Health Research Alliance

Evaluating Impact: Lessons Learned

Health Research Alliance Members Meeting
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Health Resources in Action
Advancing Public Health and Medical Research

Problem 1: What metrics would show progress towards these goals?

RICHARD AND SUSAN
Smith
Family
Foundation

Odyssey Award

Generate biomedical breakthroughs (longer term)

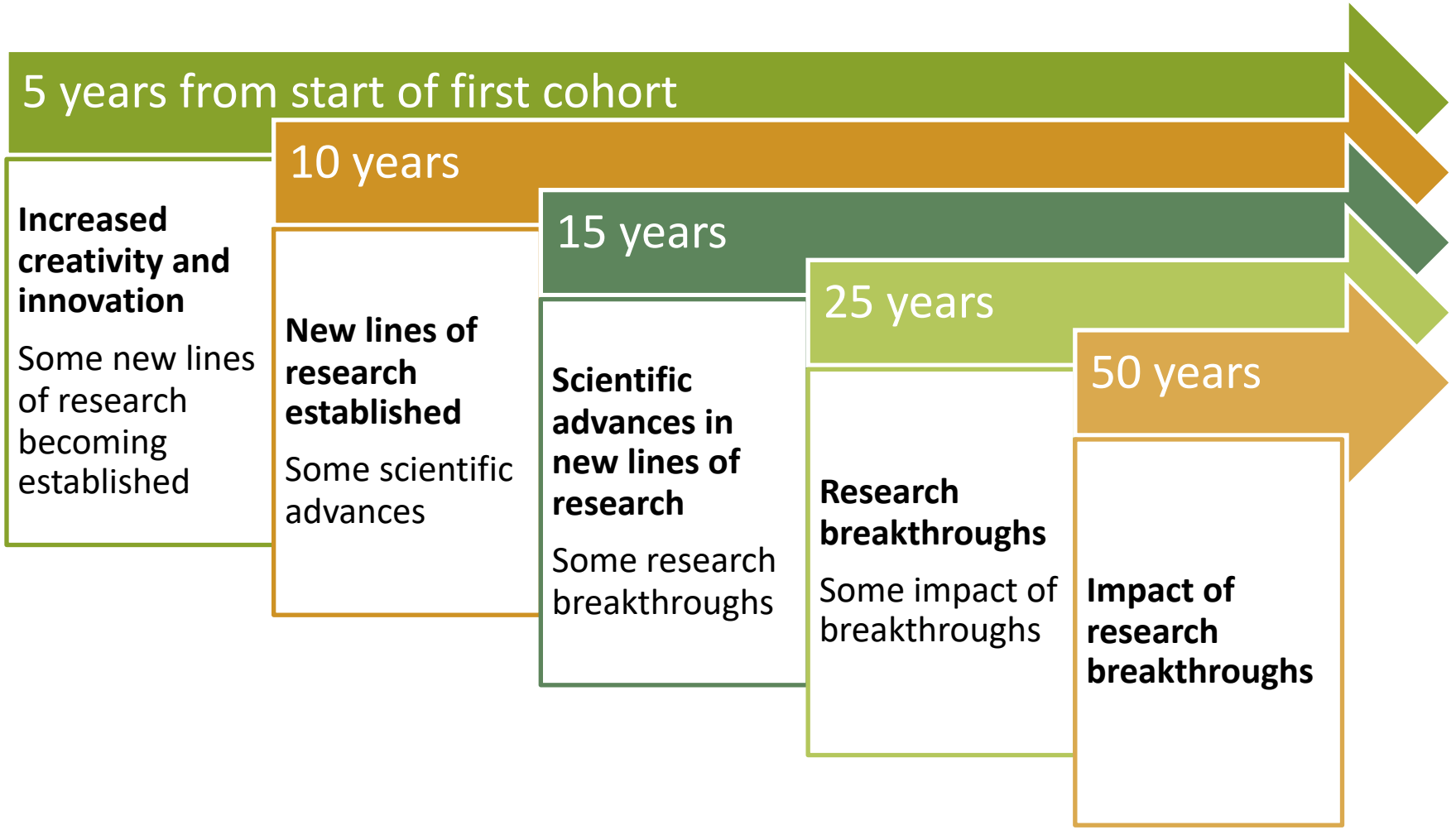
Fuel creativity and innovation

Drive new research directions

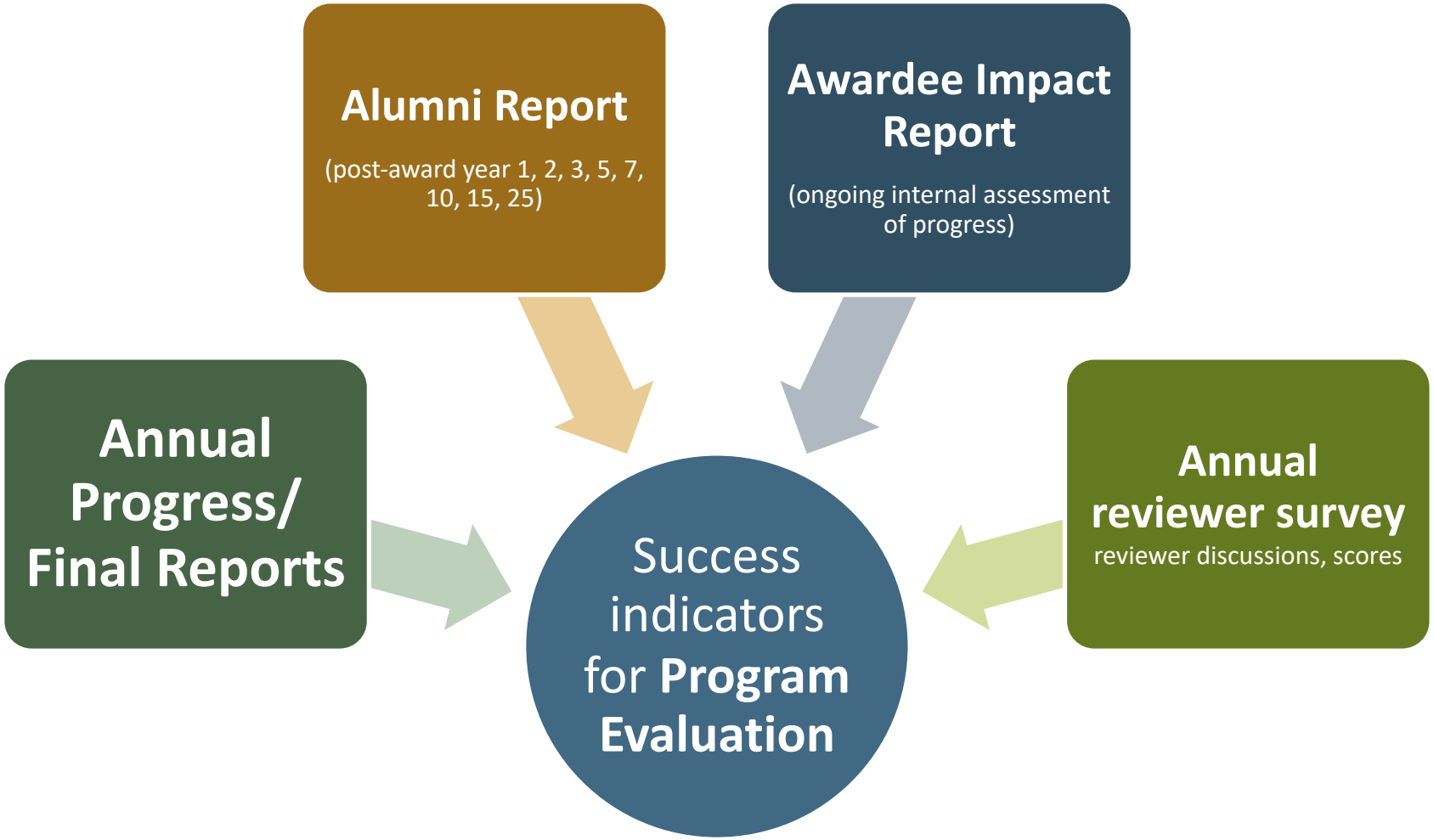
Eligibility:

- 4-9 years from start of first independent research position (tenure-track or equivalent)
- Currently have less than $750K external funding per year
- Project must be new direction for researcher, and new direction for the field

At year 5, the foundation wanted to know if they should continue funding



Lesson Learned: Pilot evaluation metrics before analyzing full dataset



Lesson Learned: Not every evaluation needs to involve every metric

Evaluation Metrics Matrix

From the presentation:

Research Impact Evaluation

Jen Mortensen, PhD

American Heart Association

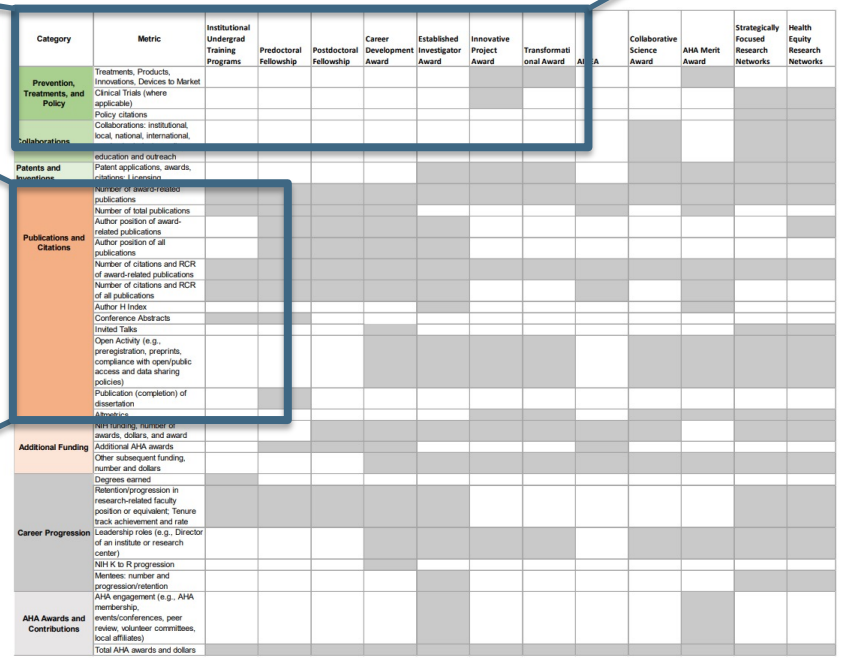
Oct. 6, 2022

https://www.healthra.org/wp-content/uploads/2022/10/Jen-Mortensen-Evaluation-Fall-2022-NYC.pdf

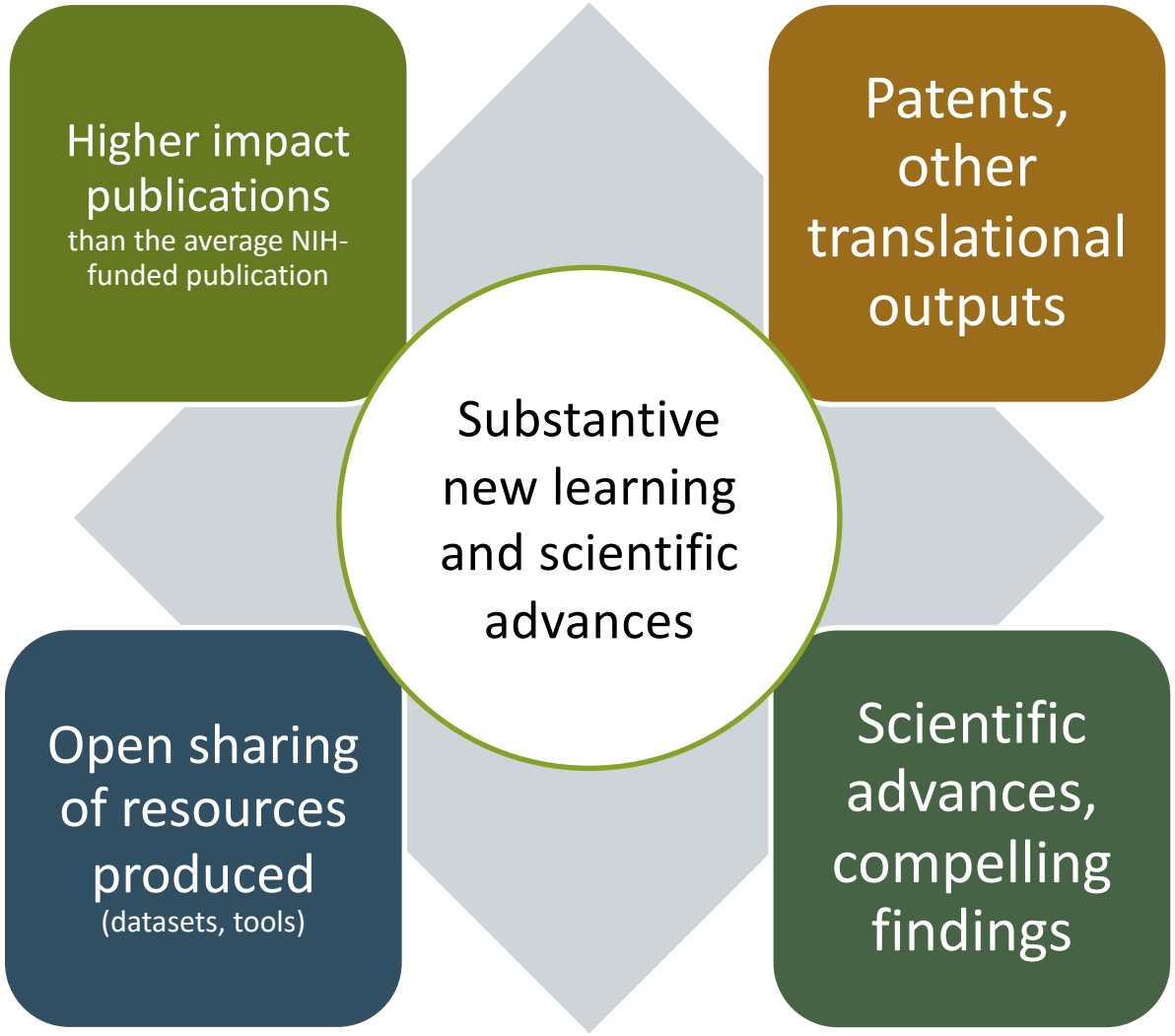
https://www.healthra.org/events/fall-2022/

Category	Metric	Institutional Undergrad Training Programs	Predoctoral Fellowship	Postdoctoral Fellowship	Career Development Award	Established Investigator Award	Innovative Project Award	Transformational Award	AIRE
Prevention, Treatments, and Policy	Treatments, Products, Innovations, Devices to Market								
	Clinical Trials (where applicable)								
	Policy citations								
	Collaborations: institutional,								

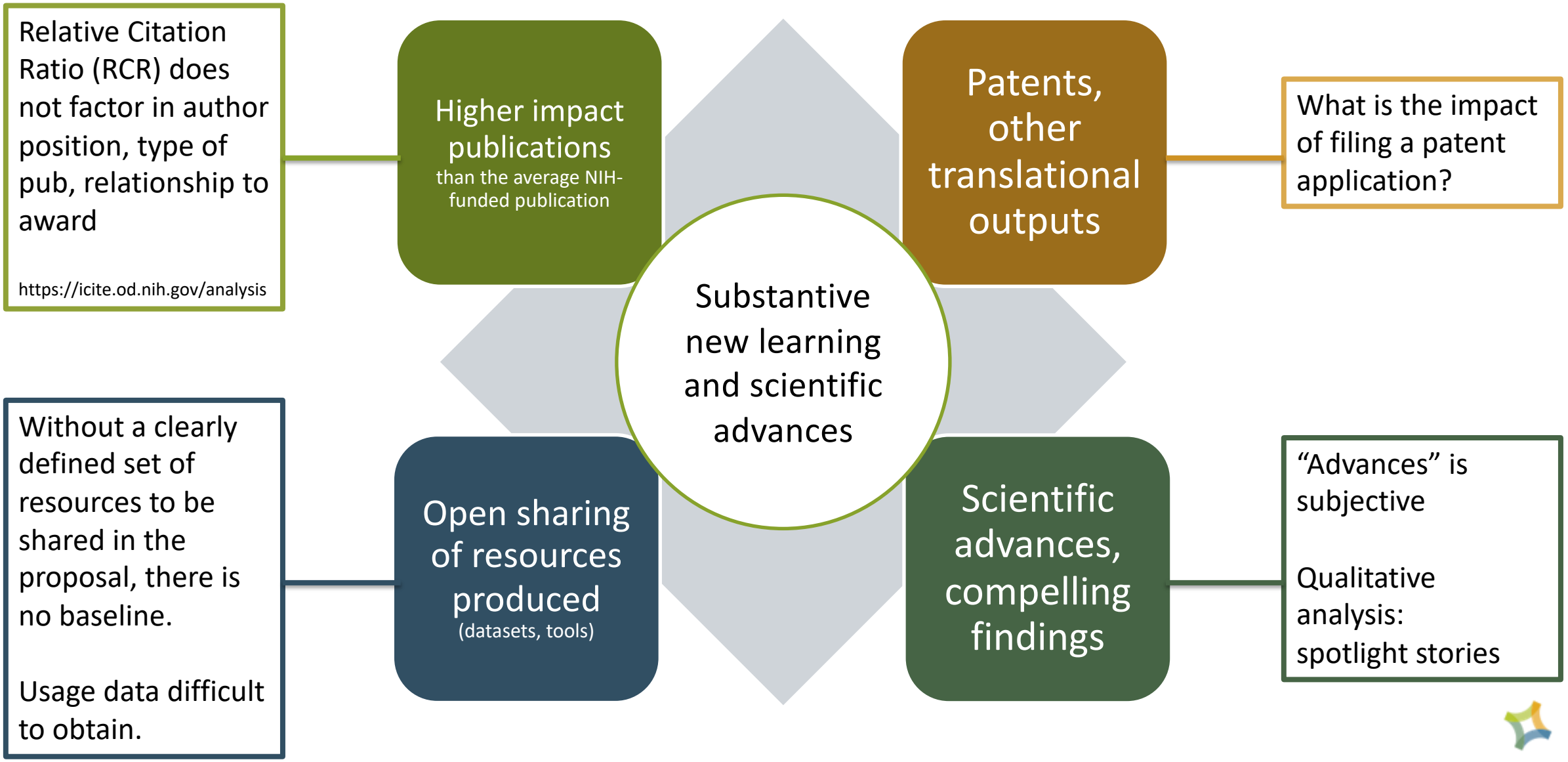
Publications and Citations	Number of award-related publications								
	Number of total publications								
	Author position of award-related publications								
	Author position of all publications								
	Number of citations and RCR of award-related publications								
	Number of citations and RCR of all publications								
	Author H Index								
	Conference Abstracts								
	Invited Talks								
	Open Activity (e.g., preregistration, preprints, compliance with open/public access and data sharing policies)								
	Publication (completion) of dissertation								



Problem 2: How can standard metrics be used in a more convincing way?



Lesson Learned: Even simple metrics required manual curation and analysis



Problem 3: How to quantify subjective metrics of **creativity and innovation**?

Enabling **new research direction**

How new is new?
New to researcher, to the field, or both?

Unanticipated learning and unexpected pivots

Which pivots and unexpected results are worth noting?
How to quantify? Baseline?

Frequent **collaboration across fields**

How to account for quality of collaboration? Relevance to funding? Benchmark?

Lesson learned: Include impact evaluation metrics on report forms with the level of nuance needed for evaluation *(define abstract concepts in advance)*

Problem 4: How to demonstrate if a new research direction is being **established**?

Training research staff

Lessons learned:

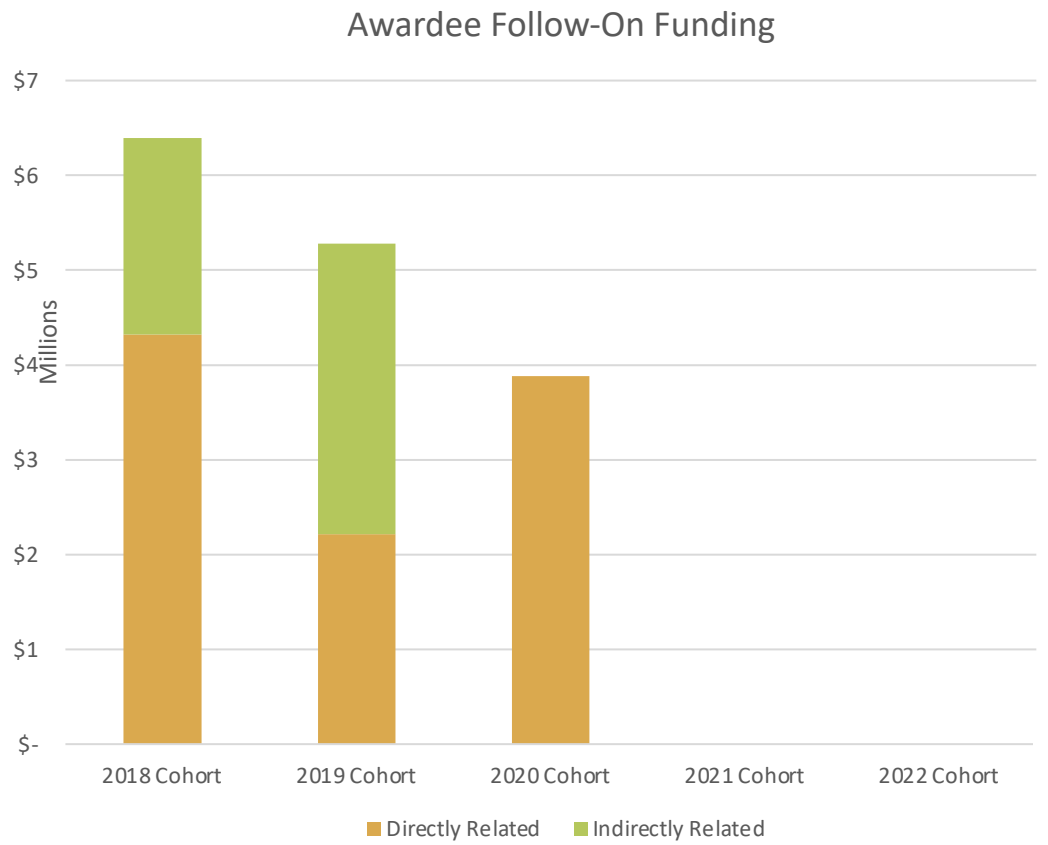
- Size of award = Number of trainees (same for all awardees)
- Would need to follow trainees to assess establishment of research direction

Qualitative responses:

"*The funding allowed me to support a highly productive trainee who has been able to expand his skill set while working on the project*."

Follow-on funding

Lesson learned: Requires specificity from grantees regarding directly- or indirectly-related (somewhat subjective)



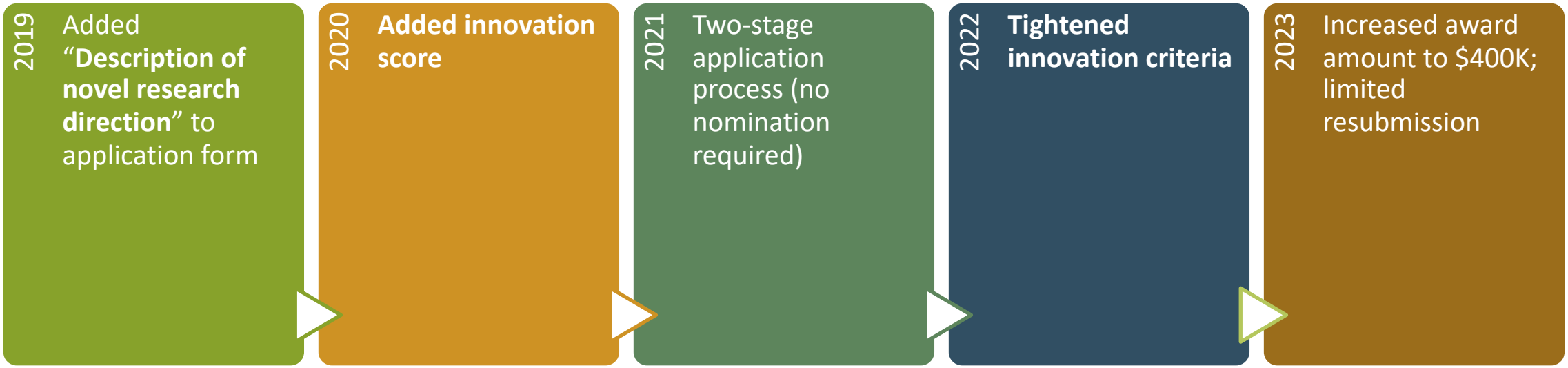
Spotlight example: **Establishing new research directions**

- Lydia Bourouiba: Physicist/mathematician who partnered with clinicians and virologists to study flu transmission; segued to COVID-19
- Pioneered **new field of fluid dynamics of disease transmission**
- Submitted a **patent application** for point-of-care device that can measure “stringiness” of saliva samples
- Now recognized as a leading expert in the field of infectious disease transmission

Elected Fellow of the American Institute for Medical and Biological Engineering
“***for groundbreaking contributions to our fundamental understanding of unsteady fluid fragmentation and its application to the spread of contagious disease***”

Evaluation outcome: Continue the program, no major changes

The program has a robust system of surfacing program improvement suggestions from the review committee and has evolved annually.



Funder feedback: loved the impact stories, would like more benchmarks for comparison

Changes for 10-year evaluation:

- Tweak our report forms and how we will collect data.
- Find appropriate baseline/benchmark numbers.
- Consider spotlights on "failures" for learning and deeper understanding of risk.

Summary of key lessons learned (and a few new ones)

Metrics

- **Pilot metrics of evaluation** before analyzing all data (don't try to use all possible metrics.)
- Common sense check: What is this metric really telling me? Use **manual curation and analysis** if necessary/possible
- Include impact metrics in **progress and final report forms** with the level of nuance needed for evaluation (define abstract concepts in advance)
- **Be prepared for not all metrics to be informative**
  (e.g., career progression not informative at five years, many confounding factors)

Engagement

- **Spotlight stories** keep the audience engaged

Bias

- Different picture looking **across program years** than within (e.g., institutional bias)
- Evolving **demographic categories** may make this harder for a while

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Thank you!

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