

**3.7.5 APPENDIX: SAMPLE PROCESS/OUTCOME
ASSESSMENT REPORT**

PROCESS OUTCOME ASSESSMENT REPORT

UNIVERSITY

CENTER FOR RESEARCH

**Dr. Evaluator
Department of Research**

Submitted April 9, 1997

CONTENTS

Part I. Process/Outcome Survey	13
Research Program	13
Benefits	14
Administrative Operations	15
General Evaluation and Renewal Intent	15
Appendix A: Open-Ended Comments	16

Part I. PROCESS OUTCOME QUESTIONNAIRE

The attached report provides a brief summary of the feedback provided by industrial respondents to the IUCRC Process/Outcome (P/O) Questionnaire. The P/O questionnaire was administered immediately after the fall 1996 IAB meeting and referenced the previous twelve months. Questionnaires were completed by six of seven members. Means for this year's survey are compared to means obtained from last year's survey and from national norms (based on responses obtained from over 35 IUCRCs and over 300 respondents). Verbatim transcripts of answers to open-ended questions are also provided in the tables, which accompany the report. Since the number of CMR members is quite small and some members are quite new, caution should be used in interpreting these findings.

Most of the time period covered in this report can be characterized as one of general stability and growth: the center had grown to seven members (two added during the current fiscal year), only one member had left the center for over a year, and procedures and practices for managing a multi-site center were beginning to become routinized. However, data collection took place shortly after the center selected and made the transition to its new director and began to assess the merits of incorporating the experimental (ES) group into its research program. Nonetheless, on balance, industry feedback appears to indicate the center is perceived as a high quality, responsive and well-run organization.

Research Program

Level of Interest

Members were asked to indicate what percentage of the center's research program they "take an active interest in" and which two projects had the greatest relevance to their organization/division (See Table 1). There was quite a range of responses to the former question. Most members reported they took an active interest in at least half (40-59%), and for some, most of the center's currently funded projects. However, one member reported they took an active interest in only "0-19%" of all projects. (This distribution is essentially the same as ratings obtained last year and similar to national norms). Members indicate that research projects should yield "tangible results" in about 13 months; this is substantially shorter than national norms (18 months).

Nominations of projects (two per respondent) with the "greatest relevance to your organization" demonstrate a healthy level of diversity (See Table 1, Projects). Work performed by eight different projects across four different thrust areas (no work is being done in image analysis) was mentioned by at least one respondent. Obviously, interest in projects not mentioned by at least one member may be marginal.

TABLE 1: INTEREST IN RESEARCH

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

<u>FREQUENCIES</u>					<u>MEAN</u>	<u>MEAN</u>	<u>MEAN</u>
0-19% (1)	20-39% (2)	40-59% (3)	60-79% (4)	80-100% (5)	(Current Year)	(Previous Year)	(National)
1	1	3	0	1	2.8	2.9	2.9

PROJECTS -- GREATEST RELEVANCE

2) *Among current and recent Center projects, which two have had the greatest relevance for your organization/division? by project name or investigator)*

- “Project Name” - “Faculty Name” (3x)
- Security
- Software Reliability Modeling
- Fault Infection Methodologies
- “Faculty Name” (2x)
- “Faculty’s Name” Measurement
- “Faculty Name”
- ATM Network Design for LPI (“Faculty Name”) (2x)

Satisfaction with the Research Program

Members rated their satisfaction with different aspects of the center's research program on a five-point scale (1= not satisfied, 2=slightly satisfied, 3=somewhat satisfied, 4=quite satisfied, 5=very satisfied) (See Table 2). As Fig. 1 demonstrates, CMR is at or above national IUCRC norms on most of these ratings including: "capabilities of the faculty and students" (Mean=4.5), "technical quality of the research program" (Mean = 4.2), "relevance to short-term needs" (Mean = 3.4) and "relevance to long-term needs (Mean = 3.6). Satisfaction with the "innovative quality of the research" (Mean=4.2) is well above national norms. Satisfaction ratings fall slightly below national norms for "breadth of the research program" (Mean = 3.7, down from previous year), "focus of the research" (Mean = 3.5; up slightly from previous year).

Members provided feedback on how to improve the research program (See Appendix A1, "Comments Research"). Perhaps the most salient comments recommended that the center "continue interaction with industry", develop a “long range strategic plan” which included better definition of research thrusts, particularly in “system engineering”. Comments also included: more attention to “short term research needs”, research is more beneficial in the “long term”, and “broaden membership base”.

Benefits

Technical Benefits

Members were also asked to rate the impact participation in CMR had on various research and development and commercialization benefits (1 = no impact, 2 = slight impact, 3 = moderate impact, 4 = high impact, 5 = very high impact) (See Fig. 2). In interpreting these results it's important to realize that the membership of one center may want one thing (e.g., new research ideas or good student) while the membership of another something different (e.g., an impact on their bottom line). Thus, centers need not excel on every benefit but must deliver something their members consider valuable. (Since roughly half of CMR's IAB have been members of the center for only 2-3 years, these ratings should be interpreted with caution).

As Fig. 2 reveals, CMR approaches or exceed national norms for most R&D benefits including: "increased technical awareness" (Mean = 3.2), "accelerated or improved existing research" (Mean = 2.7) and “stimulated new research projects” (Mean = 2.7), "contributed to the development of intellectual property in my firm". These ratings represent noticeable gains

compared to last year's ratings; the reported impact on "intellectual property" is substantially above national norms. Further, members reported that center research has resulted in seven new projects supported by their organization (n=4) (average total dollar estimates for projects was \$84.8K). On the other hand, CMR is comparable or is somewhat below national norms on most commercialization benefits. Its biggest impact appears to be on "improvements to existing products, processes and services (Mean = 2.5).

Open-ended comments (See Appendix A2) about how the center had benefited members indicated the following: outstanding technical papers, helpful consulting on reliability theory in the "area of risk analysis". One respondent indicated it was too early to see benefits.

When asked how the center could improve their technical benefits, one member reiterated the need to increase the membership base and another requested more faculty in radio communication.

Other Benefits

Members were also asked to rate the center's impact on a number of non-technical benefits. As Fig. 3 reveals, CMR exceeds national norms for most non-technical benefits, including: "enhanced ability to recruit talented students" (Mean = 2.4), "improved cooperation with scientists and technical resources outside their organization" (Mean = 3.3). Supporting the former rating, the members reported hiring a total of five students during the previous year or almost one new student per firm. CMR is slightly below national norms on "improved cooperation with other center members".

Administrative Operations

Members were also asked to rate how satisfied (1= not satisfied, 2=slightly satisfied, 3=somewhat satisfied, 4=quite satisfied, 5=very satisfied) they were with different features of the Center's administration. As Fig. 4 reveals, CMR approaches or exceed national norms on most administrative dimensions, including: "communication -- staff" (Mean = 4.5); "proposals (quality and timeliness)" (Mean = 4.5), "project selection process" (Mean = 3.7), "technology transfer activities" (Mean = 3.2). CMR approaches national norms but is lower than last year on several items: "management of ongoing research projects" (Mean = 4.0); "planning and development of research program" (Mean = 3.7). CMR is noticeably below national norms and lower than last year on two items: "management of intellectual property" (Mean = 3.3), and "center fund-raising" (Mean = 2.7).

Board members provided a number of suggestions/comments for improving fund-raising, management of intellectual property issues and the planning and development of the research program. (See Appendix A3, "Comments"). With respect to fundraising, two members indicated this should be a priority area and offered assistance as well as a suggestion of a company ("Company name"). With respect to management of intellectual property, a comment included: the delay of progress due to attorneys. With respect to the planning and development of the research program, a comment indicated some frustration that it was not clear which projects had been selected for funding last year. One respondent indicated that CMR was "run very professionally".

General Evaluation and Renewal Intent

Overall, members appear to be very satisfied with the operation and activities of the center. Satisfaction ratings surpass national norms (See Table 2). Further, five respondents

indicated they would probably or definitely renew their memberships (See Table 2; Fig 5). One member labeled their organizations renewal "probably not", indicating that lack of funding was the main cause for non-renewal.

TABLE 2: GENERAL EVALUATION

	FREQUENCIES					MEAN	MEAN	MEAN
	Not Satisfied 1	Slightly Satisfied 2	Somewhat Satisfied 3	Quite Satisfied 4	Very Satisfied 5	(Current)	(Previous)	(National)
14) To what extent are you generally satisfied with the operation and activities of the Center?	0	0	1	4	1	4.0	4.0	3.8
	Definitely Not 1	Probably Not 2	Uncertain 3	Probably Yes 4	Definitely Yes 5			
15) Will your organization renew its membership?	0	1	0	2	3	4.2	4.0	4.0

**APPENDIX A
OPEN-ENDED COMMENTS**

A.1.COMMENTS: RESEARCH

5) How can the Center improve its research program? Comments on items a-g rated "1" or "2" are particularly valuable.

- Greater attention to short term research needs
- I do not believe that the center needs to improve on “short terms needs”. I see much of the research being beneficial in the “long term”. I will find out in the next few years how beneficial the research is in the long term. In general continue the increased interaction between faculty and faculty with IAB members.
- Broaden membership base
- Interaction with industry is on the right track
-
- I would like to see a long-range strategic plan. I believe serious consideration should be given to better definition of the thrusts. I would like to see a thrust in system engineering, with particular emphasis on engineering the human functionality into the system. “Proejct Name” (actually several projects- “Faculty name”)

A2 COMMENTS -- TECHNICAL BENEFITS

8) If your organization has benefited technically from its participation in the Center, please describe how (e.g. brief description of research advance or product/process improved, etc.).

- Outstanding technical papers
- We were able to consult with Dr. Faculty and Dr. Faculty on reliability theory and the SHARPE tool. We are using reliability theory in the area of Risk Analysis. This consulting helped us to apply the state of the art to our application.
- I suspect the next 12 months will result in such a technical benefit. "Industry name" is a relatively new member.

9) How can the Center improve your technical benefits?

- Broaden membership base!
- Hire more faculty in radio communication!!

A3: COMMENTS -- ADMINISTRATIVE OPERATIONS

13) How can your Center improve its administrative operations? Comments on items a-h rated "1" or "2" are particularly valuable.

- CMR is run very professionally

Fund raising

- We need to recruit more members! I believe Dr. Faculty intends to take this on, I am prepared to assist.

Planing and Development of Research Program

- No feed back after the spring meeting as to what was funded and not funded

Management of Intellectual Property Issues

- Still having major problems with MU attorneys in working with us -very slow!

A 4 COMMENTS -- GENERAL EVALUATION --

16) What can the Center do to make your renewal more likely? Please describe. (Attach extra sheet if necessary)

- The lack of funding has been the primary reason for non-renewal of membership

17) What Center activities do you like? What Center activities should be continued or maintained?

- I want to hire summer interns; citizenship is a problem, but can be worked
 - The WEB access is great!
-