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2003-2004 Process Outcome Survey Results

Descriptive Statistics Compiled from Industry and Faculty Surveys

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REPORT PROCESSING & DATA ISSUES

This report provides basic descriptive statistics on the evaluator Process Outcome Questionnaire. Data was collected during the fall of 2004 and refers to the center activity for FY 2003-2004.

Since most evaluators use this report to benchmark their center compared to a program-wide “norm”, we have reported “center-level” means and standard deviations. Means for each center were used to calculate a center-level mean and are therefore unweighted aggregate means. Because questions that require a numeric answer (e.g. number of dollars) often have highly skewed distributions, we also reported the medians for these variables. For forced choice questions, frequencies and standard deviations for individual respondents were also reported.

Industry Questionnaires

Question #6 on the Industrial Member survey (the number of new projects supported by industry and the dollar value of these projects) was reported in three ways. First, we reported the center-level mean, median, and standard deviation for all respondents. Second, we reported a center level mean, median, and standard deviation only for those who reported supporting at least one new project. Finally, an average cost per project was calculated from the figures obtained for those reporting at least one new project.

Data for the Industry Short Questionnaire is presented in the same format as the regular Industry Questionnaire. This questionnaire is for use with centers that have surpassed five years of funding (refer to Evaluator’s Notebook, section 3.2.1). Since both the industry long and industry short questionnaires share some of the same questions, data for these shared questions was pooled for analysis. These questions are marked in the report with a *.

Faculty Questionnaires

The faculty process outcome questionnaire underwent a major revision for 2003-2004 data collection. This year’s faculty data reflects responses from questions that are either completely new (i.e., Questions #4d, 5a, 5c, 5f, 6f, 7a, 7b & 9), slightly revised (or i.e., Questions #5b, 5d, 5e, 6b, 6d, & 6e), or the same (i.e., Questions #1a-c, 2, 4a-c, 6a, 6c, 10, 11a & 11b). Therefore, evaluators should use this faculty report to benchmark their center for next year.

RESPONSE RATES

Category	Center Level		Individual Level	
	Industry	Faculty	Industry	Faculty
<i>Response Frequency</i>				
Population from CD report	46	46	666	608
Retired Centers	4	4	53	49
Inactive Centers	2	2	-	-
Population ^a	40	40	613	559
Centers Excused from Evaluation ^b	6	9	43	129
Wrong Survey Format Used	0	6	0	75
Centers who did not return P/O Data	0	3	0	20
Available Population	34	22	570	335
Data Received	34	22	270	166
<i>Response Rates</i>				
Received / Population	85%	55%	44.04%	29.7%
Received / Available Population	100%	100%	47.37%	49.55%

a. Population was defined as centers that were at least 1 year old.

b. Centers were excused for reasons such as being in the midst of center restructuring and being in evaluator transition.

LONG INDUSTRY FORM VS. SHORT INDUSTRY FORM

	Long Form	Short Form
# of items	46	29
# of questions in common	22	22
# of unique questions	24	7
# of centers using form	20	14
Sample size	161	109

Industry Results: 2003-2004

Table 1: Interest In Research

1. What percentage of Center research projects do you take an active interest in?*

<u>Individual Frequencies</u>										<u>Center Level</u>	
0-19%		20-39%		40-59%		60-79%		80-100%		Mean	S.D.
N	%	N	%	N	%	N	%	N	%		
44	16.6	57	21.5	79	29.8	62	23.4	23	8.7	2.93	0.73

3. How long, on average, do you feel that it should take for a Center research project to yield tangible results? (in Months)

Mean	S.D.
16.61	4.82

Table 2: Satisfaction with Research Program

4. During the past year, how satisfied were you with the following features of the Center's research program?

	<u>Individual Frequencies</u>										<u>Center Level</u>	
	Not Satisfied 1		Slightly Satisfied 2		Satisfied 3		Quite Satisfied 4		Very Satisfied 5		Mean	S.D.
	N	%	N	%	N	%	N	%	N	%		
a. Capabilities of faculty and graduate students	0	0.0	2	1.3	17	10.9	89	57.1	48	30.8	4.19	0.28
b. Breadth of the research topics covered *	2	0.8	7	2.7	61	23.1	153	58.0	41	15.5	3.82	0.42
c. Focus of the research *	1	0.4	15	5.7	70	26.4	146	55.1	33	12.5	3.72	0.36
d. Technical quality of research	0	0.0	2	1.3	26	16.5	93	58.9	37	23.4	4.03	0.39
e. Innovative quality of research	0	0.0	3	1.9	40	25.6	93	59.6	20	12.8	3.86	0.31
f. Relevance of research to my organizations short-term needs	5	3.2	27	17.3	63	40.4	44	28.2	17	10.9	3.31	0.58
g. Relevance of research to organizations long term needs	1	0.6	9	5.7	49	31.2	83	52.9	15	9.6	3.70	0.31

* = Included in both long and short forms of the IUCRC Industry Questionnaire

Table 3: Follow-On Research

6. During the past year, approximately how many center-stimulated research projects were supported by your organization (include projects contracted to outside performers)? Please estimate the dollar value of all center-stimulated research projects (exclude membership

	<u>Center Level</u>			Total Dollar Value of All Projects		
	Number of Projects	<u>Center Level</u>				
	Mean ₁	Median	S.D.	Mean ₂	Median	S.D.
a. Number of research projects supported by your organization Total Sample: N of Members=271 , N of Centers=34	1.46	1.17	1.55	187,271	84,500	317,012
b. Number of research projects supported by your organization Respondents reporting at least 1 project N of Members= 121 , N of Centers=33	2.33	1.75	2.22	287,846	102,500	479,091
c. Ave. cost of projects for respondents reporting at least 1 project N of Members= 113 , N of Centers=32	1		184,764	56,674	455,806	

1. These figures were calculated by dividing the dollar amounts and the number of projects calculated in step b.

2. For this report, any answer over 5 million was judged to be a miscode and was recoded to hundred of thousands of dollars. These scores will be validated and updated in a future report.

Table 4: Technical Benefits

7. During the past year, to what extent has participation in the Center contributed to the technical benefits for your organization?

	<u>Individual Frequencies</u>										<u>Center Level</u>			
	No Impact		Slight Impact		Moderate Impact		High Impact		Very High Impact		Not Applicable Not Applicable		Mea	S.D.
	1	2	3	4	5	N	%	N	%	N	%	N		
<u>Research and Development</u>														
a. Increased your general technical awareness and/or capabilities	2	1.3	12	7.5	54	34.0	67	42.1	22	13.8	2	1.3	3.66	0.44
b. Accelerated or improved existing research projects	15	9.4	32	20.1	65	40.9	26	16.4	13	8.2	8	5.0	2.94	0.57
c. Stimulated new research projects	25	15.7	41	25.8	45	28.3	31	19.5	11	6.9	6	3.8	2.73	0.61
d. Contributed to development of intellectual property in my org.	43	27.0	39	24.5	39	24.5	19	11.9	5	3.1	14	8.8	2.40	0.67
<u>Commercialization</u>														
e. Improvements to existing products, processes, or services	29	18.5	35	22.3	50	31.8	21	13.4	4	2.5	18	11.5	2.53	0.63
f. Development of new products, processes, and/or services	31	19.9	36	23.1	42	26.9	27	17.3	4	2.6	16	10.3	2.57	0.55
g. Improved sales or profitability	63	40.4	33	21.2	25	16.0	5	3.2	2	1.3	28	17.9	1.84	0.48
h. Created or helped maintain jobs in your organization	66	42.9	31	20.1	23	14.9	8	5.2	1	0.6	25	16.2	1.89	0.55

* = Included in both long and short forms of the IUCRC Industry

FY: 2003-2004

Table 5: Other Benefits

10. During the past year, to what extent has participation in the center contributed to the benefits for your organization?

	<u>Individual Frequencies</u>										<u>Center Level</u>			
	No Impact 1		Slight Impact 2		Moderate Impact 3		High Impact 4		Very High Impact 5		Not Applicable Not Applicable N/A		Mea	S.D.
	N	%	N	%	N	%	N	%	N	%	N	%		
a. Enhanced your ability to recruit talented students	57	36.3	28	17.8	33	21.0	9	5.7	4	2.5	26	16.6	2.06	0.63
b. Improved cooperation with scientists and technical resources outside your organization.	9	5.7	19	12.0	69	43.7	39	24.7	18	11.4	4	2.5	3.29	0.56
c. Improved cooperation with other Center members.	14	8.9	29	18.4	58	36.7	36	22.8	12	7.6	9	5.7	3.06	0.39
	14	8.9	29	18.4	58	36.7	36	22.8	12	7.6	9	5.7	3.06	0.39
11. During the past year, how many students trained in the Center projects were hired by your organization?*													Mean .20	S.D. 0.29

Table 6: Center Administration and Operations

12. During the past year, how satisfied were you with the following features of the Center's administrative operations?

	<u>Individual Frequencies</u>										<u>Center Level</u>	
	Not Satisfied 1		Slightly Satisfied 2		Satisfied 3		Quite Satisfied 4		Very Satisfied 5		Mea	S.D.
	N	%	N	%	N	%	N	%	N	%		
a. Communication between Center staff and your organization	2	1.3	9	5.8	29	18.6	84	53.8	32	20.5	3.98	0.39
b. Center-related proposals, reports and publications (e.g. quality and timeliness)	1	0.6	13	8.3	42	26.8	77	49.0	24	15.3	3.74	0.40
c. Planning and development of the research program (e.g. new projects, changes in research areas)	3	1.9	10	6.4	55	35.0	75	47.8	14	8.9	3.67	0.33
d. Management of ongoing research projects	0	0.0	12	7.7	40	25.8	82	52.9	21	13.5	3.79	0.37
e. Project selection process	1	0.6	17	11.0	39	25.3	75	48.7	22	14.3	3.72	0.40
f. Technology transfer activities	3	2.2	16	11.5	60	43.2	50	36.0	10	7.2	3.42	0.44
g. Center fundraising (e.g. member recruitment, grant-writing)	1	0.7	17	11.4	57	38.3	59	39.6	15	10.1	3.53	0.37
h. Management of intellectual property issues	2	1.4	13	9.3	55	39.3	54	38.6	16	11.4	3.63	0.45
	2	1.4	13	9.3	55	39.3	54	38.6	16	11.4	3.63	0.45

* = Included in both long and short forms of the IUCRC Industry Questionnaire

FY: 2003-2004

Table 7: General Evaluation

14. To what extent are you generally satisfied with the operation and activities of the center?*

<u>Individual Frequencies</u>										<u>Center Level</u>	
Not Satisfied 1		Slightly Satisfied 2		Satisfied 3		Quite Satisfied 4		Very Satisfied 5		Mean	S.D.
N	%	N	%	N	%	N	%	N	%		
1	0.4	9	3.4	60	22.7	149	56.4	45	17.0	3.86	0.46

15. Will your organization renew its membership?*

<u>Individual Frequencies</u>										<u>Center Level</u>	
Definitely Not 1		Probably Not 2		Uncertain 3		Probably Yes 4		Definitely Yes 5		Mean	S.D.
N	%	N	%	N	%	N	%	N	%		
2	0.8	9	3.4	38	14.4	139	52.9	75	28.5	4.03	0.66

Table 8: Membership Information

18. Which ONE of the following categories best describes your division's PRIMARY research

<u>Individual Frequencies</u>									
Category	N	%	Category	N	%	Category	N	%	
Food	1	0.4	Primary Metals	14	5.8	Electrical, Electronic or communication equip.	53	21.9	
Textiles or Apparel	0	0.0	Fabricated Metals	2	0.8	Professional or Scientific Instruments	9	3.7	
Lumber, Wood, or Furniture	3	1.2	Machinery	11	4.5	Surgical or Medical Supplies	3	1.2	
Paper	1	0.4	Motor Vehicles	8	3.3	Other Manufacturing	29	12.0	
Chemical	44	18.2	Other Transportation	4	1.7	Health Services	1	0.4	
Petroleum	2	0.8	Aircraft or Missiles	8	3.3	Mining	7	2.9	
Rubber	2	0.8	Munitions	2	0.8	Building or	5	2.1	
Stone, Clay, or Glass	9	3.7	Other Military Equipment	10	4.1	Other Non-	14	5.8	

* = Included in both long and short forms of the IUCRC Industry Questionnaire

Table 9: Member Descriptives

19. Years organization has been a member of the center?*

<u>Individual Frequencies</u>										<u>Center Level</u>	
0-1 Years 1		2-3 Years 2		4-5 Years 3		6-7 Years 4		8+ Years 5		Mean	S.D.
N	%	N	%	N	%	N	%	N	%		
42	16.3	76	29.6	57	22.2	29	11.3	53	20.6	2.90	1.37

20. Organization is? *

	<u>Individual Frequencies</u>	
	N	%
1. For-Profit Large (> 500 employees)	180	68.4
2. For-Profit Small (< 500 employees)	33	12.5
3. Non-Profit/Government	50	19.0

21. Which functional group pays for your organization's membership in this Center?*

	<u>Individual Frequencies</u>	
	N ^a	%
1. Corporate	58	22.8
2. Research	119	46.9
3. Development	43	16.9
4. Engineering	42	16.5
5. Product Development	25	9.8
6. Manufacturing	13	5.1
7. Marketing/Sales	12	4.7
8. Other	11	4.3

a. Multiple responses allowed; N reflects responses not respondents

22. Which of the following best describes your estimate of your division/organization's financial status for the next fiscal year? *

<u>Individual Frequencies</u>									
Significant Cuts 1		Modest Cuts 2		Stable Budget 3		Modest Increases 4		Significant Increases 5	
N	%	N	%	N	%	N	%	N	%
14	5.6	52	20.6	127	50.4	45	17.9	14	5.6

* = Included in both long and short forms of the IUCRC Industry Questionnaire

FY: 2003-2004

Industry Short Results:

2003-2004

Table 1: Research Program

1. What percentage of Center research projects do you take an active interest in?*

<u>Individual Frequencies</u>										<u>Center Level</u>	
0-19%		20-39%		40-59%		60-79%		80-100%		Mean	S.D.
N	%	N	%	N	%	N	%	N	%		
44	16.6	57	21.5	79	29.8	62	23.4	23	8.7	2.93	0.73

	Mean	S.D.
3. How long, on average, do you feel that it should take for a Center research project to yield tangible results? (in Months)	16.61	4.82

4. During the past year, how satisfied were you with the following features of the Center's research program?

	<u>Individual Frequencies</u>										<u>Center Level</u>	
	Not Satisfied 1		Slightly Satisfied 2		Satisfied 3		Quite Satisfied 4		Very Satisfied 5		Mean	S.D.
	N	%	N	%	N	%	N	%	N	%		
a. Capabilities of researchers and quality of research program	0	0.0	3	2.7	14	12.4	67	59.3	29	25.7	4.12	0.53
b. Breadth of the research topics covered *	2	0.8	7	2.7	61	23.1	153	58.0	41	15.5	3.82	0.42
c. Focus of the research *	1	0.4	15	5.7	70	26.4	146	55.1	33	12.5	3.72	0.36
d. Relevance of research to my organization's needs	2	1.8	9	8.0	44	39.3	44	39.3	13	11.6	3.49	0.45

* = Included in both long and short forms of the IUCRC Industry Questionnaire

FY: 2003-2004

Table 2: Benefits

6. During the past year, approximately how many center-stimulated research projects supported by your organization (include projects contracted to outside performers)? estimate the dollar value of all center-stimulated research projects (exclude membership

	Number of		<u>Center Level</u>		Total Dollar Value	
	Mean ₁	Median	S.D.	Mean ₂	Median	S.D.
a. Number of research projects supported by your organization Total Sample: N of Members= 271 , N of Centers=34	1.46	1.17	1.55	187,271	84,500	317,012
b. Number of research projects supported by your organization Respondents reporting at least 1 project N of Members= 121 , N of Centers=33	2.33	1.75	2.22	287,846	102,500	479,091
c. Ave. cost of projects for respondents reporting at least 1 project N of Members= 113 , N of Centers=32				184,764	56,674	455,806

1. These figures were calculated by dividing the dollar amounts and the number of projects calculated in step b.
2. For this report, any answer over 5 million was judged to be a miscode and was recoded to hundred of thousands of dollars. These scores will be validated and updated in a future report.

7. During the past year, how many students trained in the Center projects were hired by your organization?*

	Mean	S.D.
	0.20	0.29

8. During the past year, to what extent has participation in the Center contributed to the technical benefits for your organization?

	<u>Individual Frequencies</u>										<u>Center Level</u>			
	No Impact		Slight Impact		Moderate Impact		High Impact		Very High Impact		Not Applicable Not Applicable N/A		Mea	S.D.
	N	%	N	%	N	%	N	%	N	%	N	%		
a. Research and Development: Enhanced via increased technical awareness, accelerated or new projects or development of intellectual property in my org.	6	5.4	21	18.8	42	37.5	34	30.4	9	8.0	0	0.0	3.09	0.50
b. Commercialization: Enhanced via improved or new products processes, services, improved sales, or new or retained jobs	40	36.0	23	20.7	33	29.7	8	7.2	2	1.8	5	4.5	2.12	0.53
c. Professional Networking: Enhanced via improved ability to recruit students, increased cooperation with other industrial members/scientists outside org.	2	1.8	16	14.3	35	31.3	34	30.4	25	22.3	0	0.0	3.41	0.46

* = Included in both long and short forms of the IUCRC Industry

FY: 2003-2004

Table 3: Center Administration and Operations

7. During the past year, how satisfied were you with the Center's administrative operations?

<u>Individual Frequencies</u>										<u>Center Level</u>	
Not Satisfied 1		Slightly Satisfied 2		Satisfied 3		Quite Satisfied 4		Very Satisfied 5		Mean	S.D.
N	%	N	%	N	%	N	%	N	%		
1	0.9	5	4.5	14	12.7	57	51.8	33	30.0	4.00	0.66

Table 4: General Evaluation

8. To what extent are you generally satisfied with the operation and activities of the center?*

<u>Individual Frequencies</u>										<u>Center Level</u>	
Not Satisfied 1		Slightly Satisfied 2		Satisfied 3		Quite Satisfied 4		Very Satisfied 5		Mean	S.D.
N	%	N	%	N	%	N	%	N	%		
1	0.4	9	3.4	60	22.7	149	56.4	45	17.0	3.86	0.49

9. Will your organization renew its membership?*

<u>Individual Frequencies</u>										<u>Center Level</u>	
Definitely Not 1		Probably Not 2		Uncertain 3		Probably Yes 4		Definitely Yes 5		Mean	S.D.
N	%	N	%	N	%	N	%	N	%		
2	0.8	9	3.4	38	14.4	139	52.9	75	28.5	4.00	0.66

Table 5: Membership Information

10. Which ONE of the following categories best describes your division's PRIMARY research

<u>Individual Frequencies</u>										
Category	N	%	Category	N	%	Category	N	%		
Food	1	0.4	Primary Metals	14	5.8	Electrical, Electronic or communication equip.	53	21.9	53	21.9
Textiles or Apparel	0	0.0	Fabricated Metals	2	0.8	Professional or Scientific Instruments	9	3.7		
Lumber, Wood, or Furniture	3	1.2	Machinery	11	4.5	Surgical or Medical Supplies	3	1.2	3	1.2
Paper	1	0.4	Motor Vehicles	8	3.3	Other Manufacturing	29	12.0		
Chemical	44	18.2	Other Transportation	4	1.7	Health Services	1	0.4		
Petroleum	2	0.8	Aircraft or Missiles	8	3.3	Mining	7	2.9		
Rubber	2	0.8	Munitions	2	0.8	Building or	5	2.1		
Stone, Clay, or Glass	9	3.7	Other Military Equipment	10	4.1	Other Non-	14	5.8		
				10	4.1					

* = Included in both long and short forms of the IUCRC Industry Questionnaire

FY: 2003-2004

Table 6: Member Descriptives

11. Years organization has been a member of the center?*

<u>Individual Frequencies</u>										<u>Center Level</u>	
0-1 Years 1		2-3 Years 2		4-5 Years 3		6-7 Years 4		8+ Years 5		Mean	S.D.
N	%	N	%	N	%	N	%	N	%		
42	16.3	76	57.0	57	22.2	29	11.3	53	20.6	2.90	1.37

12. Organization is? *

	<u>Individual Frequencies</u>	
	N	%
1. For-Profit Large (> 500 employees)	180	68.4
2. For-Profit Small (< 500 employees)	33	12.5
3. Non-Profit/Government	50	19.0

13. Which functional group pays for your organization's membership in this Center?*

	<u>Individual Frequencies</u>	
	N ^{a.}	%
1. Corporate	58	18.2
2. Research	119	37.3
3. Development	43	13.5
4. Engineering	42	13.2
5. Product Development	25	7.8
6. Manufacturing	13	4.1
7. Marketing/Sales	4	3.8
8. Other	19	6.0

a. Multiple responses allowed; N reflects responses not respondents

14. Which of the following best describes your estimate of your division/organization's financial status for the next fiscal year? *

<u>Individual Frequencies</u>									
Significant Cuts 1		Modest Cuts 2		Stable Budget 3		Modest Increases 4		Significant Increases 5	
N	%	N	%	N	%	N	%	N	%
14	5.6	52	20.6	127	50.4	45	17.9	14	5.6

* = Included in both long and short forms of the IUCRC Industry Questionnaire

FY: 2003-2004