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”