Defining Success for the National Institute of Allergy and Infectious Diseases’ Regional Centers of Excellence in Biodefense and Emerging Infectious Diseases Research program: A Co-Authored Evaluation Framework and Plan

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Project goals

• Develop an evaluation plan
• Engage stakeholders at multiple levels
• Provide several opportunities for stakeholders to participate
• Co-developed, highly relevant and meaningful framework to base evaluation
  – Regional Centers of Excellence
  – National Institute of Allergy and Infectious Diseases
  – Other experts
Concept mapping

- Seeks the variability in stakeholder knowledge and opinion
- Presents a process to manage the variability
- Develops results that synthesize a group’s ideas
- Connects qualitative and quantitative approached in a mixed-methods application
“In order to foster excellence in advancing the biodefense and infectious disease research enterprise, the RCE program and its Centers should...”
Key Informants and Knowledge Leaders

**Brainstorming**
- 279 Invited
- 117 Contributed

**Sorting**
- 33 Invited
- 24 Completed

**Rating**
- 279 Invited
- 74 Completed
"In order to foster excellence in advancing the biodefense and infectious disease research enterprise, the RCE program and its Centers should..." 

- add chemistry resources to support screening activities and, ultimately, small molecule optimization programs.
- address the fact that the academic reward structure is largely incompatible with product development.
- allow studies on emerging diseases outside of the United States.
- avoid duplication of functions that are provided by other government programs or the private sector.
- be able to provide financial support to foreign institutes for resources and/or services linked to domestic projects.
- be centrally coordinated and monitored by a Management and Oversight Committee.
Organizing Knowledge and Opinion

94 statements were sorted into groups

Each statement was rated twice (Importance & Expected Progress)

- Decide how to manage knowledge better:
  - Work quickly and effectively under pressure

- Organize the work so it is not specific:
  - Manage resources effectively

- Manage resources effectively

Rating Sheet

1. Manage resources effectively
2. Work quickly and effectively under pressure
3. Decide how to manage knowledge better
4. Organize the work so it is not specific

94 statements were sorted into groups.
How Did We Build These Results?

• The Raw Materials
  - Statements
  - Sort Input from each participant
  - Rate Input from each participant

• The Tools
  - Aggregation of Sort Data
  - Similarity Matrix
  - Multidimensional Scaling
  - Cluster Analysis
This initial map shows all the elements in relation to one another.
Each point represents one of the brainstormed ideas.

“...In order to foster excellence in advancing the biodefense and infectious disease research enterprise, the RCE program and its Centers should...”
Conceptually similar ideas are in close proximity.

value and reward original ideas and innovative technologies (4)
demonstrate its flexibility in addressing emerging infectious disease research needs. (19)
have the capacity to rapidly move into areas of growing importance. (56)
Conceptually **different ideas are further apart**

define who the stakeholders are once product development moves into the pipeline (72)

value and reward original ideas and innovative technologies (4)

create training that is relevant to and integrated with the goals of the strategic plans. (21)

“In order to foster excellence in advancing the biodefense and infectious disease research enterprise, the RCE program and its Centers should...”
The detailed ideas are organized into groups so that many concepts can be considered in a shared structure.
The Emerging Structure

...contains all the details and provides a conceptual framework.
Of those who responded......

Organizational Affiliation:

- 66% identified with an RCE
- 20% identified with NIAID
- 11% identified as “other”

Role:

- 31% identified as a Research or Core PI
- 28% said they were not in an RCE
- 13% identified as an RCE staffer
- 5% identified as an RCE PI
- 18% identified as a career development awardee or a developmental project awardee
Importance Rating

**Importance**

Please rate each statement below on how important you think it is to the continued, long term success of the RCE Program and its Centers.

1 = relatively unimportant
2 = somewhat important
3 = important
4 = very important
5 = extremely important
Values of All Participants

17

Higher Importance

4.33

Innovation and Flexibility

Cluster Legend

Layer  Value
1  3.41 to 3.59
2  3.59 to 3.78
3  3.78 to 3.96
4  3.96 to 4.14
5  4.14 to 4.33

Lower Importance

3.41

Integration and Synergy
Funds Management
Capacity and Infrastructure
Research Mission
Collaboration and Communication
Management
Emergency Response
Training and Recruitment
Translational Activities
Expected Progress Rating

Expected Progress 2003-Present

Please rate each statement below on how much progress you would expect the RCE program and its Centers to make on it from 2003 to the present.

1 = no progress  
2 = relatively little progress  
3 = some progress  
4 = a lot of progress  
5 = completed
Values of All Participants

Higher Expected Progress

3.55
- Innovation and Flexibility
- Integration and Synergy
- Management
- Collaboration and Communication
- Capacity and Infrastructure
- Research Mission
- Training and Recruitment
- Translational Activities

Expected Progress
2003- present

Lower Expected Progress

2.61
- Innovation and Flexibility
- Integration and Synergy
- Funds Management
- Emergency Response
- Training and Recruitment
- Translational Activities

Cluster Legend
Layer       Value
1      2.61 to 2.80
2      2.80 to 2.99
3      2.99 to 3.18
4      3.18 to 3.36
5      3.36 to 3.55
Importance by Expected Progress (absolute)

Importance n=74

Expected progress n=58

- Innovation and Flexibility
- Integration and Synergy
  - Funds Management
  - Capacity and Infrastructure
  - Research Mission
- Collaboration and Communication
- Training and Recruitment
- Emergency Response
- Management
- Research Mission
- Innovation and Flexibility
- Integration and Synergy
  - Funds Management
  - Capacity and Infrastructure
  - Research Mission
- Collaboration and Communication
- Training and Recruitment
- Emergency Response
- Translational Activities

r = .7
Importance by Expected Progress (relative)

Importance n=74

Expected progress n=58

- Innovation and Flexibility
- Integration and Synergy
- Management
- Collaboration and Communication
- Funds Management
- Capacity and Infrastructure
- Research Mission
- Training and Recruitment
- Emergency Response
- Translational Activities

r = .7
Comparing Views on Importance

NIAID or other Gov’t Agency n=13

RCE n=51

Innovation and Flexibility

Capacity and Infrastructure

Collaboration and Communication

Integration and Synergy

Management

Research Mission

Emergency Response

Training and Recruitment

Funds Management

Integration and Synergy

Research Mission

Capacity and Infrastructure

Collaboration and Communication

Management

Emergency Response

Training and Recruitment

Translational Activities

Translational Activities

r = .77
Comparing Views on Expected Progress

NIAID or other Gov’t Agency n=11

RCE n=41

- Innovation and Flexibility
- Integration and Synergy
- Collaboration and Communication
- Management
- Training and Recruitment
- Capacity and Infrastructure
- Research Mission
- Emergency Response
- Funds Management
- Translational Activities

r = .95

2.2

2.68
Go-Zone: Comparing Statements in a Cluster

Importance Mean for this cluster

Importance Mean in Category B for this cluster

Statement 21

Statement 47

Statement 12

Statement 27
promote and encourage opportunities for mentoring junior faculty/researchers in the field of biodefense and emerging infectious disease research. (7)

encourage the participation of post-docs, students, and other non-PI scientists at each RCE's regional meeting. (8)

recruit qualified students, trainees, women and minorities. (10)

create training that is relevant to and integrated with the goals of the strategic plans. (21)

develop an expanded cadre of new researchers, clinicians, and technical personnel who can help lead the national biodefense mission. (45)

bring new people into the area of biodefense and emerging infectious disease research. (80)

develop policies, criteria and processes for selecting career development candidates, including special efforts to recruit qualified women and minorities. (76)

help new investigators obtain funding. (16)

develop more standardized training programs across RCEs by looking at successful programs at each RCE and developing some best practices. (26)

supplement RCE activities by applying for direct training supports through T, K and F awards. (55)

establish training programs with pharmaceutical company partners to allow training of scientists in drug discovery and non-clinical development. (68)
Value to stakeholder participation

- Solicits input and facilitates feedback to participants.
- Equalizes input – a true co-authored framework
- Recognizes and reveals multiple perspectives and agendas.
- Defines success characteristics from multiple unique perspectives at the same time
- Increases buy-in and support for emerging and ongoing evaluation work
- Structured and systematic method for managing diverse stakeholder views at multiple levels