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**Addressing Issues in Evaluating Large
Research Initiatives and Centers: Example of
the C-MORE Evaluation**

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Overview

- I. ISSUES IN EVALUATING LARGE RESEARCH INITIATIVES AND CENTERS**
- II. CURRENT EVALUATION OF C-MORE**
- III. EXAMPLES OF EVALUATION OF COMPLEX PROGRAMS**
- IV. APPLICATION TO CURRENT EVALUATION EFFORTS**

Issues in Evaluating Large Research Initiatives and Centers

Background of Large Research Initiatives and Centers

- **Shift in science from individual to collaboration and interdisciplinary teams**
- **“Value-added” benefits of large-scale, team-based, and multidisciplinary research**
- **Research Center is a funding mechanism for much of today’s advanced research**

Characteristics of Research Centers

Organization	Participants	Research	Goals
<ul style="list-style-type: none"> • Large • Often University-based 	<ul style="list-style-type: none"> • Multiple sites • Multiple participants • Multiple stakeholders • Multiple funding sources • Multiple target audience groups 	<ul style="list-style-type: none"> • Not amenable to individual researchers • Collaborative • Multi-disciplinary • Address cutting-edge problems and research 	<ul style="list-style-type: none"> • Academic competitiveness • Improved education • Promotes interaction and knowledge transfer with industry

Evaluation of Large Research Initiatives and Centers

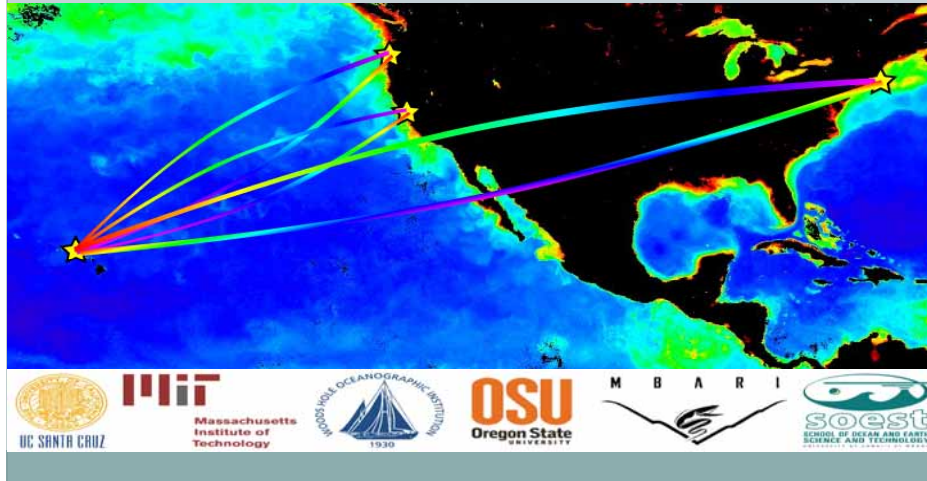
- **Need for Evaluation**
 - Federal and industry funders: accountability and justification for funding
 - Center participants: research emphasis, achieving center outcomes, and meeting goals
 - University administrators: center activities and recommendations
- **Challenges in Evaluation**
 - Unique characteristics complicates evaluation
 - Lack of development or standard evaluation approaches

Unique questions for evaluators

- **Is the center as a whole greater than the sum of its parts?**
 - “How is the Center as a whole operating and performing?”
 - “Is the Research Center operating efficiently?”
- **What is the “value-added” benefit of the center?**
 - “Is the Research Center the most appropriate funding mechanism and structure for the research activities?”
- **Address multiple participants and impacts**
 - “Is the Research Center making an impact on the economy, society, university, and the sciences?”
 - “Do the goals and vision of the Research Center relate to the needs and priorities of the community and greater society?”

Current Evaluation of C-MORE

C-MORE Overview



C-MORE Goals and Activities

Focus	Goals	Objectives	Metrics	Evaluated?
Research	3	9	17	0
Education	3	5	14	6
Diversity	2	4	15	1
Knowledge Transfer	1	3	12	0

Current C-MORE Evaluation

<i>Evaluation Strategies Aimed at Specific Target Groups (2009 – 2010)</i>							
Goal	Activity/Strategy	Public	Teach-ers	K-12	Under-grads	Grad-uate	Post-Docs
Education Goal 1. Increase scientific literacy	C-MORE website analysis	X	X	X	X	X	X
	Science Kits		X				
	Ocean FEST			X			
Education Goal 2. Provide state-of-the-art training	Communication and collaboration activities					X	X
	Meeting and Center involvement					X	X
Education Goal 3. Increase in NHPI and other under-represented minority students	Ethnic composition of students in C-MORE and related ocean and earth science disciplines				X	X	X
	Scholars Program				X		

Examples of Evaluation of Complex Programs

Trochim, Marcus, Masse, Moser, & Weld, (2008) National Cancer Institute Evaluation of Large Initiatives (ELI)



- **Evaluation of Large Initiatives (ELI) Project**
- **Project exploring how to improve capacity and quality of evaluations of large scientific research initiatives**
- **Transdisciplinary Tobacco Use Research Center (TTURC) as an example**

Trochim, Marcus, Masse, Moser, & Weld, (2008) National Cancer Institute Evaluation of Large Initiatives (ELI)



- **Comprehensive Conceptual Model**
- **Participatory and Collaborative Evaluation**
- **Mixed Methods**
- **Existing Reporting Systems**
- **Adapt Evaluation to Developmental Stage of Initiative**
- **Develop Standardized Cross-Initiative Evaluation Systems**
- **Peer Review**
- **Address Issues of Causation and Control**
- **Improve Funding and Organizational Capacity for Evaluation**
- **Address Management Issues**

Systems Approaches to Evaluation

- **Systems approaches** may be a useful tool in the evaluation of large research centers given their organizational complexity.
- **At its core, system approaches asks questions about:**
 - Inter-relationships
 - Perspectives
 - Boundaries

Have Others Really Addressed These Issues?

- **There seems to be little effort among center supporters, funding agencies, and those in the evaluation field to determine what value-added research centers offer.**
- **Still a lack of resources and examples for evaluators to draw from.**

Application to Current Evaluation Efforts

Utilize Available Data Sources

- Utilize a Researcher Form to collect data from various C-MORE personnel across sites:
- Utilize Progress Report Summaries for content analysis and descriptives:
- Utilize CV's for bibliometrics analysis and measure research impact:
- Utilize the Financial Report for financial analysis of center efficiency of organization:

Apply Systems Thinking Approaches

- Establish the nature of the inter-relationships within the C-MORE organization.
- Evaluate C-MORE from different participant and stakeholder perspectives.
- Evaluate C-MORE programs and activities outcomes based on center values and priorities.

What Are the Take Home Lessons for Evaluators?

- Develop evaluation toolkit to apply appropriate models, methods, and techniques to large research initiatives and centers.
- Build capacity for and utilize available data sources.
- Evaluate the center's performance as a whole.
- Ask what "value-added" the center provides, including impacts in community and society

**Thank You for Your Time and
Attention**



ANY QUESTIONS?