implement a solution based on the research from a partnership formed with a university partner."

"The center is important in maintaining and supporting EXISTING connections and partnerships."

"Led to new potential sales opportunities at accounts we either could not penetrate or did not know had a need for our products."

"The ability to access experts in the field has been greatly beneficial to our organization. Leveraging the research faculty for technical questions and discussions helps to give confidence to our management about the decisions we are making."
Networking Benefits: Students Hired

Average Students Hired per Member Firm

0.24 0.33 0.31 0.38 0.31 0.39 0.34 0.30 0.15 0.29

0.2 0.4 0.6 0.8 1.0

09 10 11 12 13 14 15 16 17 18

1.93/Center
128 Program Wide

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R&D Benefits Summary

% of Members Reporting R&D Benefits

- Helped accelerate pace or completion of some R&D projects at your org.: 40.90%
- Helped org. decide against starting 1+ new R&D projects that otherwise would not have been initiated: 29.10%
- Triggered dev. of new R&D projects or significantly redirected pending projects within org.: 36.70%
- Helped advance the TRL of tech. being developed within your org.: 39.50%
- Any of These: 81.23%

"Could potentially help us monetize several million dollars of R&D already spent, by increasing the value with addition improvement."

"The most important impact of the center work has been in accelerating R&D at my institution by laying the ground work or clearly showing wrong or incorrect research pathways."

"The value has been cutting edge technology results that would have cost 10 times the amount put into this research, not to mention the benefits of society/humankind in which the specific results contribute."

"Time to market. With the center research and technology, we were able to deploy a solution with 18 months of project conception to production."

"Through multiple projects aligned to our research needs, we are able to explore novel new high risk and high reward research which have changed our research path."
R&D Benefits: Research Relevance for the Average Member

For an Average Member, 72% of Center research is 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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Defining Research Efficiency Measures

- Research Cost Avoidance (slides 21-24)
- Research Cost Savings (slides 25-28)
- Stimulated R&D (follow-on funding) (slide 29)

Member Research:
- Proposed Project
  - Project Activity
  - Project Activity
  - Project Activity

Center Research:
- Project Activity
  - Project Results

- Future Project Activity
- Future Project Activity
- Future Project Activity

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

- Sample: N of respondents = 357, N of centers = 54

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

<table>
<thead>
<tr>
<th>Description</th>
<th>Mean</th>
<th>Median</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Member Level Scores</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Average dollar value of avoided projects per respondent organization</td>
<td>$756.24</td>
<td>$533.67</td>
<td>799.45*</td>
</tr>
<tr>
<td><strong>Center Level Scores</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Average dollar value of avoided projects per respondent organization</td>
<td>4999.60</td>
<td>5699.90</td>
<td>5430.75</td>
</tr>
<tr>
<td><strong>Program Level Scores</strong></td>
<td>Sum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Total dollar value of avoided projects by respondent organizations</td>
<td>$269,978,439</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RCA program = Av. RCA member * N of members</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*52 members (16%) have negative RCA that results in large standard deviation.
RCA: Member Level Average (in thousands)
RCA: Program Level Total (in thousands)

- Year 12 (N = 314): $153,091
- Year 13 (N = 385): $219,902
- Year 14 (N = 340): $237,449
- Year 15 (N = 450): $278,502
- Year 16 (N = 327): $187,586
- Year 17 (N = 273): $184,699
- Year 18 (N = 357): $269,978

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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?

• For FY2017-2018, the dollar value questions were administered to only a sample of 12 centers (68 member responses) as part of the experiment to test their effect on the Benefits survey’s response rate. See slide #5 for more information about the experiment and its results.

<table>
<thead>
<tr>
<th>Level of Analysis</th>
<th>Dollar Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member Level Average</td>
<td>$173,684</td>
</tr>
<tr>
<td>Center Level Average</td>
<td>$825,000</td>
</tr>
<tr>
<td>Program Total Reported</td>
<td>$9,900,000</td>
</tr>
</tbody>
</table>
Research Cost Savings:
Member Level Average (in thousands)

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?

*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. See slide #5 for more information about the experiment and its results.
Research Cost Savings
Center Level Average (in thousands)

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?

*For FY2017-2018, 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 survey’s response rate. See slide # … for more information about the experiment and its results.
## Research Cost Savings:
### Program Level Total (in thousands)

<table>
<thead>
<tr>
<th>Center</th>
<th>Program Level Total (in thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 (N = 255)</td>
<td>$57,860</td>
</tr>
<tr>
<td>13 (N = 360)</td>
<td>$45,814</td>
</tr>
<tr>
<td>14 (N = 358)</td>
<td>$59,285</td>
</tr>
<tr>
<td>15 (N = 450)</td>
<td>$62,850</td>
</tr>
<tr>
<td>16 (N=311)</td>
<td>$43,300</td>
</tr>
<tr>
<td>18 (N=68)*</td>
<td>$9,900</td>
</tr>
</tbody>
</table>

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?

*For FY2017-2018, 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 survey’s response rate. See slide # ... for more information about the experiment and its results.*
Follow-on Funding: Program Total (in thousands)

Dollar value of new R&D projects, or significantly redirected pending projects within your organization

*For FY2017-2018, 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 survey’s response rate. See slide #5 for more information about the experiment and its results.
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
- Helped your organization decide against starting one or more new R&D projects that otherwise would have been initiated
- Triggered development of new R&D projects, or significantly redirected pending projects within your organization

Helped accelerate the pace and/or completion of some R&D projects now underway at (or contracted by) your organization: 41%
Helped your organization decide against starting one or more new R&D projects that otherwise would have been initiated: 37%
Triggered development of new R&D projects, or significantly redirected pending projects within your organization: 29%
Technology Translation Benefits Summary

% of Members Reporting Technology Translation Benefits

- **Accessed capabilities and insights (e.g., center facilities, equipment, faculty or student capabilities, insights from other members, etc.) to which your firm would not otherwise...**
  - 57%

- **Licensed center’s IP**
  - 5%

- **Produce your own IP related to research at the center**
  - 6%

- **Helped your org. identify new applications for technology trying to develop**
  - 45%

- **Helped your org. anticipate or address some regulatory**
  - 16%

- **Any of These**
  - 81%

“**Keeping informed on the latest state of numerous technologies that we may incorporate in future products. This is one mechanism for us to spread out the research risks and invest in focused areas.”**

“Utilizing pre-competitive Center results toward evaluating technology feasibility; leveraging student skill sets to attempt hand-over of bench testing capabilities in-house.”
Commercial & Financial Benefits Summary

% of Members Reporting Commercial Benefits

- Launch new products or services based on what you learned from the center: 7%
- Improve existing products or services based on what you learned from the center: 22%
- Improve operational or manufacturing processes based on what you learned from the center: 14%
- Any of These: 36%

“We have licensed [center] technology at the member rate, which we believe will save $35,000 + in fees.”

“The most important benefit to us is that the center helped to analyze and develop new product features where we don't have the financial and technical resources to engage in. We therefore save R&D dollars for about 1-2 engineers from the technology translation.”
Center Contribution to Commercial Outcomes

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

- 19%: No, the center played a critical role in realizing these benefits
- 68%: Yes, but the benefits would have been delayed without the center’s involvement
- 13%: Yes, the center had only limited influence on our ability to realize these benefits

11/13/2019
Effect of Member Years on Benefits

- Ran a bivariate correlation to identify benefits that were correlated with years as a member. Benefits that were significantly correlated at the bivariate level were included in a multiple regression.
- Members years significantly predicted benefits $F(4, 329) = 4.525, p = .006$
- Specifically, members with more years of membership were more likely to report that they licensed Center’s IP (technology or knowledge transfer benefit), $p = .006$

<table>
<thead>
<tr>
<th>Member Years</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Networking: Hired any students as a full-time employee, contractor, intern</td>
<td>.766</td>
<td>.569</td>
<td>.074</td>
<td>1.348</td>
<td>.179</td>
</tr>
<tr>
<td>R&amp;D: Helped your org. decide against starting 1 or more new R&amp;D projects that otherwise would not have been initiated</td>
<td>.828</td>
<td>.489</td>
<td>.092</td>
<td>1.694</td>
<td>.091</td>
</tr>
<tr>
<td>Commercial or Financial: Improved existing products or services based on what you learned from the Center</td>
<td>.813</td>
<td>.543</td>
<td>.082</td>
<td>1.497</td>
<td>.135</td>
</tr>
<tr>
<td>Tech. Transfer: Licensed Center’s IP</td>
<td>2.694</td>
<td>.982</td>
<td>.148</td>
<td>2.743</td>
<td>.006**</td>
</tr>
</tbody>
</table>

Note. *p<.05, **p<.01
Predicting Commercial Outcomes

• Wanted to know if there are any leading indicator benefits that may predict commercial outcomes.

• Ran a bivariate correlation to identify benefits that were correlated with any of the commercial benefits evaluated. Benefits that were significantly correlated at the bivariate level were included in a multiple logistic regression.

• Ran logistic multivariate regressions with each of the 3 commercial outcomes (Launch new products or services based on what you learned from the Center, Improve existing products or services based on what you learned from the Center, and Improve manufacturing or operational processes based on what you learned from the Center) and all other benefits.
Predicting Commercial/Financial Benefits: Launch new products or services

- The logistic regression model was statistically significant $X^2(4) = 34.37$, $p < .01$. Members who developed partnerships with faculty were **3.74 times more likely**, and members whose participation in the center helped advance the TRL of their internally developed technology were **6.63 times more likely** to launch new products or services based on what they learned at the center.

<table>
<thead>
<tr>
<th>Launch new products or services based on what you learned from the Center</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>$p$</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Networking</strong>: Developed partnerships with university faculty or research scientists</td>
<td>1.319</td>
<td>.644</td>
<td>4.192</td>
<td>.041*</td>
<td>3.740</td>
</tr>
<tr>
<td><strong>Networking</strong>: Hired any students as a full-time employee, contractor, intern</td>
<td>.863</td>
<td>.459</td>
<td>3.522</td>
<td>.061</td>
<td>2.368</td>
</tr>
<tr>
<td><strong>R&amp;D</strong>: Helped advance the Tech. Readiness Level of technology being developed within your org.</td>
<td>1.892</td>
<td>.575</td>
<td>10.816</td>
<td>.001**</td>
<td>6.629</td>
</tr>
<tr>
<td><strong>Tech. Transfer</strong>: Accessed capabilities and insights to which your firm would not otherwise access</td>
<td>.298</td>
<td>.518</td>
<td>.332</td>
<td>.565</td>
<td>1.347</td>
</tr>
</tbody>
</table>

*Note. * $p < .05$, ** $p < .01$*
Predicting Commercial/Financial Benefits: Improve existing products or services

- The logistic regression model was statistically significant $X^2(4) = 36.77, p < .01$. Members whose participation in the center helped advance the TRL of their internally developed technology were \textbf{1.76 times more likely}, and members who accessed capabilities and insights to which their firm would not otherwise have access to were \textbf{2.75 times more likely} to improve products or services.

<table>
<thead>
<tr>
<th>Improve existing products or services based on what you learned from the Center</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>$p$</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Networking:</strong> Developed partnerships with university faculty or research scientists</td>
<td>.084</td>
<td>.282</td>
<td>.088</td>
<td>.767</td>
<td>1.087</td>
</tr>
<tr>
<td><strong>Networking:</strong> Hired any students as a full-time employee, contractor, intern</td>
<td>.585</td>
<td>.308</td>
<td>3.617</td>
<td>.057</td>
<td>1.795</td>
</tr>
<tr>
<td><strong>R&amp;D:</strong> Helped advance the Tech. Readiness Level of technology being developed within your org.</td>
<td>.565</td>
<td>.273</td>
<td>4.282</td>
<td>.039*</td>
<td>1.759</td>
</tr>
<tr>
<td><strong>Tech. Transfer:</strong> Accessed capabilities and insights to which your firm would not otherwise access</td>
<td>1.012</td>
<td>.303</td>
<td>11.179</td>
<td>.001**</td>
<td>2.750</td>
</tr>
</tbody>
</table>

Note. *$p < .05$, **$p < .01$
Predicting Commercial/Financial Benefits: Improve manufacturing or operational processes

The logistic regression model was statistically significant $X^2(4) = 28.87$, $p < .01$. Members whose participation in the center helped *advance the TRL of their internally developed technology* were **2.49 times more likely**, and members who *accessed capabilities and insights to which their firm would not otherwise have access* to were **4.52 times more likely** to improve manufacturing or operational processes.

<table>
<thead>
<tr>
<th>Improve manufacturing or operational processes based on what you learned from the Center</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>$p$</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Networking:</strong> Developed partnerships with university faculty or research scientists</td>
<td>.324</td>
<td>.355</td>
<td>.832</td>
<td>.362</td>
<td>1.382</td>
</tr>
<tr>
<td><strong>Networking:</strong> Hired any students as a full-time employee, contractor, intern</td>
<td>.459</td>
<td>.357</td>
<td>1.660</td>
<td>.198</td>
<td>1.583</td>
</tr>
<tr>
<td><strong>R&amp;D:</strong> Helped advance the Tech. Readiness Level of technology being developed within your org.</td>
<td>.912</td>
<td>.335</td>
<td>7.400</td>
<td>.007**</td>
<td>2.489</td>
</tr>
<tr>
<td><strong>Tech. Transfer:</strong> Accessed capabilities and insights to which your firm would not otherwise access</td>
<td>1.508</td>
<td>.433</td>
<td>12.133</td>
<td>.000**</td>
<td>4.516</td>
</tr>
</tbody>
</table>

*Note.* *p*<.05, **p**<.01
Faculty Questionnaire

Select Results
## Faculty Long and Short Forms

<table>
<thead>
<tr>
<th></th>
<th>Long Form</th>
<th>Short Form</th>
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<tbody>
<tr>
<td># of items</td>
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<td>6</td>
</tr>
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<td># of questions in common</td>
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<tr>
<td># of unique questions</td>
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<td>0</td>
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<td># of centers using form</td>
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<td>17</td>
</tr>
<tr>
<td>Sample size</td>
<td>141</td>
<td>185</td>
</tr>
</tbody>
</table>
Faculty Satisfaction

![Graph showing faculty satisfaction over years](image)

- **Very Satisfied**
- **Quite Satisfied**
- **Somewhat Satisfied**
- **Slightly Satisfied**
- **Not Satisfied**

**Axes:***
- X-axis: Years 2007 to 2018
- Y-axis: Satisfaction Levels

**Lines:***
- Research Quality
- Research Relevance
- Center Administration

**Legend:**
- Research Quality
- Research Relevance
- Center Administration

**IUCRC Evaluation Project at NCSU**

Page 41
Faculty Benefits (Long version only)

- The feeling of accomplishment I get from the research I do
- Opportunities for research contracts/grants
- Recognition I receive for the work I do
- Access to useful equipment
- Ability to support graduate students
- Ability to publish my work in quality proceedings and journals
Faculty Commitment to submit best research ideas in a center funded proposal

- Definitely Yes: 5
- Probably Yes: 4
- Uncertain: 3
- Probably Not: 2
- Definitely Not: 1

Year:
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
- 2017
- 2018

IUCRC Evaluation Project at NCSU
Faculty Areas for Improvement

“Need to produce more promotional materials, summarize achievements, and present them to more potential members. Also better explain how the IUCRC program works.”

“Communication is too focused on a hierarchical structure; there should be an email distribution list to all participants in the academic partners, and all should be able to use it for communicating organizational information.”

“Sometimes it is difficult to get good input for what to propose the next year that is continuing from last year. Sometimes there are a lot of new project ideas, but it isn't really helpful to always start over every year with a new topic.”

Fundraising (23.5%) & Comm. (17.2%) were also frequently reported by industry.
Student Questionnaire
Satisfaction with Center Experience

- **Technical quality of research**
- **Communications between students and industrial scientists**
- **Communications between students and faculty**
- **Communication among the students**
- **Opportunity to learn about research in industrial settings**
- **Opportunity to participate in applied research**

Completely Satisfied

A Great Deal Satisfied

Moderately Satisfied

Not at all Satisfied
Comparative Evaluation

Comparing your work in the center with other faculty projects you have participated in, how satisfied are you?

- Technical quality of research
- Communications between students and faculty
- Opportunity to learn about research in industrial settings
- Communications between students and industrial scientists
- Communication among the students
- Opportunity to participate in applied research

Axis Title

Comparative Evaluation

11/13/2019 IUCRC Evaluation Project at NCSU
How Should These Survey Results be Used?

• Trends are probably much more interpretable at local center level
  • Director leaves; research direction changes; move from one-on-one to consortial center
• Benchmark center against previous year and national norms
  • By comparing means and standard deviations, evaluators can see how their centers compare to national “norms”
• Informative for looking at the impact of survey design on response rate

Questions?