THE MIND-BODY INTERACTIONS AND HEALTH PROGRAM EVALUATION:

ADAPTING THE RESEARCH PAYBACK FRAMEWORK IN AN NIH CONTEXT

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NIH EVALUATION SPECIAL INTEREST GROUP
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THE MADRILLON GROUP INC.

- **Woman-owned small business located in the metropolitan Washington DC area**
- **Specializing in a full range of program evaluation services**
- **Focusing on health, biomedical and social science research programs at NIH**
- **Senior members each have more than 30 years of research and evaluation experience in federal, academic, and private sector settings**

OVERVIEW OF PRESENTATION

- Overview of the Payback Framework
- The *Mind-Body Interactions and Health* Program
- Design and Methods of the MBIH Evaluation
- Findings from the Evaluation
- Lessons Learned from Applying the Payback Framework

THE RESEARCH PAYBACK FRAMEWORK

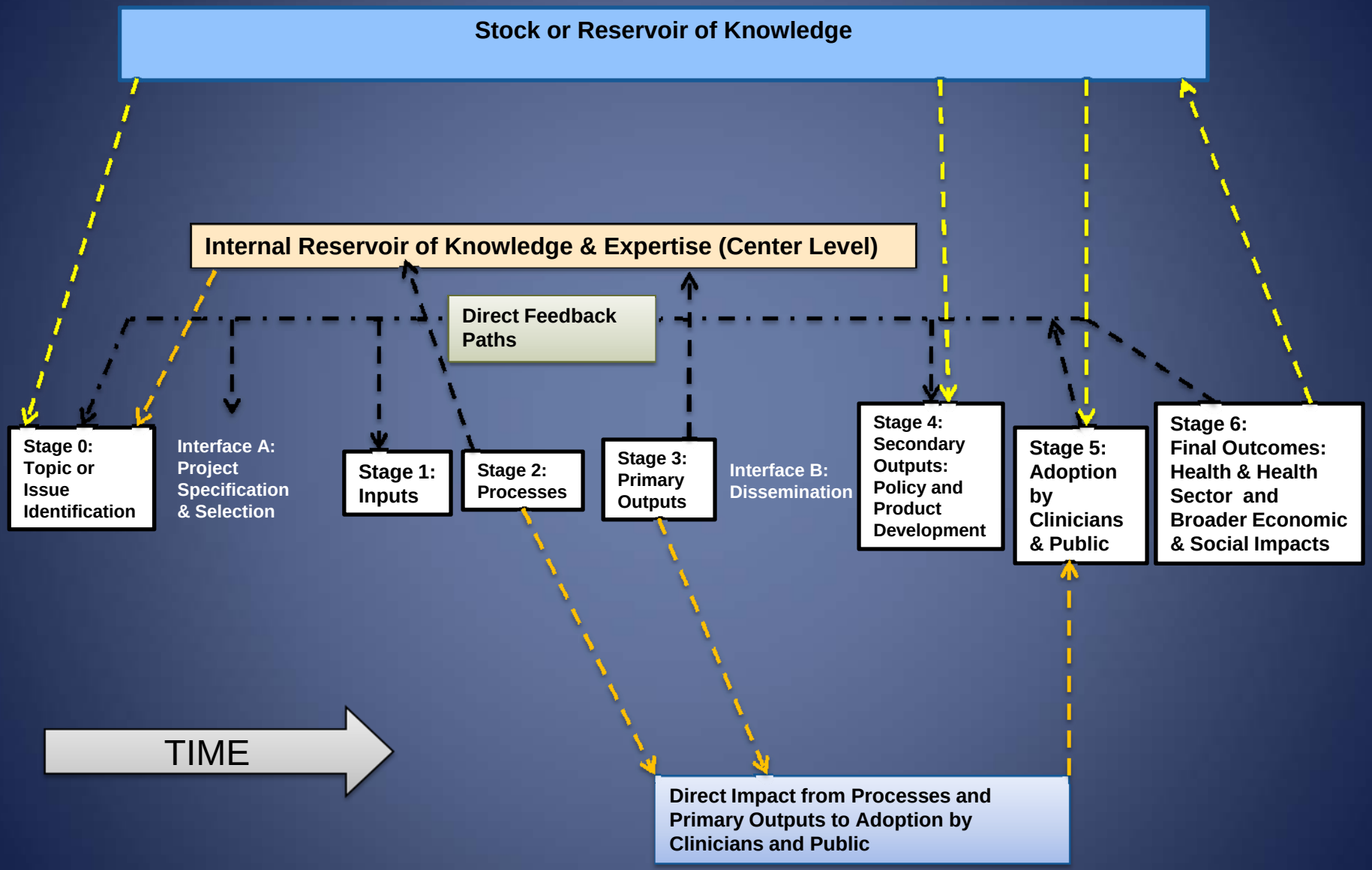
- Developed in mid-1990s by Martin Buxton, Stephen Hanney, and Health Economics Research Group (HERG) at Brunel University, London

- Two components:
  - Multidimensional categorization of research benefits
  - Input-process-output-outcome model of the research process

TYPES OF RESEARCH BENEFITS

BENEFIT CATEGORY	EXAMPLES OF INDICATORS
Knowledge Productivity (Primary Outputs)	Publications Oral Presentations
Research Targeting and Capacity Development (Secondary Outputs)	New Grants Career Development New research tools, methods, models, and infrastructure
Informing Policy and Product Development	Uptake of research findings in policy formulation New products
Health and Health Sector	Improvement in patients' outcomes, quality of life Changes in healthcare delivery
Broader Economic and Social Impacts	Benefits to society—decreased costs of care, reduced disability days

PAYBACK FRAMEWORK RESEARCH LOGIC MODEL



PAYBACK FRAMEWORK METHODOLOGY

- Multiple case studies of projects/research centers
- Selection of case study sample (purposive)
- Compilation of case studies
- Cross-case analysis (development of a case study scoring process)
- Comparison of results with earlier Payback evaluations

MIND-BODY INTERACTIONS AND HEALTH PROGRAM

Rationale:

- Cognitions, emotions and stress can affect physical & mental health
- Some mind-body interventions can improve health
- Mechanisms of these effects not understood

MBIH Program:

- Established by Congress in 1999
- Ten-year, trans-NIH program directed by OBSSR
- 12 partnering NIH Institutes and Centers
- $259 million dollars
- 15 MBIH research centers
- 44 investigator-initiated grants

NIH INSTITUTES AND CENTERS PARTICIPATING IN THE *MIND-BODY INTERACTIONS AND HEALTH* PROGRAM, 2000-2009

NIH IC	ADMIN OF CENTERS	FUNDED RO1S	FUNDED CENTER SPIN-OFF GRANTS
NCCAM	Y	Y	Y
NCI		Y	Y
NCMHD			Y
NCRR		Y	Y
NHLBI	Y	Y	Y
NIAAA			Y
NIA	Y	Y	Y
NIAMS			Y
NICHD	Y	Y	Y

NIH IC	ADMIN OF CENTERS	FUNDED RO1S	FUNDED CENTER SPIN-OFF GRANTS
NIDA			Y
NIDCR	Y		Y
NIDDK	Y	Y	Y
NIEHS		Y	Y
NIGMS			Y
NIMH	Y	Y	Y
NINDS	Y	Y	Y
NINR			Y
OBSSR		Y	Y
FOGARTY			Y

MBIH PROGRAM EVALUATION ADVISORY COMMITTEE

- **Margaret Ames, Ph.D.,** *Acting Director, Office of Science Planning and Assessment, Office of the Director, National Cancer Institute*

- **Paige McDonald, Ph.D.,** *Branch Chief & Program Director, Basic and Biobehavioral Research Branch, Division of Cancer Control and Population Sciences, National Cancer Institute*

- **Catherine Stoney, Ph.D.,** *Program Director, Clinical Applications and Prevention Branch, Division of Cardiovascular Sciences, National Heart, Lung, and Blood Institute*

MBIH PROGRAM EVALUATION DESIGN & METHODS

- **Cross-sectional mixed-methods design**
- **Focus on overall achievements**:
  - Program as a whole
  - MBIH research centers
  - MBIH investigator-initiated research projects
- **Funded through the NIH Evaluation Set-Aside Program**

MBIH PROGRAM EVALUATION DATA SOURCES

- Program documents (grant applications, Summary Statements, Annual Progress Reports);
- NIH databases (e-SPA and IMPAC-II QVR);
- Semi-structured interviews customized for specific interviewee groups (<9 per group);
- Bibliometric analyses
- Data Table spreadsheet (Centers only)

MIND-BODY INTERACTIONS AND HEALTH PROGRAM FUNDING CHRONOLOGY FOR RESEARCH CENTERS

FISCAL YEAR	FUNDING MECHANISM & NUMBER	COMMENTS
FY 2000	5 P50 Comprehensive Research Centers	
FY 2004	7 R24 Research Infrastructure Centers	2 of the P50s in this group
FY 2004	6 R21 Exploratory & Developmental Grants	
FY 2007	3 R24 Research Infrastructure Centers	3 of the R21s in this group

MBIH RESEARCH CENTER INTERNAL STUDIES

PILOT STUDIES

- 209 pilot studies (14/15 centers)
- Smaller studies led by post-doctoral fellows or junior faculty
- 1-2 years duration
- Predominantly clinical research (79 percent) versus basic research (11 percent) or both (10 percent)

SUB-PROJECTS

- 78 sub-projects (11/15 centers)
- Larger in scope and scale (similar to R01) led by established investigators
- 3-4 years in duration
- Clinical research predominant (48 percent), but more basic science (32 percent) and both (20 percent)

RESEARCH BENEFIT CATEGORY 1:

KNOWLEDGE PRODUCTIVITY

- Publications and presentations identified and counted if they occurred between January 1, 2000 and December 31, 2009

- Centers produced a total of 429 publications
  - 336 were research publications
  - 93 were non-research publications (90 reviews)

- Centers produced a total of 171 oral presentations

- Pilot studies significantly more likely to generate oral presentations, while sub-projects significantly more likely to generate publications

RESEARCH BENEFITS CATEGORY #2:

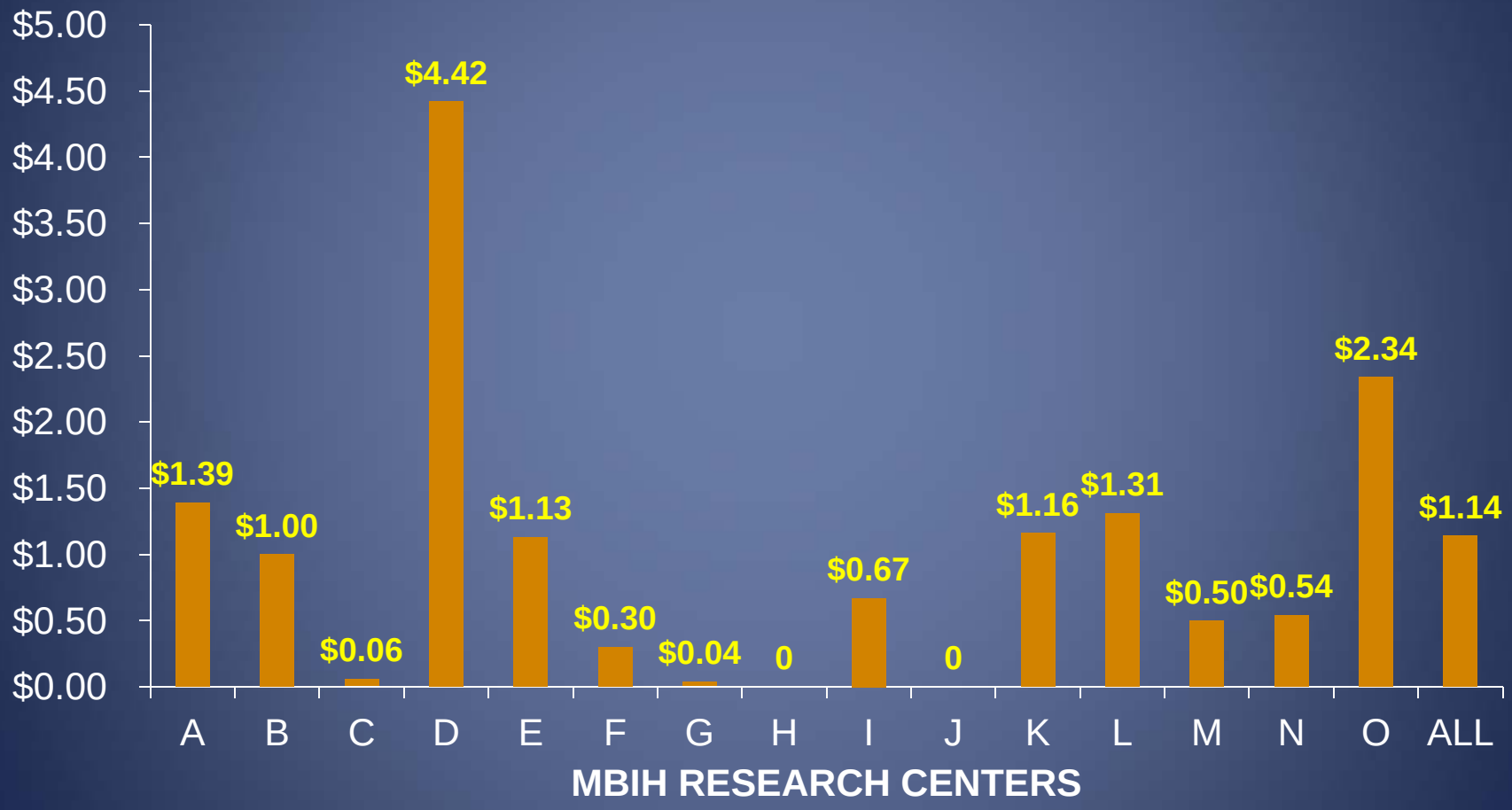
CAPACITY DEVELOPMENT AND RESEARCH TARGETING

CAPACITY DEVELOPMENT

- **Research Career Development**
  - More than half of centers successfully trained doctoral and post-doctoral researchers
  - 60 percent recruited new faculty in Mind-Body research

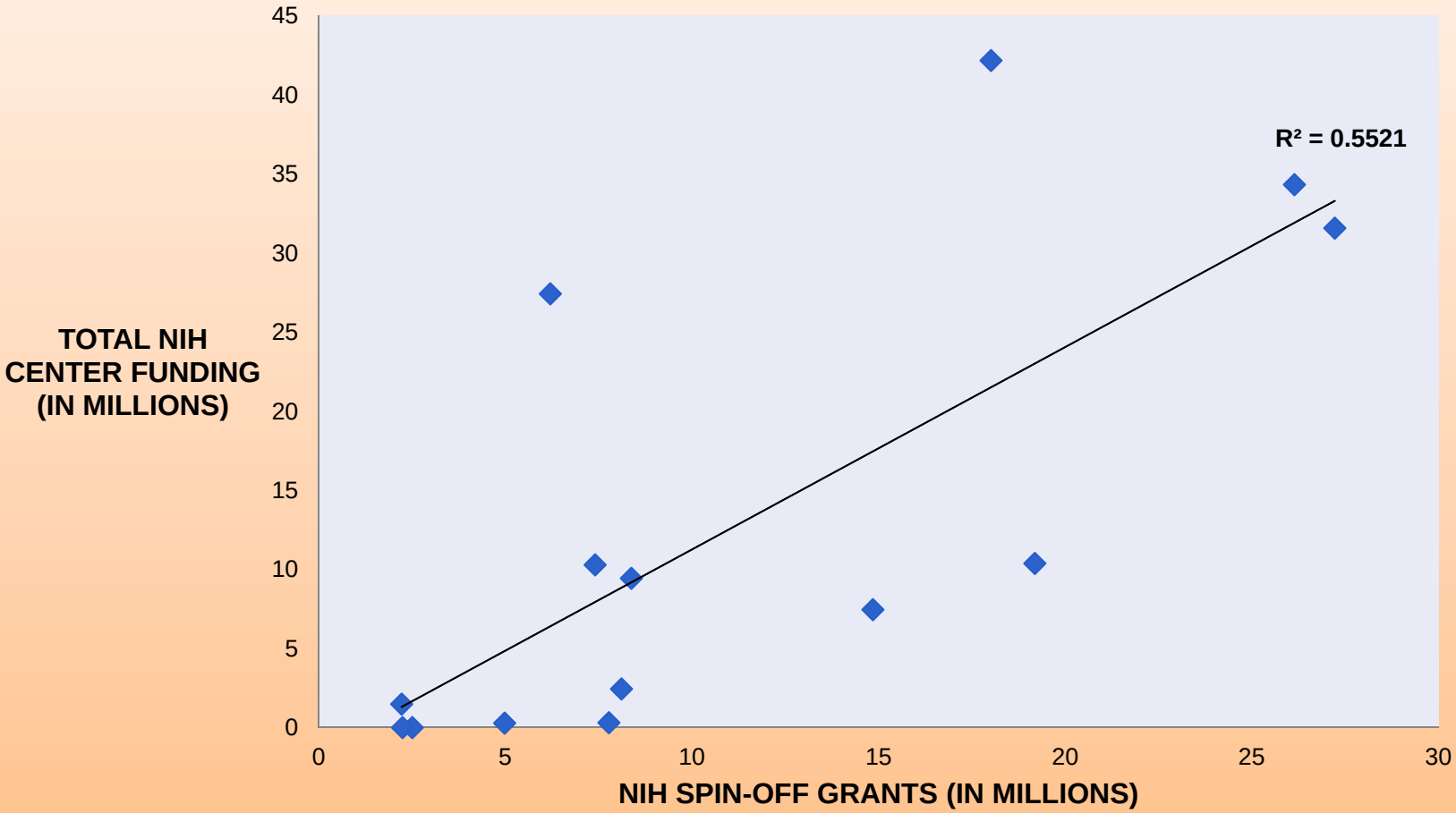
- **Infrastructure Development**
  - 73 percent created new research tools, scales, methods, or measures
  - 67 percent created new research infrastructure

RESEARCH TARGETING:
NEW NIH RESEARCH DOLLARS PER DOLLAR OF NIH RESEARCH CENTER FUNDING



SCATTER PLOT:

NIH CENTER FUNDING AND SPIN-OFF GRANT FUNDING



RESEARCH BENEFITS--OUTCOMES

PROGRAM OUTCOMES	INDICATORS
INFORMING POLICY & NEW PRODUCT DEVELOPMENT	• Research influenced policy development or formulation •Research influenced clinical guidelines •Research influenced medical education or training
EFFECTS ON HEALTH AND HEALTH CARE	•Findings adopted by clinicians •Changes in healthcare delivery •Improvements in health outcomes and quality of life
BROADER ECONOMIC AND SOCIAL IMPACTS	•Demonstrated benefit (CBA, CUA) OR •Plausible indication that an effect is likely to occur

DATA SOURCES FOR PROGRAM OUTCOMES

- **Annual Progress Reports**
- **Bibliometrics**
- **Self-reports of evidence of an outcome from PIs**

STRENGTHENING INVESTIGATOR SELF-REPORTS: DEVELOPING EVIDENCE OF AN EFFECT

DISSEMINATION:

WHAT WAS DISSEMINATED?

TO WHAT AUDIENCE?

UPTAKE:

HOW WAS THE INFORMATION USED?

ACTION:

WHAT WAS THE RESULT?

RESEARCH BENEFIT CATEGORY #3: INFORMING POLICY AND NEW PRODUCT DEVELOPMENT

- 60 percent of centers reported that one or more of their projects influenced policy development or formulation

- 40 percent of centers reported that their research findings influenced clinical guidelines

- 87 percent of centers reported that their research influenced medical or healthcare professional education or continuing education

RESEARCH BENEFIT CATEGORY #4:

HEALTH OUTCOMES, QUALITY OF LIFE AND HEALTH CARE

- 60 percent of centers reported that findings were adopted by clinical practitioners in their clinical practices

- 60 percent of centers reported that their research led to changes in the health care delivery system

- 40 percent of centers reported that findings or interventions led to improvements in health outcomes and/or quality of life

RESEARCH BENEFIT CATEGORY #5:

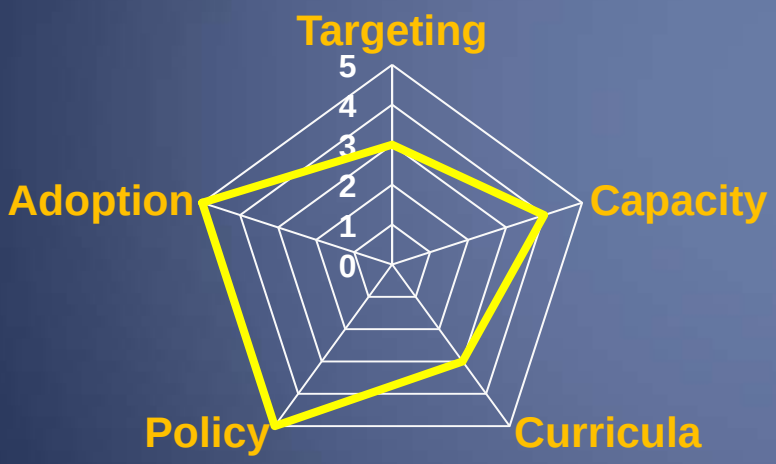
BROADER ECONOMIC AND SOCIAL IMPACTS

- **Difficult to identify concrete evidence that MBIH research had produced societal impacts**

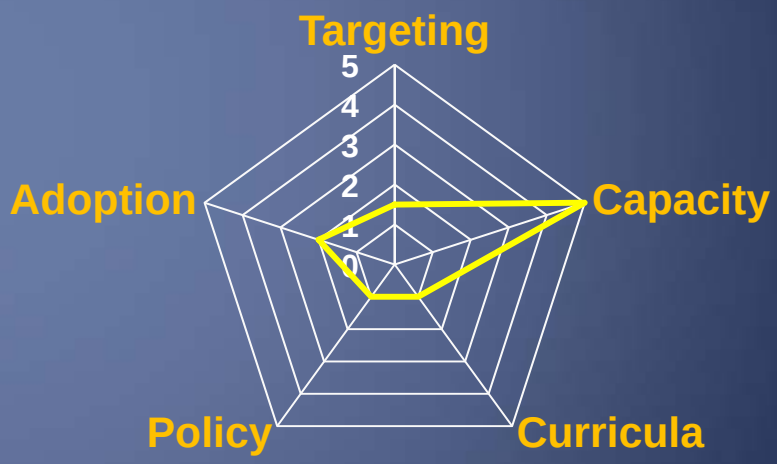
- **27 percent of center PIs believed that their research would produce broader economic or social benefits for society**

COMPARISON OF TWO MBIH CENTERS USING RADAR GRAPHS

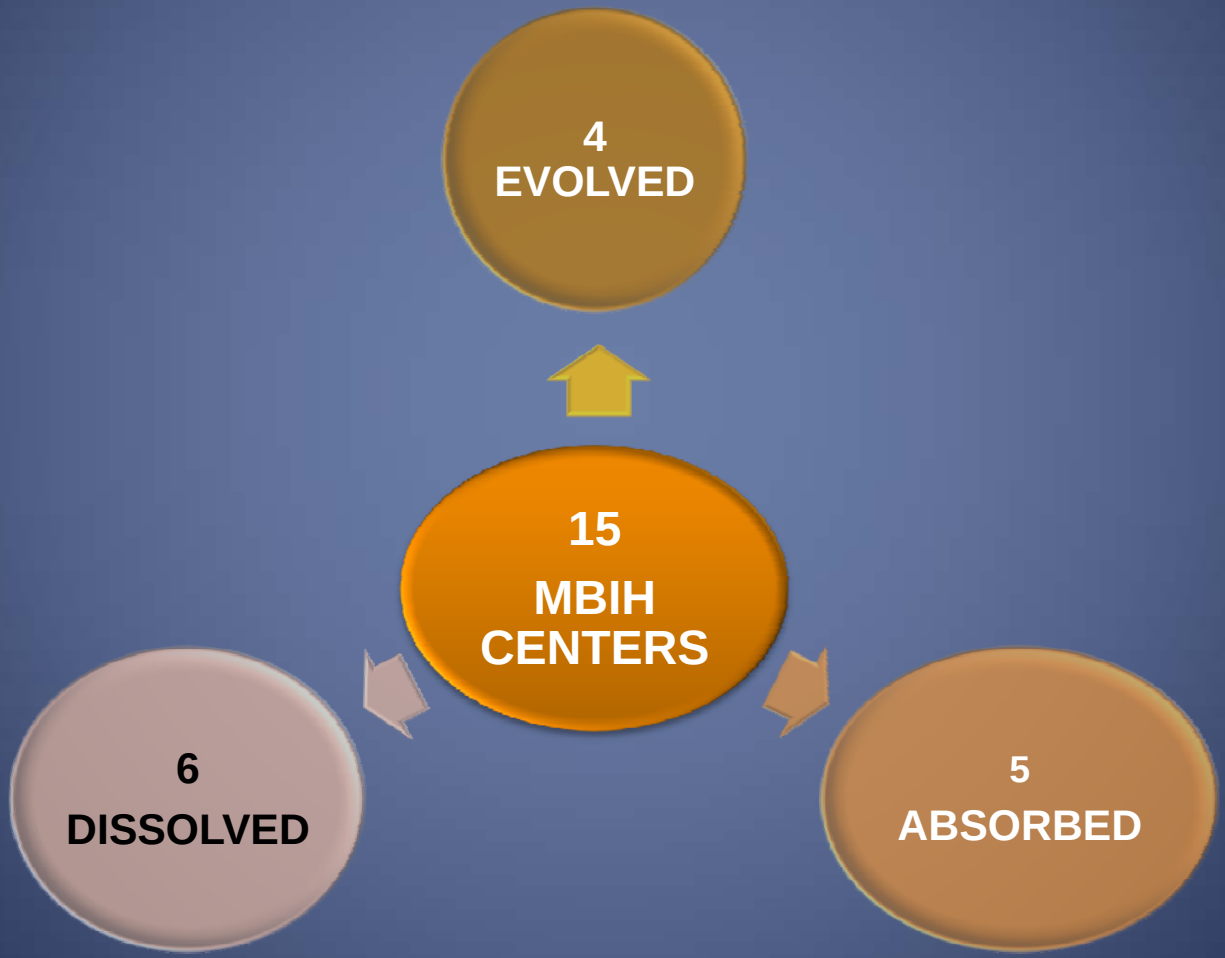
MBIH Research Center D



MBIH Research Center H



RESEARCH CENTER SUSTAINABILITY



LESSONS LEARNED FOR FUTURE APPLICATIONS OF THE PAYBACK FRAMEWORK

- **The Payback Framework is well-suited to evaluations of NIH biomedical research programs**
- **MBIH research centers had important impacts in all five benefit categories**
- **As more Payback Framework evaluations are completed, it may become possible to establish benchmarks**

FUTURE DIRECTIONS FOR THE PAYBACK FRAMEWORK WITH NIH PROGRAMS

- **Unpacking research program structure:**
  - **Research teams—research centers—research networks**
- **An additional outcome—Sustainability, and how and why some centers succeed and others do not**
- **Examining relative efficiency of research centers using *Data Envelopment Analysis***