

ARPA-H:

The Advanced Research Projects Agency for Health

Update for Council of Councils Meeting
September 9, 2022

ARPA-H: Our Why, How, and What



Adam Russell, D.Phil.
Acting Deputy Director, ARPA-H

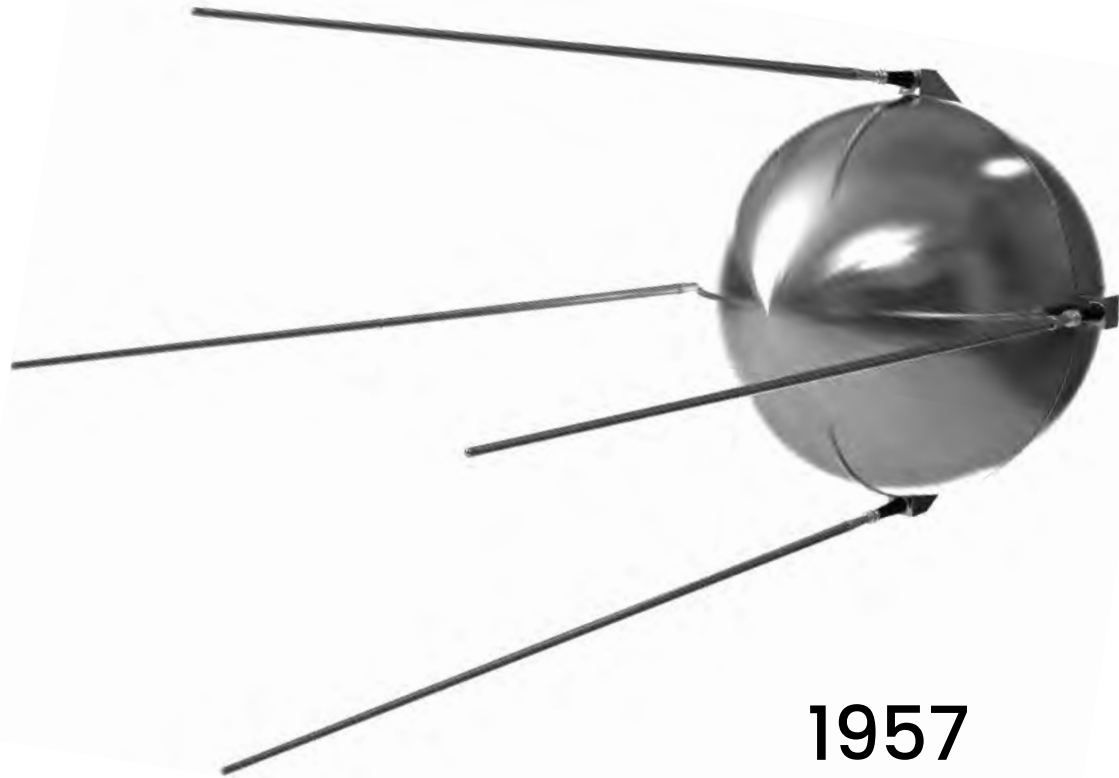
Innovate. Demonstrate. Empower.

ARPA-H's “Why”

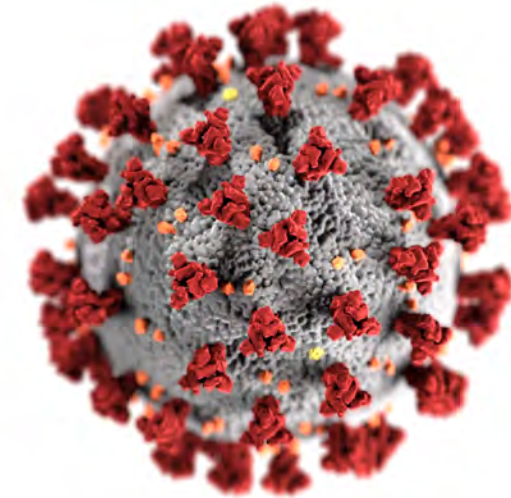
ARPA•H



Strategic Surprise?



1957

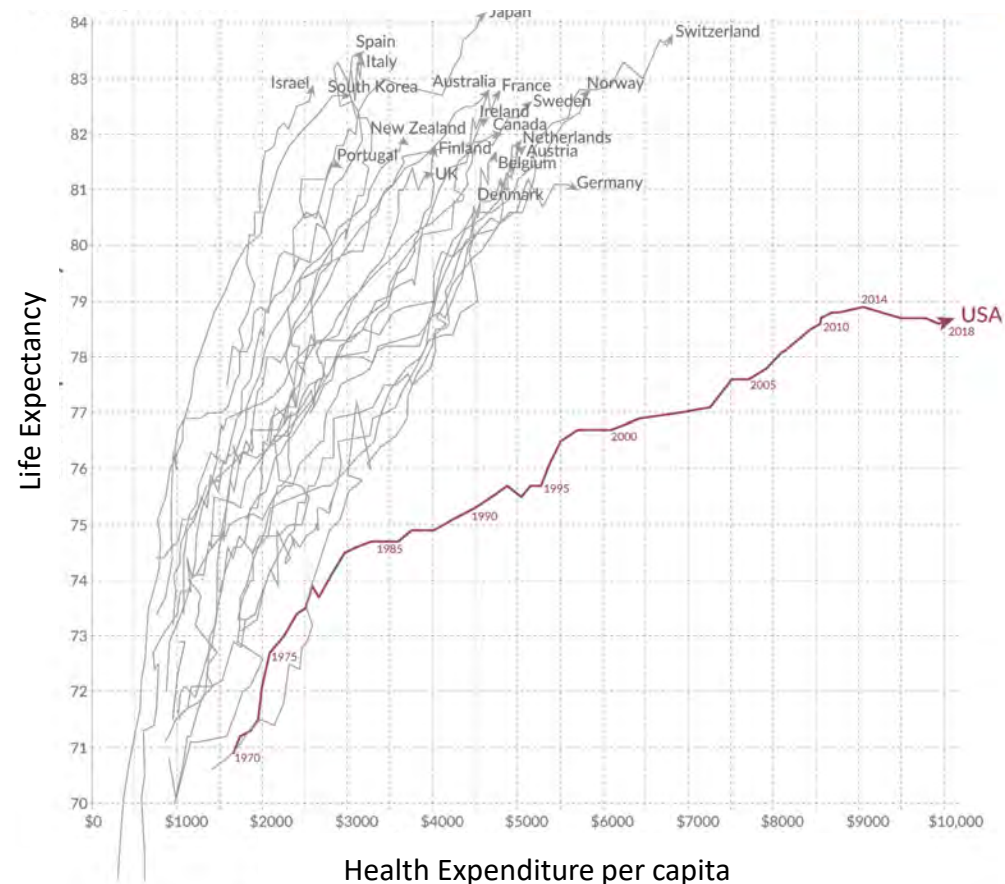


2019

Why now?

- COVID
- Neurodegenerative diseases
- Addiction
- Obesity
- Depression and suicide
- Infant mortality
- AD, cancer, diabetes

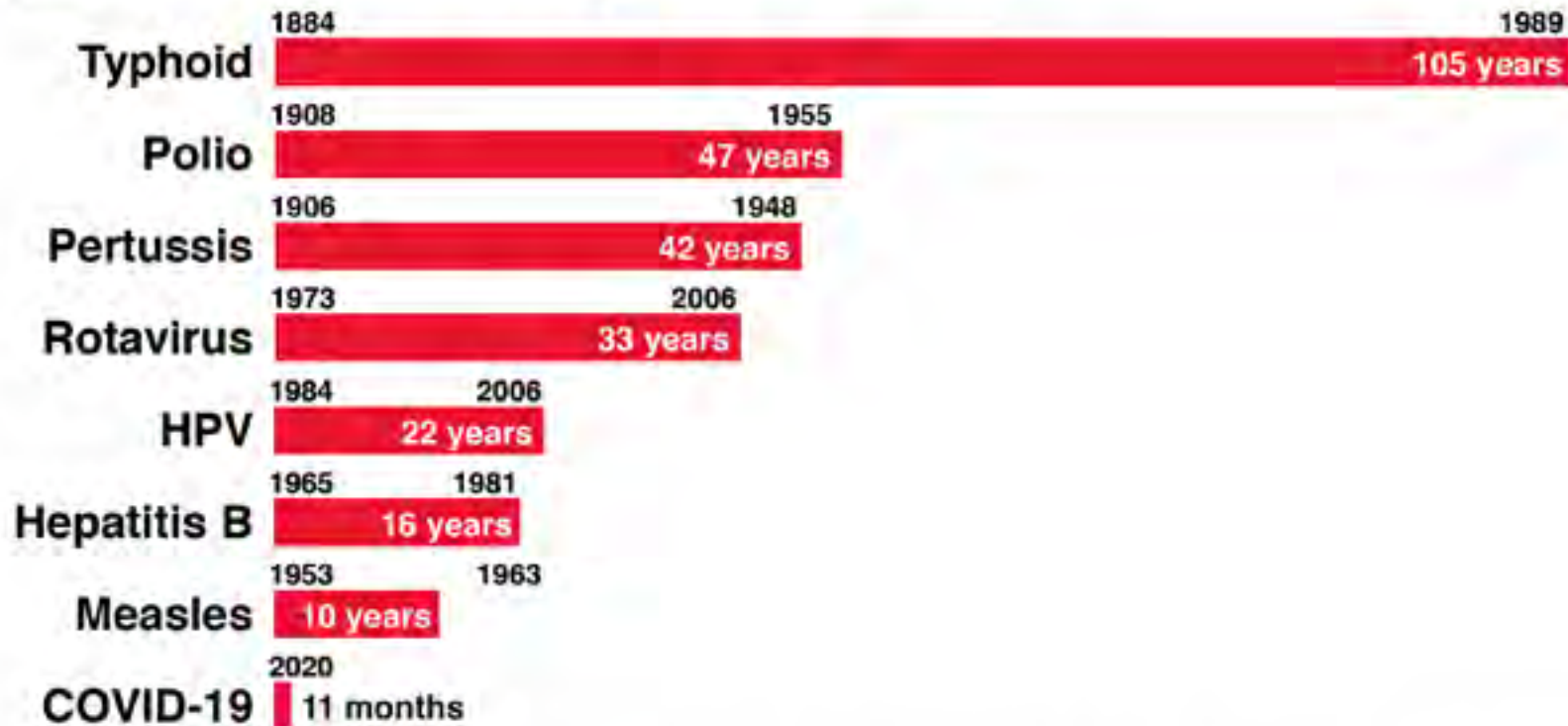
Life expectancy vs. Health Expenditure From 1970-2018



Health Expenditure per capita
Adjusted for inflation and price difference between countries (PPP)
Source: ourworldindata.org

We've seen what urgency and technology can do for infectious disease...

Time to Develop a Vaccine



Duration between discovery of microbiologic cause of selected infectious diseases and development of a vaccine.

Adapted from AVAC

What if we could do this across all of health?



- Develop mRNA vaccines to prevent most cancers



- Make sleep easier, more energizing and healing



- Create accessible, on-demand health data to manage chronic disease



- Help people find accurate, relevant health information that they can trust

Mission, Vision, and Approach

Mission

- **Innovate** high-impact health solutions for well-defined problems
- **Demonstrate** what health futures are possible for all

Vision

- **Empower** every American to realize their health potential

Approach



Listening Session Feedback - By the Numbers

- **5100+ Participants**
- **Nearly 250 Organizations**
- **15 Sessions**



White House and National
Institutes of Health Close Out
Listening Sessions with Over
5,100 Stakeholders on the
Proposed Advanced Research
Projects Agency for Health

AUGUST 17, 2021 • PRESS RELEASES



Listening Session Feedback - What We Heard

Scientific Portfolio

- Complementarity to NIH
- Health equity & diversity
- Not disease-specific
- Data
- Commercialization



Listening Session Feedback - What We Heard

Streamlined Processes

- Stakeholder Engagement
- Multidisciplinary Partnerships



Summary Report Released



BRIEFING ROOM

White House and National Institutes of Health Release Report Summarizing the Listening Sessions with Stakeholders on the Proposed Advanced Research Projects Agency for Health



WHITE HOUSE OFFICE OF SCIENCE AND TECHNOLOGY POLICY & NATIONAL INSTITUTES OF HEALTH LISTENING SESSIONS FOR ARPA-H: SUMMARY REPORT

September 2021

ARPA-H Authorities

- Hiring outside civil service
- Program Managers for 3-6 yr terms
- Broad, flexible funding
- Exemptions from traditional review



FY22 Appropriations Language

For carrying out section 301 and title IV of the PHS Act with respect to advanced research projects for health, \$1,000,000,000, to remain available through September 30, 2024: Provided, That the President shall appoint in the Department of Health and Human Services a director of advanced research projects for health (Director): Provided further, That funds may be used to make or rescind appointments of scientific, medical, and professional personnel without regard to any provision in title 5 governing appointments under the civil service laws: Provided further, That funds may be used to fix the compensation of such personnel at a rate to be determined by the Director, up to the amount of annual compensation (excluding expenses) specified in section 102 of title 3, United States Code: Provided further, That the Director may use funds made available under this heading to make awards in the form of grants, contracts, cooperative agreements, and cash prizes, and enter into other transactions (as defined 11 in section 319L(a)(3) of the PHS Act): Provided further, That activities supported with funds provided under this heading shall not be subject to the requirements of sections 406(a)(3)(A)(ii) or 492 of the PHS Act: Provided further, That the Secretary may transfer the Advanced Research Projects Agency for Health, including the functions, personnel, missions, activities, authorities, and funds, within 30 days of enactment of this Act to any agency or office of the Department of Health and Human Services, including the National Institutes of Health: Provided further, That the Committees on Appropriations of the House of Representatives and the Senate shall be notified at least 15 days in advance of any transfer pursuant to the preceding proviso.

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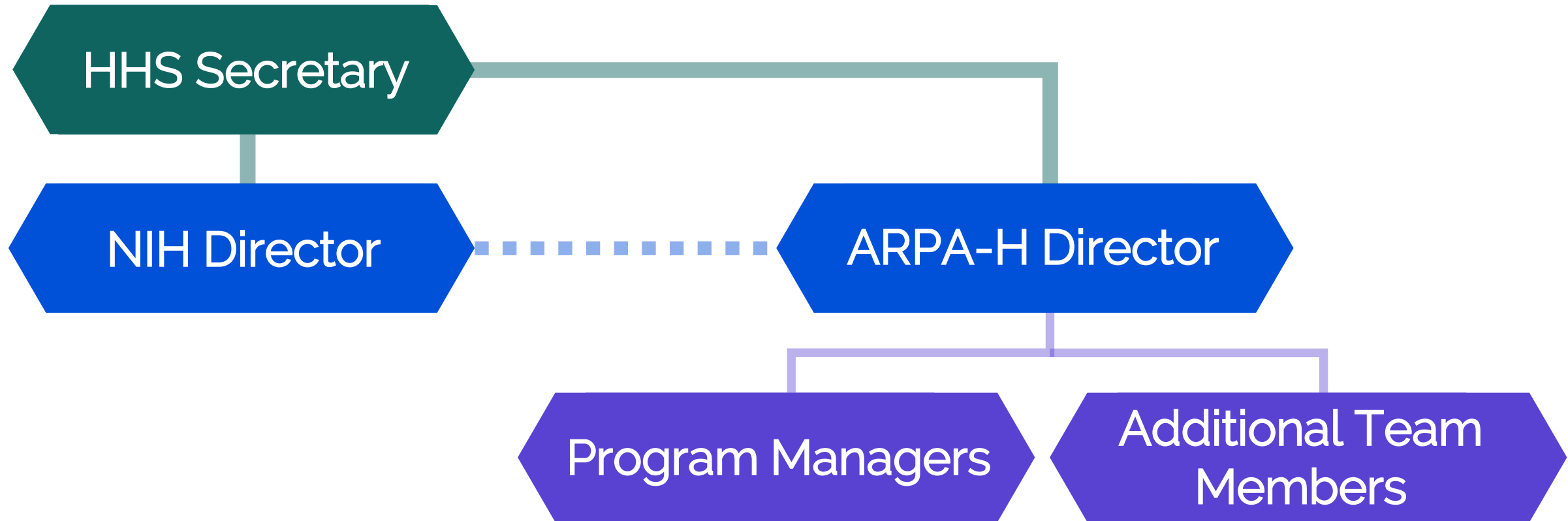
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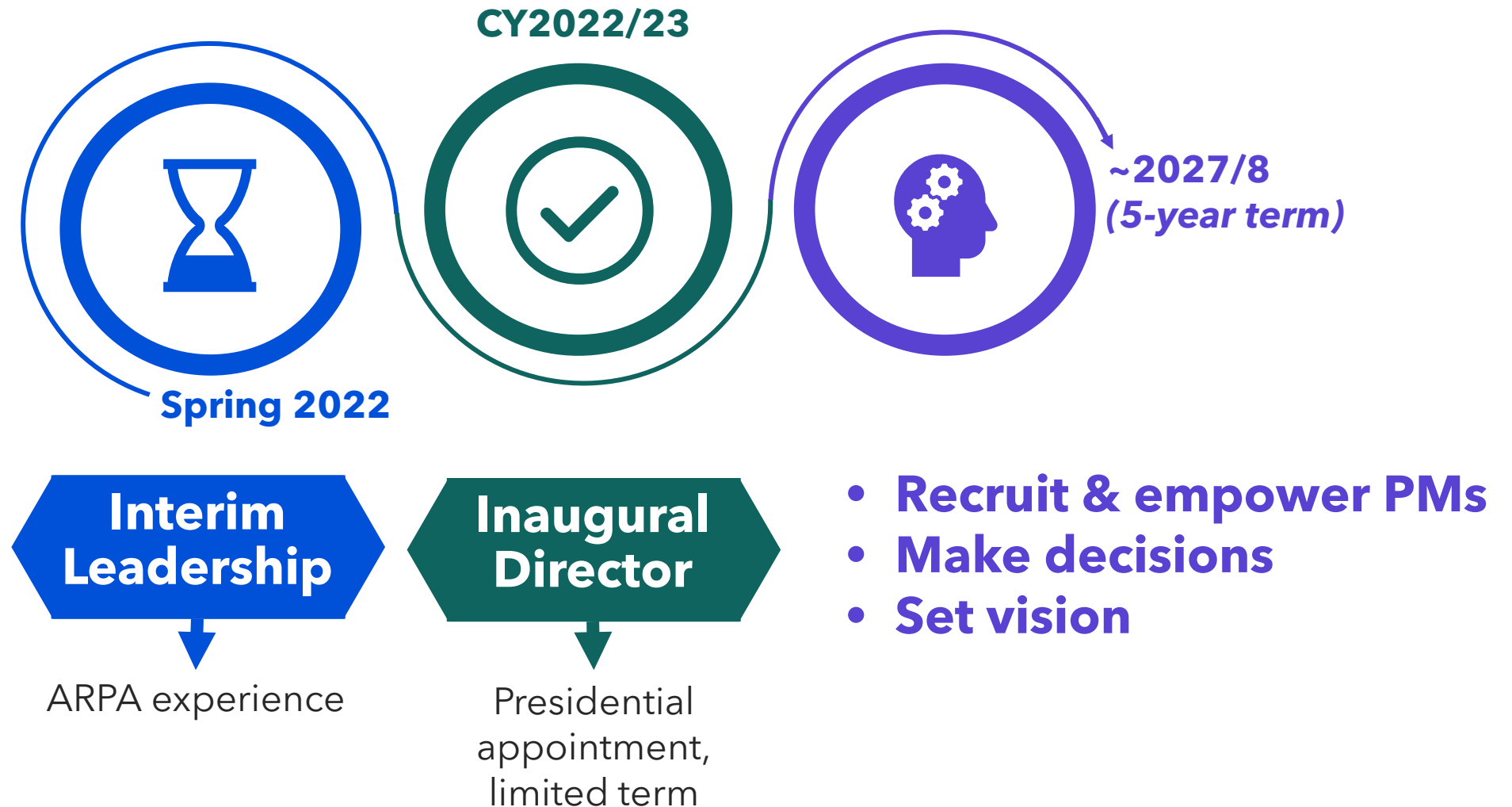
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ARPA-H Organization within HHS/NIH



ARPA-H Leadership

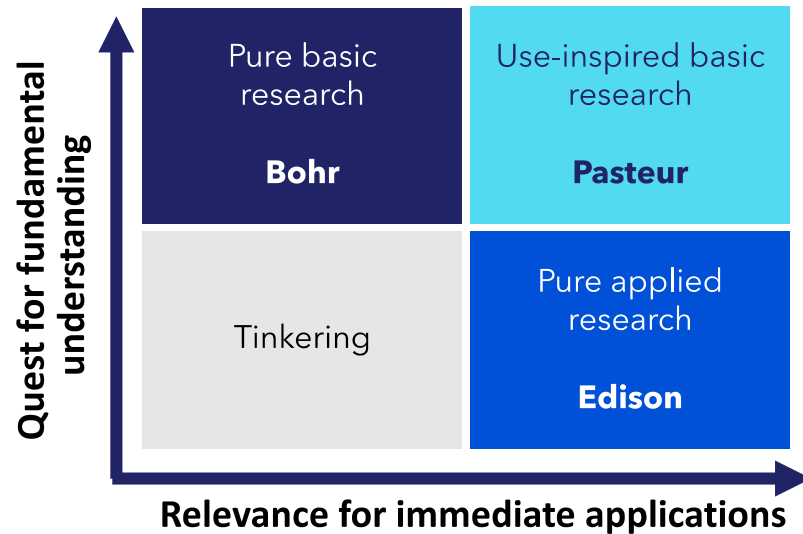


ARPA-H's “How”

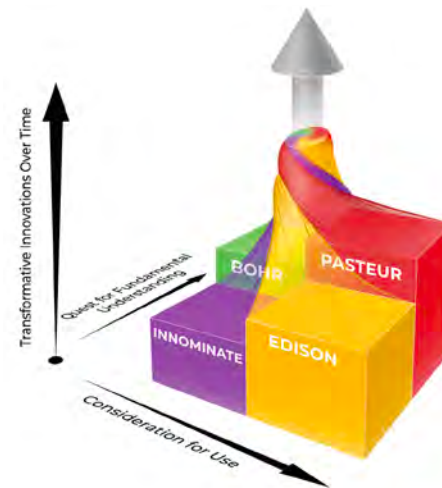
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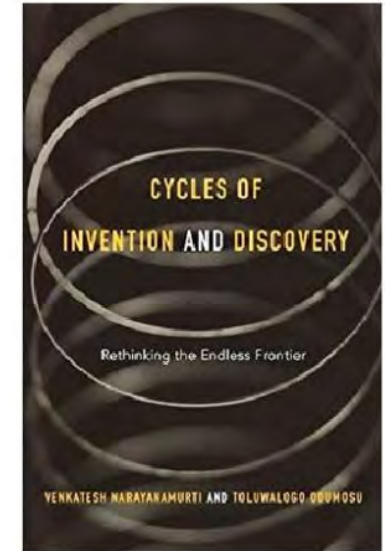
Pasteur's Quadrant?



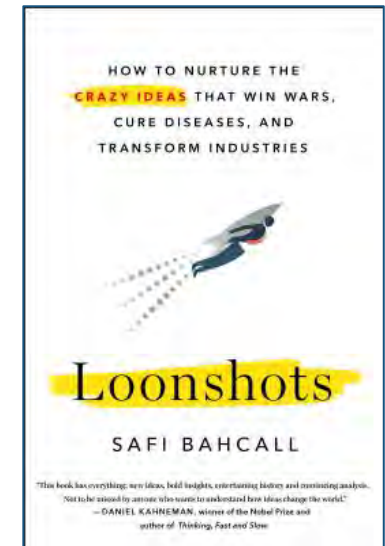
<https://tex.stackexchange.com/questions/85411/chutes-and-ladders>



<https://academic.oup.com/pnasnexus/article/1/3/pgac092/6615485>



<https://jscires.org/article/181>



<https://www.porchlightbooks.com/product/loonshots>

ARPA-H's "How"

What makes ARPA-H tick

1

Program Manager Centric

Responsible for programs from proposal to transition

Mission-Driven

Not requirement- or task-driven

2

Lean, Nimble Organization

Relatively small-sized; limited hierarchy

Independent and Autonomous

Top-level support and cover

3

High Uncertainty-High Return

"ARPA hard"; demonstrates possibility; failure is accepted

Active Program Management

Quantitative metrics

4

Time-Bound and Urgent

Programs *and* PMs have start and end dates

Accountability

Technical gates; stage-gating

ARPA-H/Qs: The Heilmeier Questions

- 1 What problem are we trying to solve?
- 2 How does this get done at present? Who does it? What are the limitations of present approaches?
- 3 What is new about our approach? Why do we think we can be successful at this time?
- 4 Who cares? If we succeed, what difference will it make? *How can we help ensure outcomes are equitable?**
- 5 What are the risks?
- 6 How long will it take?
- 7 How much will it cost?
- 8 What are our mid-term and final exams to check for success?

**Newly proposed for ARPA-H
Pending inaugural director's approval*

Fomenting Reproducible Revolutions

Intelligible Failure

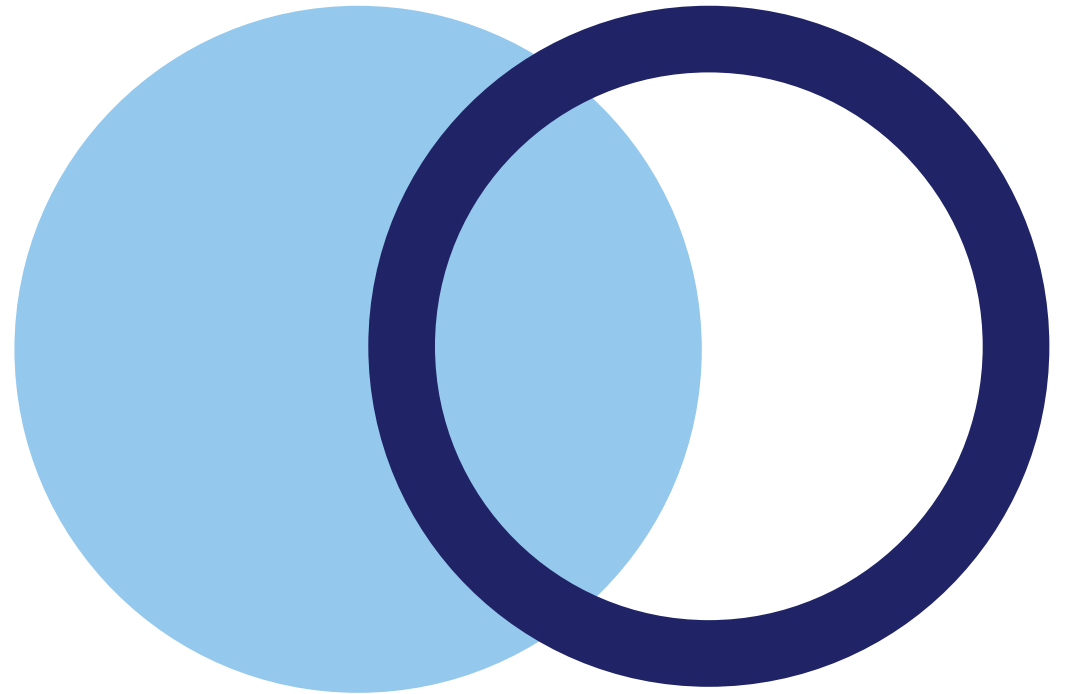
- **Good Problems:** Clearly important, clearly hard, and clearly measurable. "The only real failure is the one we learn nothing from."

Metascience

- **Permanent Beta:** "Science is a way of trying not to fool yourself. The principle is that you must not fool yourself, and you are the easiest person to fool."

Test and Evaluation

- **Trust but Verify:** "It's not what you don't know that will hurt you. It's what you know for certain that just ain't so."



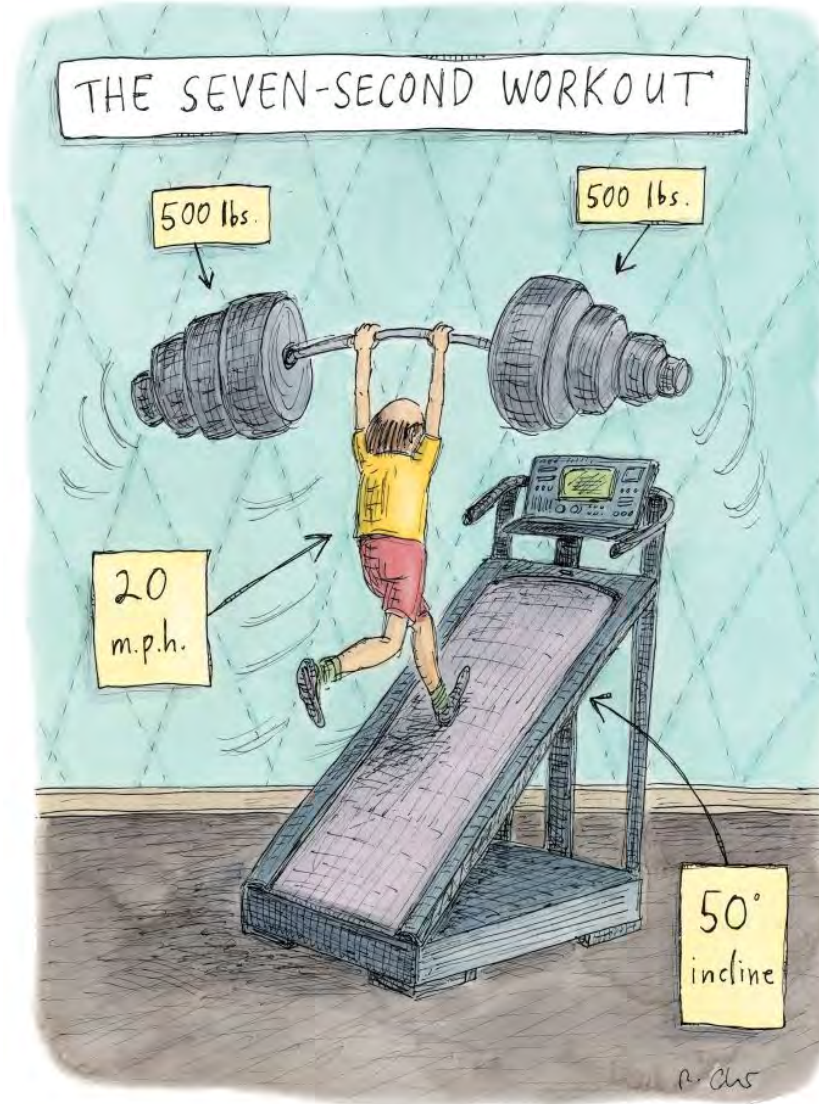
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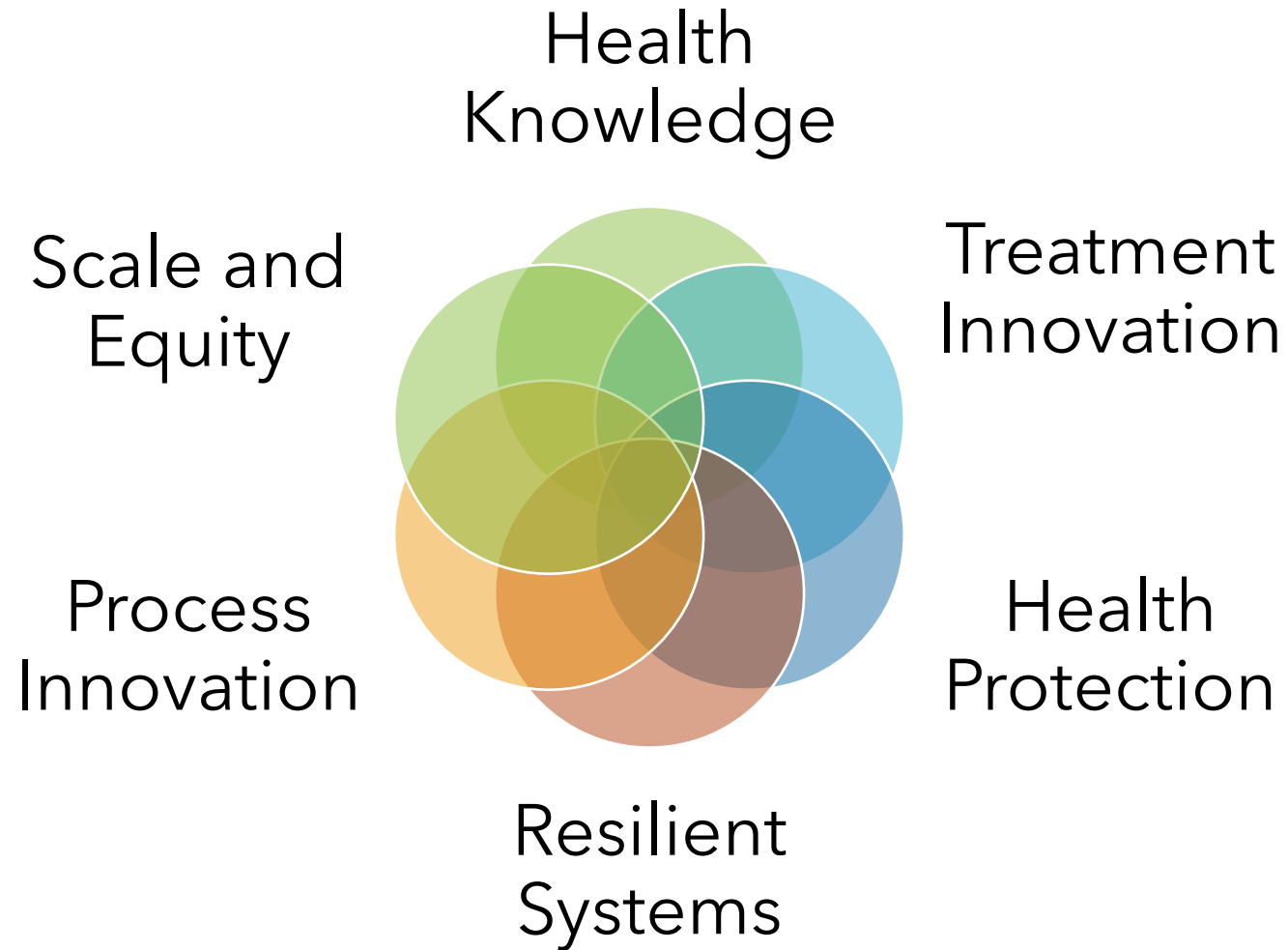


Fighting the “Quick Win” Mentality

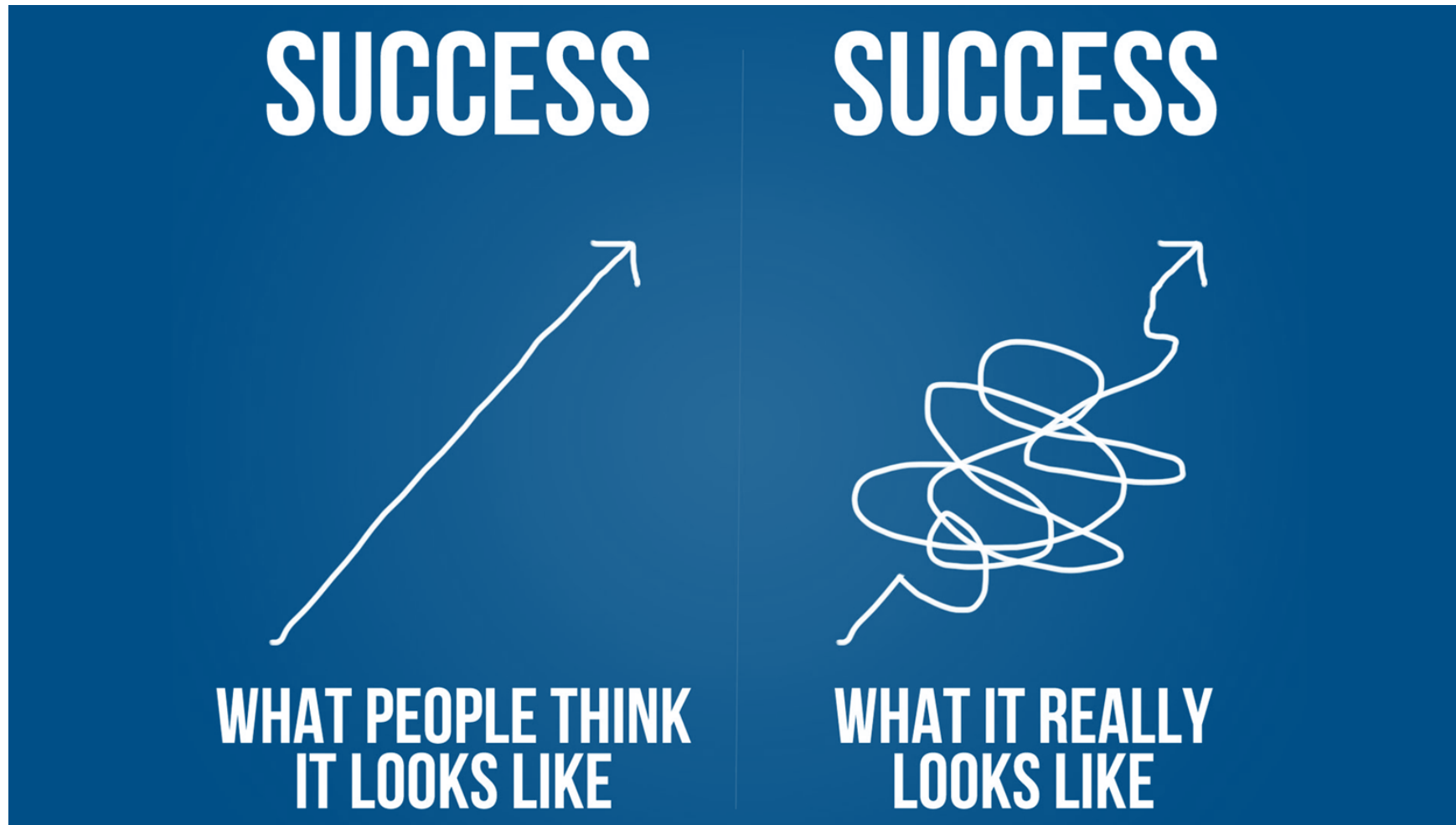
The Risks of Shortcuts



What are some potential “Big Levers” for ARPA-H?



"LO": A Reminder



ARPA•H

We're building our foundation now and the first channels we'll launch in the coming months will be our website arpa-h.gov and LinkedIn

In the meantime, for more information, questions, or comments, please reach out to arpahcomments@arpa-h.gov

Thank you
