

# Panel: Challenges of Monitoring Technology Transfer in IUCRCs

NSF I/UCRC Evaluator Meeting  
Courtyard by Marriott Crystal City  
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Moderator: Craig Scott

Panelists:

Connie Chang

Donald Davis



The NSF & the IUCRC Program need  
quality Information about tech transfer  
and economic impacts

Who are their stakeholders  
that need this information?



# Multiple Data Sources

- University Provided:
  - Success Stories
  - Research Highlights
- Industry provided:
  - Technology Breakthroughs (Compendium)
  - Technology Transfer Information (collected at meetings and in interviews)
- Multiple paths can delay arrival at the destination



# Donald Davis



Success Stories, Research  
Highlights, Technology  
Breakthroughs, and Technology  
Transfers:  
Must We only Walk Long Enough?

Donald Davis  
Old Dominion University

# Alice and the Cheshire Cat in Wonderland

- Alice: *“Would you tell me, please, which way I ought to go from here?”*
- Cat: *“That depends a good deal on where you want to get to.”*
- Alice: *“I don’t much care where.”*
- Cat: *“Then it doesn’t matter which way you go.”*
- Alice adds an explanation: *“--so long as I get somewhere.”*
- Cat: *“Oh, you’re sure to do that, if only you walk long enough.”*



# Success Stories, Research Highlights, Technology Breakthroughs, and Technology Transfers

- All are important and valid paths that take time—sometimes a long time—to reach center success
- Do we arrive at center success if we “only walk long enough” down all of these paths?
- Do we arrive at center success sooner if we walk down only 1 or 2, more direct paths?
- Do new paths, e.g., economic impact, help us to arrive at center success sooner or later?



# Challenges Along the Path

- Evaluators can assess outcomes only indirectly
- Indicators of TT success: unknown validity and reliability; may only be slightly correlated
- Indicators of success provided by CDs and IAB reps may not align well
  - Center director/PI reports of research highlight & Success Stories (+ others?)
  - IAB member reports of tech transfer: Scott's Tech Breakthroughs Compendium. Some have tried his 1-page Tech Transfer Survey
- The above by necessity are estimates SWAGs (Scientific Wild Ass Guesses)?





# Connie Chang



# Several challenges ...

- Appropriateness and effectiveness
  - Is the evaluation methodology (e.g., survey, descriptive case study, economic estimation case study, social network analysis) the most appropriate for addressing the performance metric in question?
  - Is the data collection approach (e.g., expert interview, review of records, administered questionnaires) effective?
  - And more specifically, are we asking the questions that we want answered?



# Several challenges, cont'd

- Diversity
  - Are we employing the right mix of evaluation methods to ferret out the data we hope to analyze against the program's intended outputs/outcomes/impacts?
- Frequency and redundancy
  - Is the frequency and timing of data collection at the right level?
  - Is there redundancy in data collection efforts?
  - Are we over-saturating our respondents and evaluators with requests? Can we reduce the burden?



# We might want to consider ...

- Asking evaluators what their experiences have been in administering data collection efforts across Centers
  - What works?
  - What doesn't?
- Asking Center Directors and member co's their opinions
  - Do they have concerns about timing, frequency, content of data collection?
  - Are we asking the right questions of the right people?
  - Do they opt out of addressing some questions? If so, why?



## We might also want to consider ...

- Performing a cross-cutting analysis of Tech Transfer, Research Breakthroughs, Success Stories, & Economic Impacts
  - Are we clear on what each of the above are?
  - Are we clear on how and when to collect?
  - Are we clear on how and to whom to report the analytical findings?



# We might also want to consider, cont'd

- Opportunities, cautions, best practices going forward
  - Compare the evaluation efforts of similar federal programs?
  - Perform a logic modeling exercise to get everyone on the same page?
  - Brainstorm how best to capture data and how best to tell the impact story to NSF stakeholders?
  - Hold a session at the January Directors meeting to convey the importance and purpose of the evaluation instruments that will be administered?



## (Extra slide on logic model)

- An evaluation logic model
  - Reveals, in a clear diagram, the linkages of the program’s mission to its resources (inputs) and activities, and the intended consequences (outputs, outcomes, impacts)
  - Identifies critical measures of performance (i.e., what constitutes success?) against a timeline
  - Helps condition stakeholder expectations
  - Provides a structure for telling the program’s “story”

