Why Evaluate Our Efforts?

- Required by NIH grant
- Allows us to make changes and modifications
- Allows us to “tell our story” and communicate what we are doing to others
- Successful research institutions have well integrated evaluation processes – it’s part of the culture (aimed towards success rather than compliance)
Evaluation of Multidisciplinary Translational Teams

- Outcome Evaluation
- Process Evaluation
- Developmental Evaluation

Major Orientations to Address in Evaluating Teams

<table>
<thead>
<tr>
<th>Outcome Evaluation</th>
<th>Process Evaluation</th>
<th>Developmental Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are agreed upon milestones and timelines being achieved?</td>
<td>How is the team interacting and communicating?</td>
<td>How are task-related behaviors at each stage of development being performed?</td>
</tr>
<tr>
<td>Are agreed upon outcomes (e.g., publications, patents, training, etc.) being addressed?</td>
<td>Are meetings regular, agenda-based, and well attended?</td>
<td>How are roles we expect members to fulfill being performed?</td>
</tr>
<tr>
<td>Are innovations or breakthroughs that are translational in nature being achieved?</td>
<td>Are internal and external parties being engaged collaboratively?</td>
<td>How are individual and team expertise being developed?</td>
</tr>
</tbody>
</table>
Methods to Evaluate Multidisciplinary Translational Teams

- Process Observation
- Records/Reports (publications, patents)
- Social Network Analysis
- Self Report Surveys

Logic Model Framework

- Using a generic framework, a logic model can be applied to CTSA operations:

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Outputs</th>
<th>Outcomes-Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate &amp; training programs</td>
<td>Training staff on Best Practices in Translational Science</td>
<td>CTSA trainees, students, fellows</td>
</tr>
<tr>
<td>Activities</td>
<td>Participation</td>
<td>Short</td>
</tr>
<tr>
<td>Increased knowledge of collaborative research</td>
<td>Increased participation in translational research by trainees</td>
<td>Institutional culture that values translational research by faculty and trainees</td>
</tr>
</tbody>
</table>

- Logic models (suggested by NIH) can apply to overall CTSA operation, a science project, or its key resources (components)
Tracking & Evaluating Teams: Incorporating Logic Models

- For each MTT:
  - **Project-based** model addresses CTSA activities (one or two research streams)
  - Because we are approaching translational science as a team endeavor, **development-based** models address a seven step team development cycle (team charter and vision, team process survey, team self assessment, team development plan, team coaching, team observation, external review)

Multidisciplinary Team Development Cycle: Activities/Process/Cycle
Tracking & Evaluating Teams: Identifying Project Outcomes

- **Project Models** included:
  - Short-term (1-3 years) and medium-term (4-6 year) outcomes were developed for major threads of CTSA funded project
  - Long-term (7-10 year) outcomes typically involved long-term science-specific accomplishments
    - Change in standards of care, diagnosis, or management of (specific disease state and specific population)
    - National and international recognition and reputation in a given area

---

Program: SAMTT PILOT STUDY  Logic Model

<table>
<thead>
<tr>
<th>Short</th>
<th>Outcomes Medium</th>
<th>Long</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify candidate biomarkers</td>
<td>Define biosignature that differentiates severe from non-severe asthma</td>
<td>Morbidity and mortality of asthma is reduced</td>
</tr>
<tr>
<td>Pilot data sufficient for RO1 application</td>
<td>Define biosignature that predicts response to therapy</td>
<td>Research is commercially viable providing income to fund further research at UTMB</td>
</tr>
<tr>
<td>External (NIH) funding is awarded</td>
<td>Quality of care for asthma patients is improved</td>
<td>UTMB improves status as center of excellence for translational asthma research</td>
</tr>
<tr>
<td>Large multicenter collaborations are funded</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**External Factors**
Continued NIH funding of translational research
## Developmental Logic Model

**Chart**

- **Objectives**
  - Short
  - Medium
  - Long

- **Milestones**
  - Establishment of MTI specific team minutes and project documentation on UTMB space
  - Increased skill level & knowledge of translational research and translational rigor
  - Identification of collaboration research partnerships and alliances
  - Identification of team developmental needs and action plans
  - Identification of funding sources and action plans

- **Outcomes**
  - Improvements in teamwork processes (ID Team Evaluation Factors)
  - Increased research collaborations and networks
  - Increased research productivity, publications, research opportunities, grants, funding, etc.

- **Comments**

### UTMB CTSA Quarterly Milestone Report

**Year:** 3  |  **Quarter:** 2  |  **Jul-Sep 2011**

**Aim:** Phenotypes of Severe Asthma

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Timeframe</th>
<th>Progress</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>Year 1</td>
<td>X X X X X X X X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>X X X X X X X X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Year 3</td>
<td>X X X X X X X X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Year 4</td>
<td>X X X X X X X X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Year 5</td>
<td>X X X X X X X X</td>
<td></td>
</tr>
</tbody>
</table>

- **Milestone 1:**
  - Recruit normal volunteers to establish a reference dataset of normal BAL proteins

- **Milestone 2:**
  - Create integrated clinical and proteomic database for severe asthma data management

- **Milestone 3:**
  - Develop web-based data capture forms for conducting clinical studies at UTMB and its clinics

### Comments:

- **M1:**
  - Recruit normal volunteers to establish a reference dataset of normal BAL proteins

- **M2:**
  - Create integrated clinical and proteomic database for severe asthma data management

- **M3:**
  - Develop web-based data capture forms for conducting clinical studies at UTMB and its clinics
## UTMB CTSA Quarterly Outcome Report

### Tracking & Evaluating Teams

#### MTT Short Term Outcomes (1-3 yrs)

### Severe Asthma

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Metrics</th>
<th>Progress/Status</th>
<th>Comments</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Trainee learns specific methods that can be applied to additional sputum samples</td>
<td>Increased involvement of trainee in performance of lab experiments until able to do so independently. Completion of first 20 sputum samples, followed by next 20, and so on.</td>
<td>20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Publishable paper(s) in high-profile lung/allergy specialty journal</td>
<td>Trainee will be mentioned in paper writing through composition of initial draft, followed by revisions necessary for publication as deemed by mentor(s). Submission of manuscript for publication</td>
<td>20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. NIH/NHLBI Grant submission with induced sputum as core</td>
<td>Great writing through composition of initial draft, followed by revisions necessary for submission as deemed by mentor(s). Yields grant submission on deadline.</td>
<td>30%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### MEDIUM TERM (4-6 YEARS)

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Metrics</th>
<th>Progress/Status</th>
<th>Comments</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Acceptance of Induced Sputum as an acceptable non-invasive biomarker</td>
<td>Search on keywords Induced Sputum and biomarker and asthma to determine increases in yearly numbers of meeting abstracts describing work with Induced Sputum as a biomarker in asthma and COPD. Number of abstracts in annual meeting proceedings of American Thoracic Society (ATS) and the American Academy of Allergy, Asthma, and Immunology (AAAAI).</td>
<td>20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Liptase by asthma research community as indicated by acceptance for national presentation and reference citation numbers</td>
<td>Search on keywords Induced Sputum &amp; &quot;biomarker&quot; &amp; &quot;asthma&quot; as published by year to determine increase in # of publications by year. Increased # of research citations in which &quot;Induced Sputum&quot; is used as non-invasive biomarker in asthma and/or COPD</td>
<td>10%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Use of Logic Models for Team Development: And Now for the Rest of the Story

- Build around a Team Development Cycle
- Utilizes 12 (The Big Twelve) team process factors that have been drawn from the literature in team science, desired by the NIH, and established by 60 years of behavioral and social sciences research as important to scientific production and innovation
- Because of the complexity of the logic model for team development, a more simplified developmental evaluation model for MTTs was constructed, but is fed by logic model

Internal Team Processes for MTTs: The Big Twelve

- Agreed-upon charter, vision, goals
- Agenda-based meetings/team documentation
- Internal and external collaboration/network creation
- Clarity of roles and responsibilities
- Acknowledgement and resolution of conflicts and barriers
- Focus on results and translational goals
- Empowerment-based leadership and support
- Effective decision making and problem solving
- Acknowledgement of expertise
- Focus on development
- Effective internal and external communications
- Challenge of process and scientific inquiry
Simplified Developmental Evaluation Model for Multidisciplinary Translational Teams

- Using information (truncated) from the two types of logic models, we created a taxonomy of MTT developmental states
- Project/traditional scientific logic models – data used to determine research and scientific progress
- Team development logic models – data used to ascertain status of development/evolution
- Result was a 2x2 matrix depicting teams as:
  - Exemplary Teams
  - Process Teams
  - Production Teams
  - Development Teams

Exemplary Teams = High production of published translational research and research products, new funding sources, and evolved and evident team processes.

Process Teams = Low production of published translational research and research products, no new funding sources, and evolved and evident team processes.

Traditional Teams = High production of published translational research and research products, and little evidence of evolved and evident team processes.

Development Teams = Low production of published translational research and research products, and no evidence of evolved and evident team processes.