National Cancer Institute

Evaluation of Large Initiatives Project at the NCI

Selected Findings & Lessons Learned

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health

Overview

- Evaluation of Large Initiatives (ELI) Project
- Transdisciplinary Tobacco Use Research Centers (TTURCs)
- TTURC Evaluation
  - Model Development
  - Researcher Survey
    - Collaboration & Transdisciplinary Factors
    - Conclusions
    - Future Directions
- Lessons Learned

ELI Team Members

- Original
  - William Trochim, Ph.D.
  - Stephen Marcus, Ph.D.
  - Louise Mâsse, Ph.D.
  - Richard Moser, Ph.D.
  - Ginny Hsieh, Ph.D.
  - Scott Marchand, M.P.A.
  - Patrick Weld, M.S.W., M.P.A.
- Current
  - Daniel Stokols, Ph.D.
  - Brandie Taylor, M.A.
  - Richard Moser, Ph.D.
  - Kara Hall, Ph.D.

TTURCs

- **Transdisciplinary Tobacco Use Research Centers (TTURCs)**
  - **First round in 1999 with seven centers**
  - **Second round in 2004 with seven centers**
    - **Includes six of original seven centers**

  - **Unique cross-center & transdisciplinary collaborations transversing public health & private research ventures**

  - **Instead of working in parallel, investigators collaborate across levels of analysis & intervention to develop a comprehensive understanding of tobacco use**

TTURC: Innovative Transdisciplinary Goals

- **Increase the number of investigators from relevant disciplines who focus on the study of tobacco use as part of transdisciplinary teams**
- Generate basic research evidence to improve understanding of the etiology & natural history of tobacco use
- Produce evidence-based tobacco use interventions that can translate to the community & specific understudied or underserved populations
- Increase the number of evidence-based interventions that are novel, including the development, testing & dissemination of innovative behavioral treatments & prevention strategies based upon findings from basic research
- **Train transdisciplinary investigators capable of conducting cutting-edge tobacco use research**
- Increase the number of peer-reviewed publications in the areas of tobacco use, nicotine addiction, & treatment

TTURC Evaluation Objectives

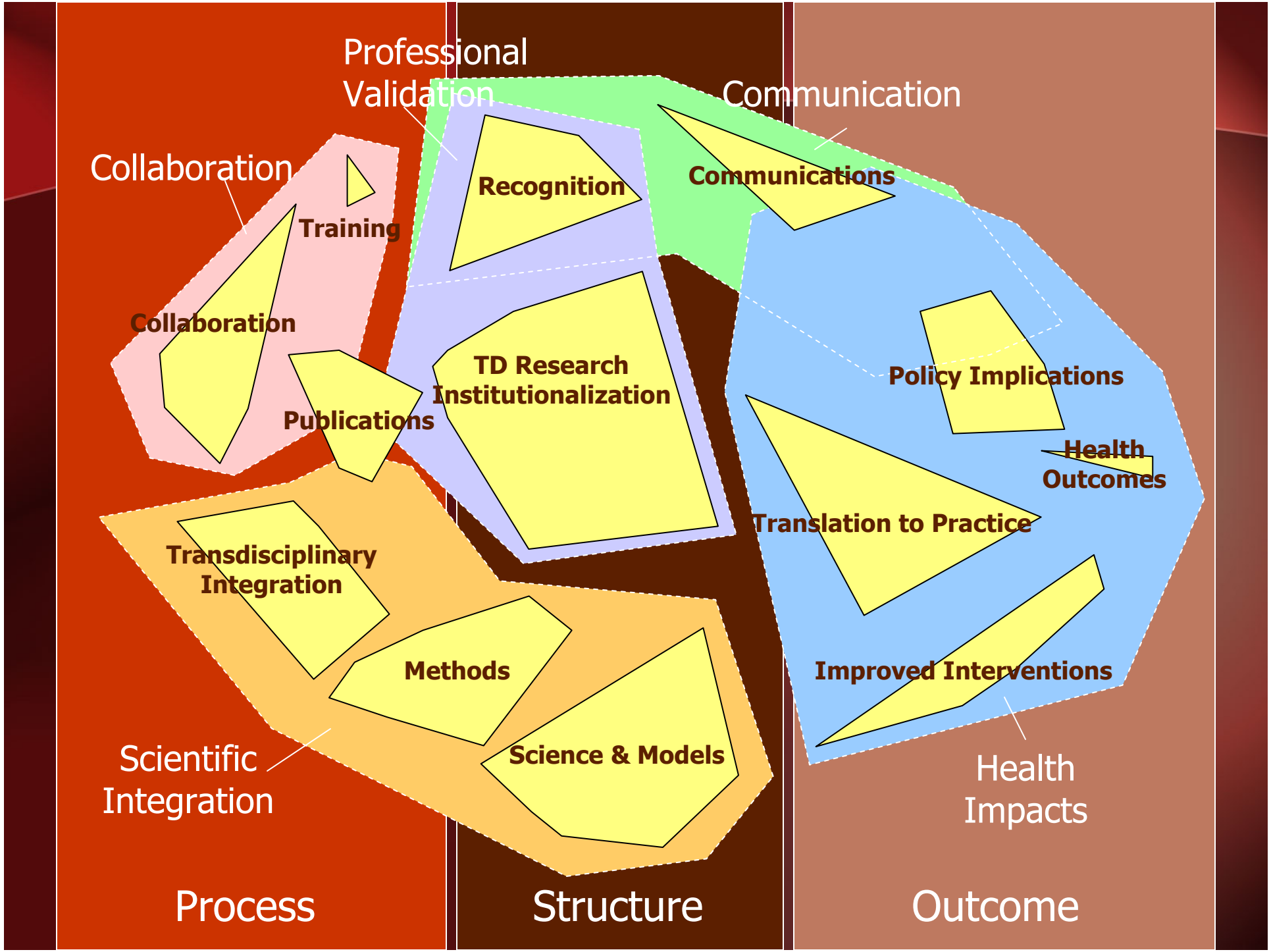
- Conduct a comprehensive & empirical evaluation of assumptions & ideas about how to improve science
  - Innovative nature of TD collaboration & aims of the TTURC initiative
  - Provide feedback/benchmarking for improvement to all stakeholders
- Create a standardized evaluation system that allows for initiative-tailored details
- Build systems & capacity to implement evaluation of large initiatives at NCI
- Provide accountability for significant expenditures on large initiatives
- Create a model for future evaluation of NCI TD initiatives
- Enhance the science of evaluation – practice what we preach

Evaluation Project Development

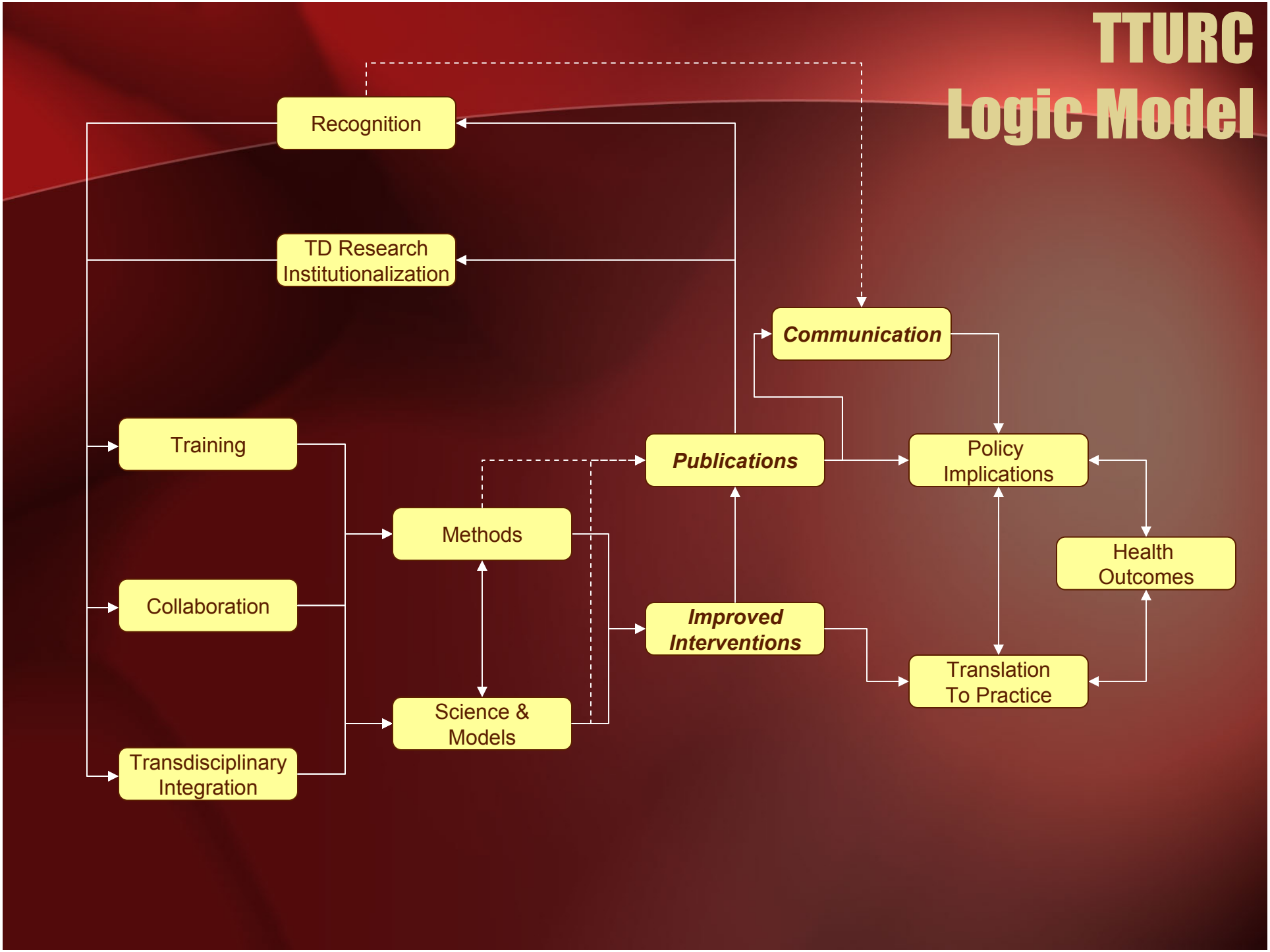
- **Outcome Map**
  - Generation & organization of outcomes
- **Logic Model**
- **Measurement Development**
  - Measurement Database
  - Instrument by Construct Matrix
- **Pilot Testing and Revisions**
- **Implementation**

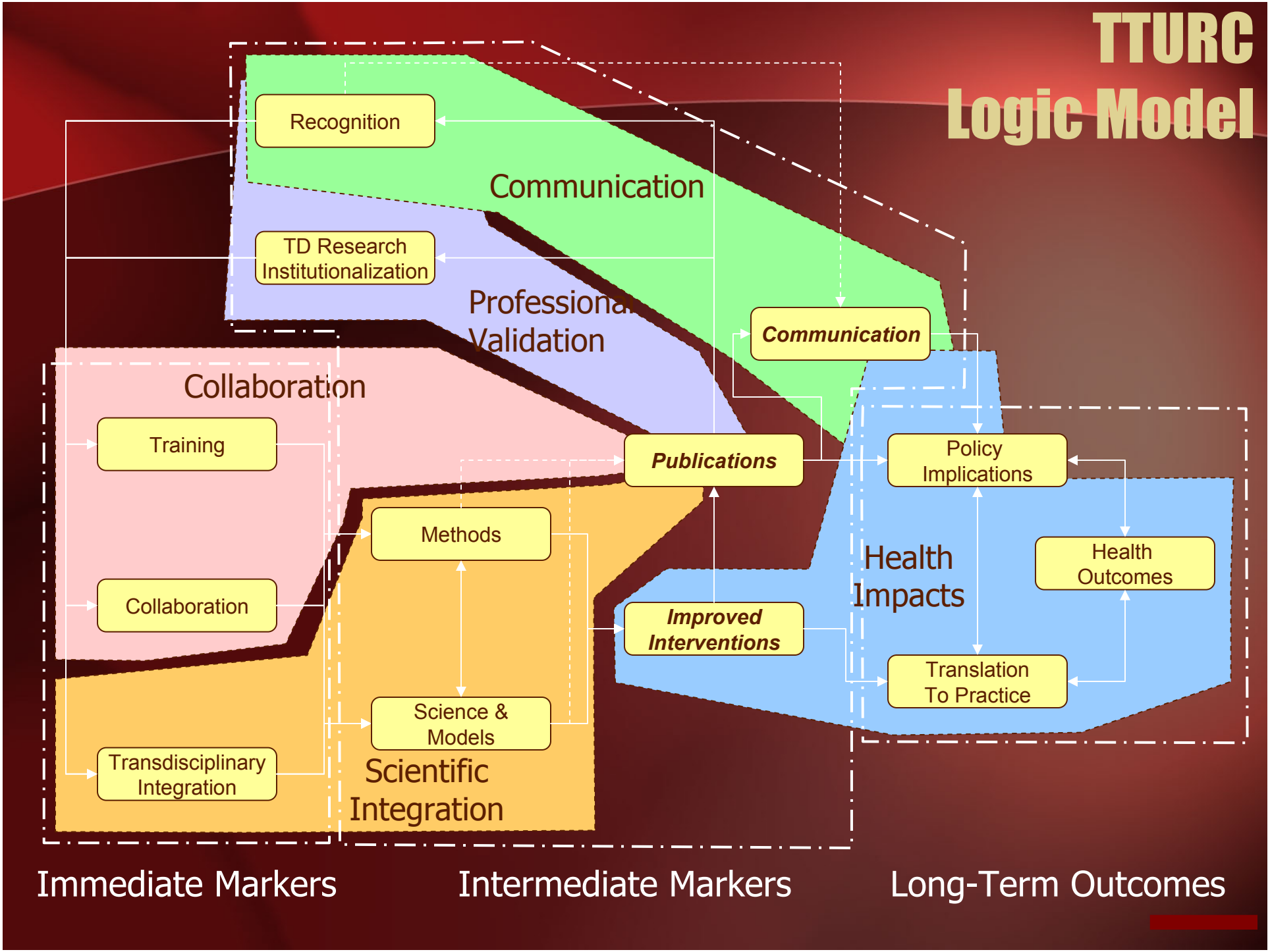
Model Development

- Participants: TTURC researchers
- Brainstormed 262 specific outcomes
  →edited to 97 outcomes
- Mapped into 13 outcome constructs
- Developed sequence of outcomes
- Developed evaluation questions

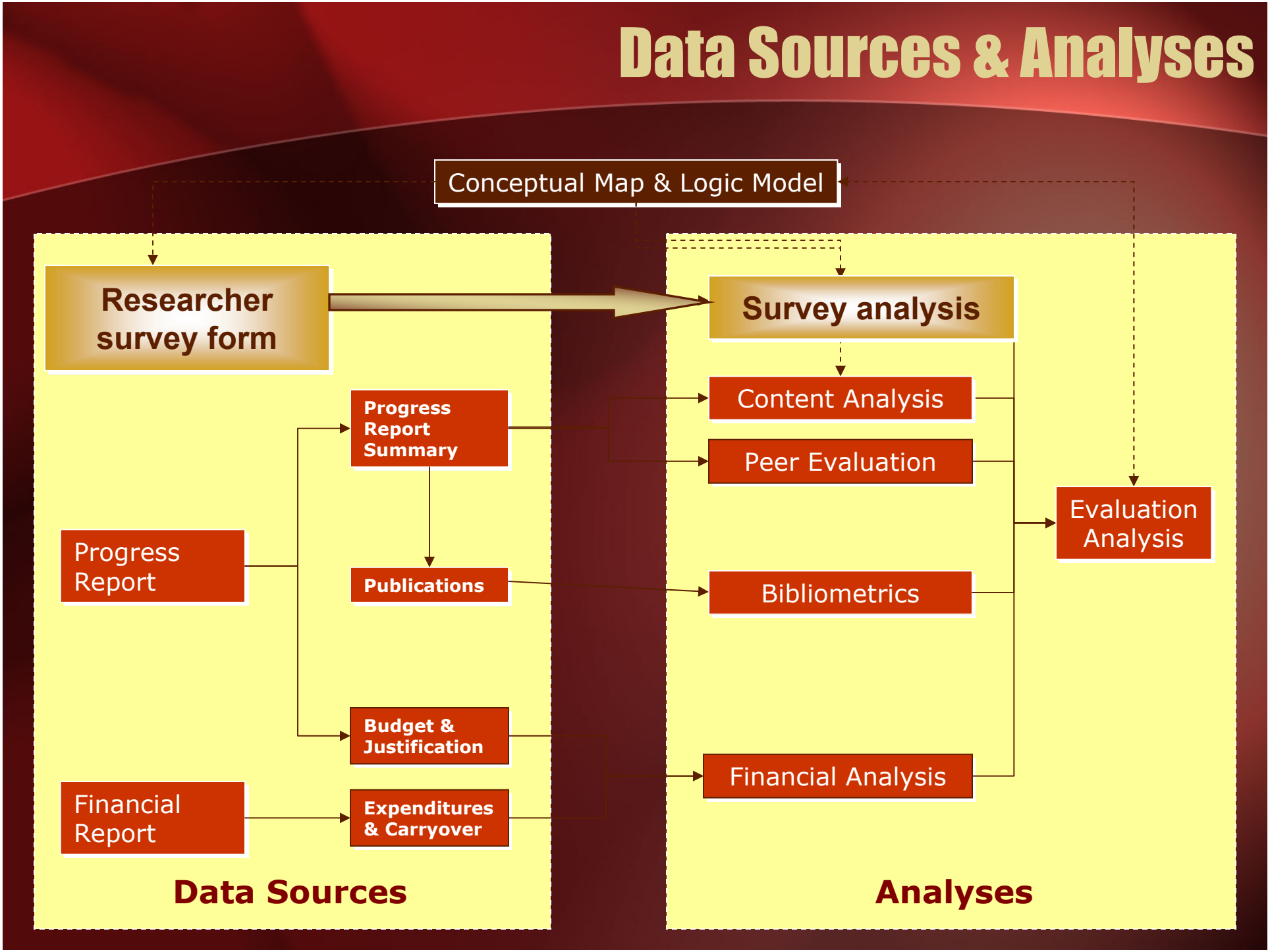

Professional Validation
Communication
Collaboration
Recognition
Communications
Training
Collaboration
TD Research Institutionalization
Policy Implications
Publications
Health Outcomes
Translation to Practice
Transdisciplinary Integration
Methods
Improved Interventions
Science & Models
Scientific Integration
Health Impacts
Process
Structure
Outcome

TTURC Logic Model



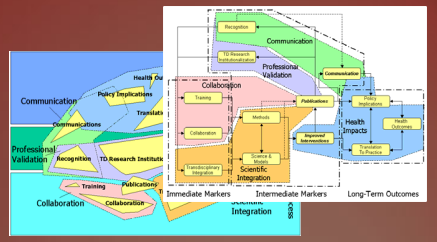

TTURC
Logic Model
Recognition
Communication
TD Research
Institutionalization
Professional
Validation
Communication
Collaboration
Training
Publications
Policy
Implications
Methods
Health
Outcomes
Health
Impacts
Collaboration
Improved
Interventions
Translation
To Practice
Science &
Models
Transdisciplinary
Integration
Scientific
Integration
Immediate Markers
Intermediate Markers
Long-Term Outcomes

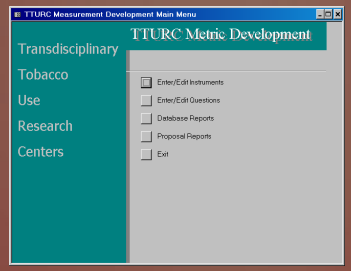
Data Sources & Analyses

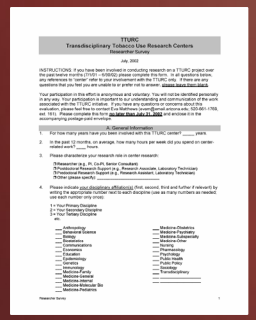


Researcher Survey Form

- Each center responsible for generating measures for 3-4 clusters on the map (at least two centers reviewed each cluster)
- 244 specific measurement items proposed across the 13 content clusters
- Compiled into measure development database, draft measure produced
- Review/revisions:
  - Internal NCI
  - TTURC Consulting Committee
  - Internal NCI
  - TTURC PIs
- Final Draft Form







Overview of Researcher Survey

- Timeframe = Year 3 of TTURC I
- 92% response rate (216 out of 234)
- 25 closed-ended questions (with sub-items); 3 open-ended questions (neg & pos aspects, other comments)
- Assessed each construct in logic model using scales & indices
- Used CFA to assess collaboration & transdisciplinary scales

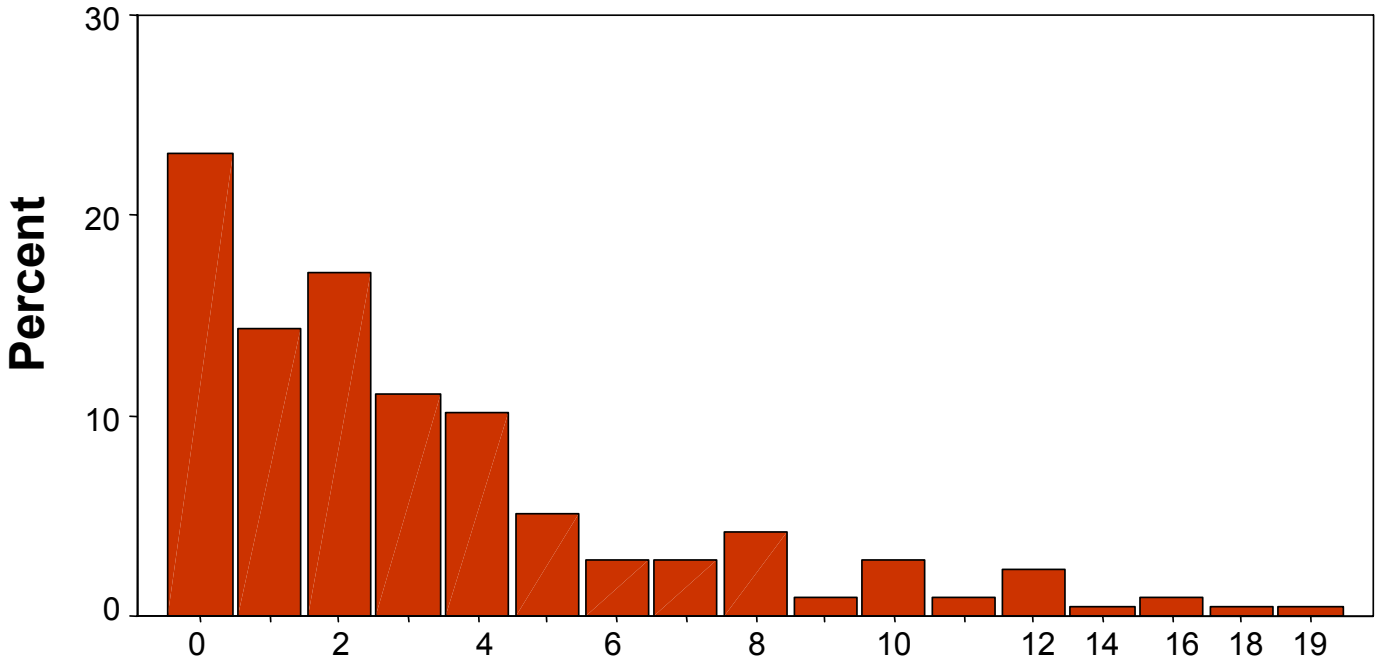
Survey Scales & Indexes

- Attitudes about Transdisciplinary Research Scale (15 items)
- Center Collaboration Scale (15 items)
- Attitudes about Collaboration in Research Scale (8 items)
- Institutional Support Index (12 items)
- Methods Progress Scale (7 items)
- Science and Models Scale (17 items)
- Barriers to Communications Scale (8 items)
- Center-to-Researcher Communications (5 items)
- Center External Communications (2 items)
- Progress on Development of Interventions Index (12 items)
- Policy Impact Index (4 items)
- Translation to Practice Index(9 items)
- Health Outcome Impact Scale (6 items)

Confirmatory Factor Analysis (CFA): Summary

- **A-priori factor structure of collaboration & TD scales validated with minor modifications:**
  - **Collaboration items:**
    - **Measure 3 dimensions:**
      - **Satisfaction with collaboration**
      - **Impact of collaboration**
      - **Trust & respect**
    - **One negatively-worded item removed**
  - **Transdisciplinary items:**
    - **Measure 1 dimension**
    - **All negatively-worded items removed**

Researcher Survey: Number of New Disciplines Worked With



Researcher Survey: Sample Correlations for Collaboration & TD Factors

Selected Outcomes

	Productivity – Articles in Press or Published	Science & Models – Average Progress	Methods	Health Outcomes
# New Disciplines	.20* (N=128)	.16* (N=185)	.23** (N=179)	.18* (N=191)
Global Collaboration Factor	.17 (N=119)	.56** (N=170)	.46** (N=170)	.40** (N=170)
TD Integration Factor	.07 (N=125)	.43** (N=177)	.39** (N=175)	.31** (N=179)

*p<.05
**p<.01

Researcher Survey: Summary Collaboration & TD Results

- **Within Center Collaboration:**
  - **Evaluations:**
    - **Highest: new ideas & capitalize on strengths of diff researchers**
    - **Lowest: resolution of conflicts & productivity of collaboration meetings**
  - **Attitudes:**
    - **Strong respect**
    - **Collaboration = time burden**
  - **Overall:**
    - **Positive about collaborating**
    - **Barriers to effectively accomplish in practice**
- **Transdisciplinary Research:**
  - **Strong, positive attitudes**

Researcher Survey Summary Conclusions: Collaboration & TD

- **Researchers report:**
  - collaborating across disciplines
  - value both collaboration & TD
- **Significant process barriers to collaboration:**
  - Difficulties: resolving conflicts, conducting productive meetings, increased burden time
  - Deceased communications due to decreased time & information overload
- **Center differences may be useful in understanding differential eval results that may emerge across centers in subsequent evaluations**
  - Significant differences by Center on 24 of 26 scale or index scores

Limitations & Future Directions

- **Limitations**
  - **Lack of:**
    - **Baseline data**
    - **Repeated measures**
    - **Comparison/control group**

- **Future Directions**
  - **Further analysis of existing data (TTURC I & II)**
  - **Supplemental Questions from TTURC II Progress Reports**
  - **Social Network Analysis (in progress)**
  - **Repeated Measures:**
    - **Analyze trends**
    - **Predictive Modeling**
  - **Comparison/Control Group**

Lessons Learned: Key Elements for Successful Evaluation of TD Research

- **Collaborative**
  - Incorporates the input & expectations of the varied disciplines & perspectives represented (e.g., establish partnership among stakeholders)
  - Considered an integral part of the initiative & thus embodying the TD & collaborative principles
- **Rigorous**
  - Operationalize factors & definitions
  - Objective data
  - Repeated measures & Baseline data
  - Assess quality of evaluation measures
  - Comparison & control groups
- **Multiple Methods & Data Sources**
  - quantitative & qualitative
  - experimental & correlational
  - formative & summative

Lessons Learned: Key Elements for Successful Evaluation of TD Research

- **Dissemination & Feedback Loop**
  - Stakeholders & initiative
  - Evaluation process itself
- **Cost Efficient**
  - Use high-quality, low-cost data collection procedures
- **Time Efficient**
  - Minimize burden
- **Comprehensive**
  - Depicts breadth & depth of activities
  - Proximal & distal outcomes
  - Maintain support & resources for sustained evaluation activities (e.g., Coordination Center)