ARPA-H: The Mission

The Advanced Research Projects Agency for Health

Dr. Renee Wegrzyn, PhD
Director, ARPA-H

Our Mission

Accelerate better health outcomes for everyone.

ARPA H

President Biden's Vision

"ARPA-H will pursue ideas that break the mold on how we normally support fundamental research and commercial products in this country."

"Ideas so audacious that people say they just might work only if, only if, we could try. Well, we're about to try in a big way."

- President Biden Remarks, March 18, 2022

ARPA H

Our Vision

Solutions to preserve and expand health

Our Slow Sputnik Moment

We live in an era of complex technologies with massive economic and social disruptions. Powerful biological factors include pandemics that make us sick and emerging biotechnologies to make us well.

Our Promise

ARPA-H Program Managers (PMs) design, build, and launch **solutions** to create the best version of our health future.

ARPA**H**

Imagine if...

- **Cell therapies could be built and assembled on demand, readily re-programmed for each new disease target**

- **MRIs could be delivered in the comfort of your home**

- **A personalized cancer vaccine cost the same as a cup of coffee**

- **We could all realize a better health future**

ARPA**H**

Omnibus - Key Takeaways

1 **Appropriation Funding and Authorization**

Y23 Omnibus Appropriated ARPA-H $1.5 billion for FY23 that remains available through September 30, 2025

2 **Establishment, Organization, Goals and Functions**

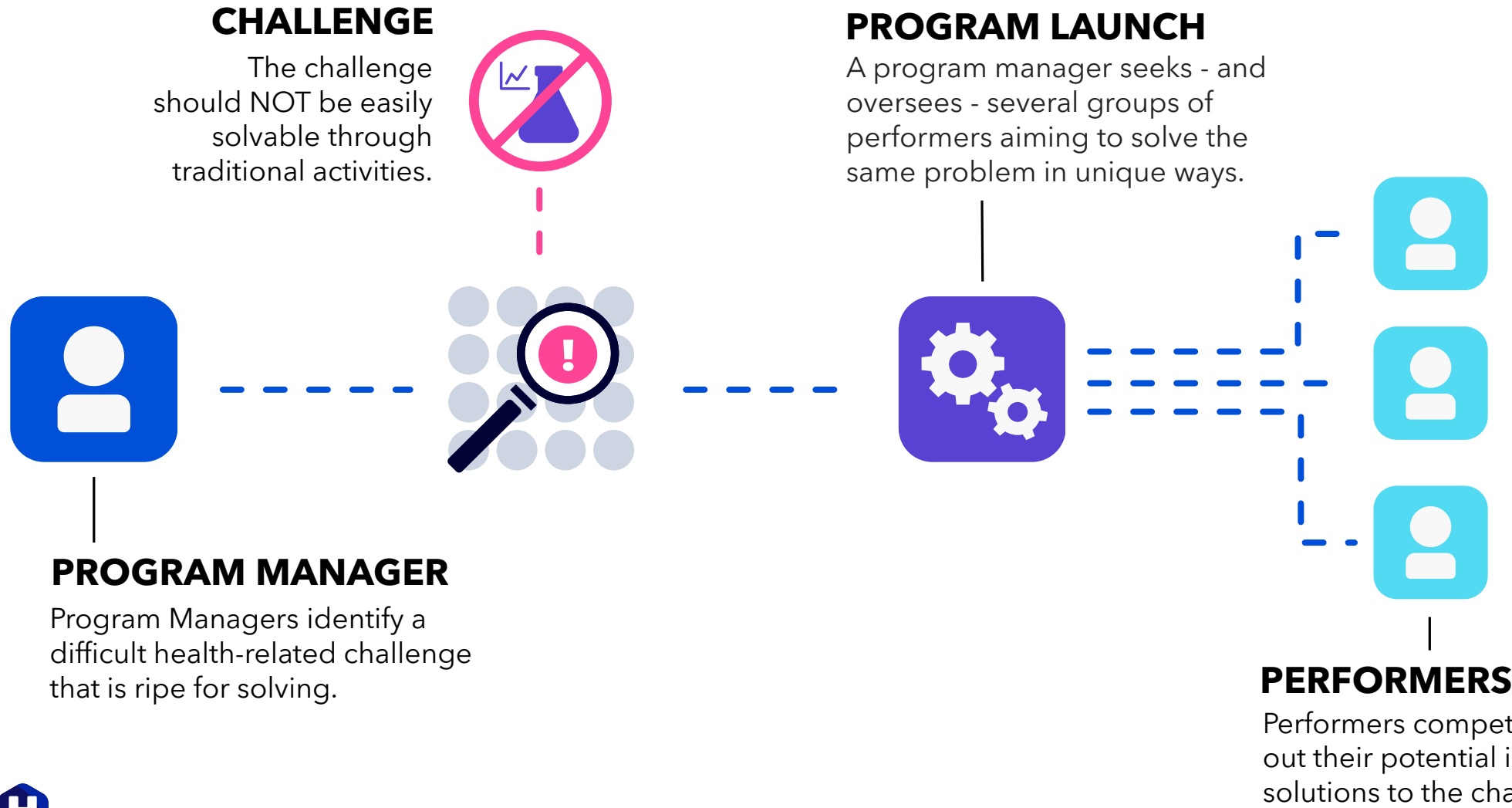Establishes ARPA-H within NIH; Allows HHS Secretary to exempt ARPA-H from NIH policies and requirements

3 **Facilities Authorities**

Requires ARPA-H Headquarters to not be located on any part of existing NIH campuses
Requires ARPA-H to have offices in at least 3 geographic areas

4 **Additional Authorities and Requirements**

Director reports directly to the HHS Secretary
Director appointed for 4-year term, may be reappointed for 1 consecutive term
Caps personnel at 210 (does not include contractors), director may appeal to Congress if more required
Program managers appointed for 3-year terms, may be reappointed for 1 additional term
Restriction on employment for individuals employed at NIH in the last 3 years, director may grant exemptions
and current ARPA-H employees are exempt from policy

ARPA**H**

ARPA Model: Program Formation

CHALLENGE

The challenge should NOT be easily solvable through traditional activities.

PROGRAM LAUNCH

A program manager seeks - and oversees - several groups of performers aiming to solve the same problem in unique ways.

PROGRAM MANAGER

Program Managers identify a difficult health-related challenge that is ripe for solving.

PERFORMERS

Performers compete to carry out their potential innovative solutions to the challenge.

ARPA**H**

ARPA Model: Support and Evaluation

SUPPORT

Support for ARPA-H programs comes from funding, Program Managers, partners, and ARPA-H offices to ensure the best chance of success throughout the process.
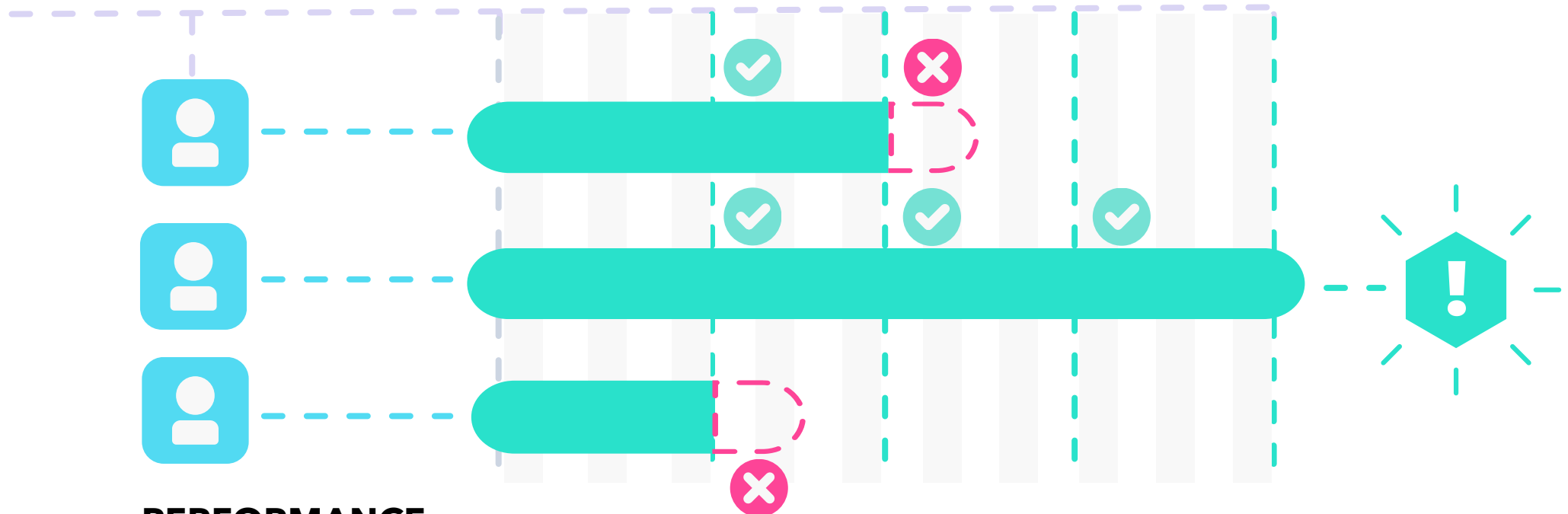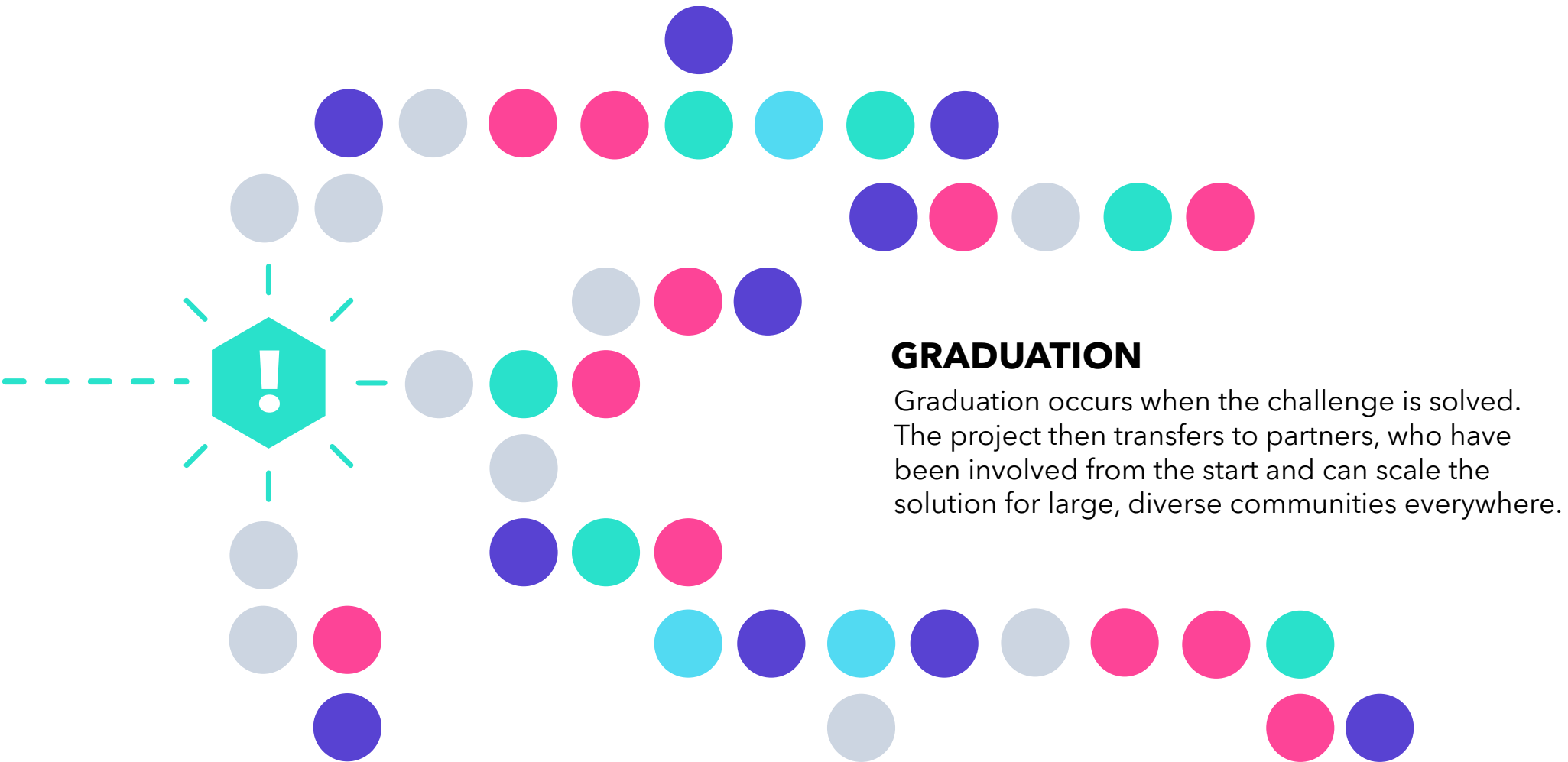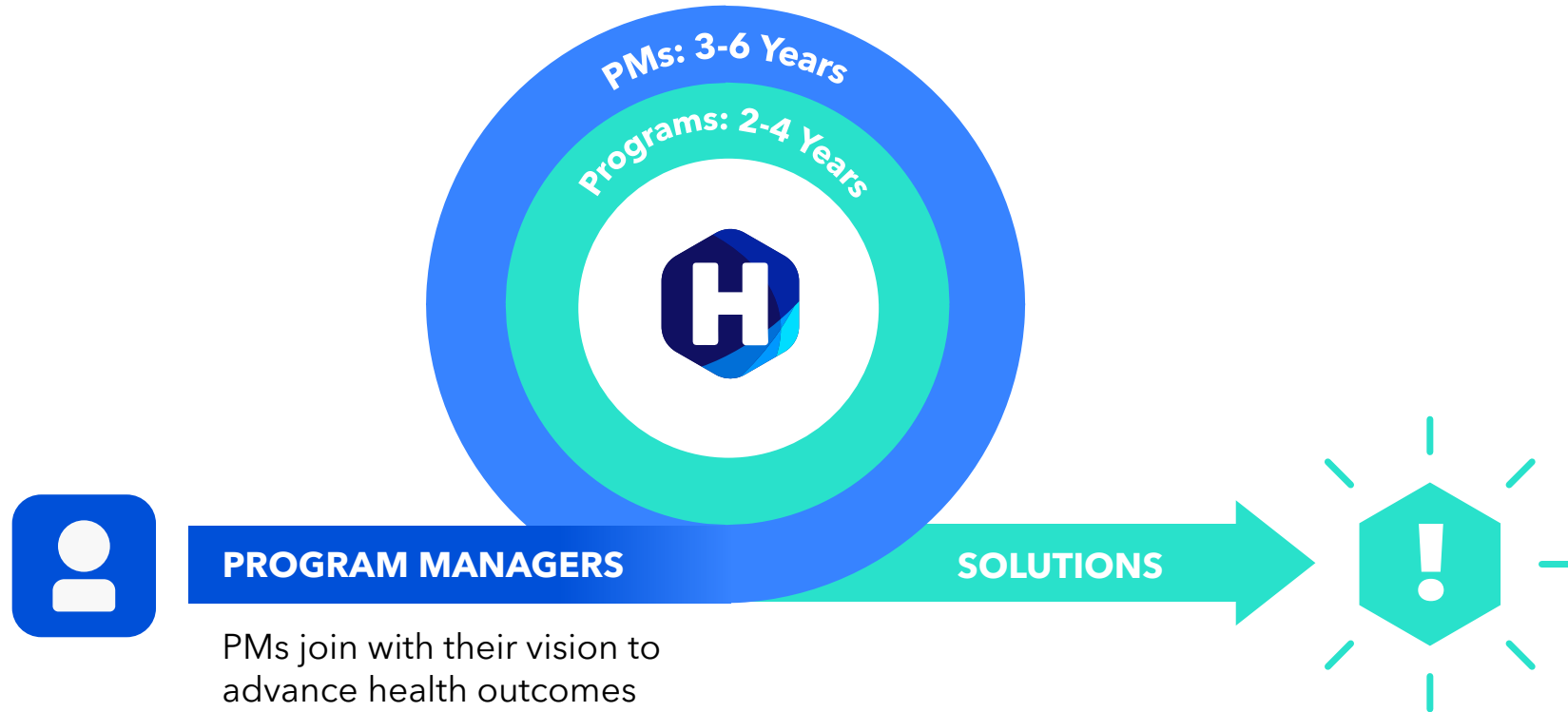
PERFORMANCE

Performance is assessed regularly. If results fail to measure up, a performer's work may be stopped, while more successful performers continue. Valuable lessons are learned and shared from each project.

ARPA H

ARPA Model: Transition

GRADUATION

Graduation occurs when the challenge is solved. The project then transfers to partners, who have been involved from the start and can scale the solution for large, diverse communities everywhere.

ARPA H

The Program and Program Manager Flywheel

PMs: 3-6 Years

Programs: 2-4 Years

PROGRAM MANAGERS

PMs join with their vision to advance health outcomes

SOLUTIONS

ARPA H

ARPA-H Health Ecosystem

STAKEHOLDERS

CUSTOMERS

The Public

Healthcare Providers

Patient Groups

Academia

PERFORMERS

Industry, including Small Business Innovation Research (SBIR)/Small Business Technology Transfer (SBTT)

Small Businesses

NIH ICs

FDA

CMS

HRSA

NGOs

(and many others...)
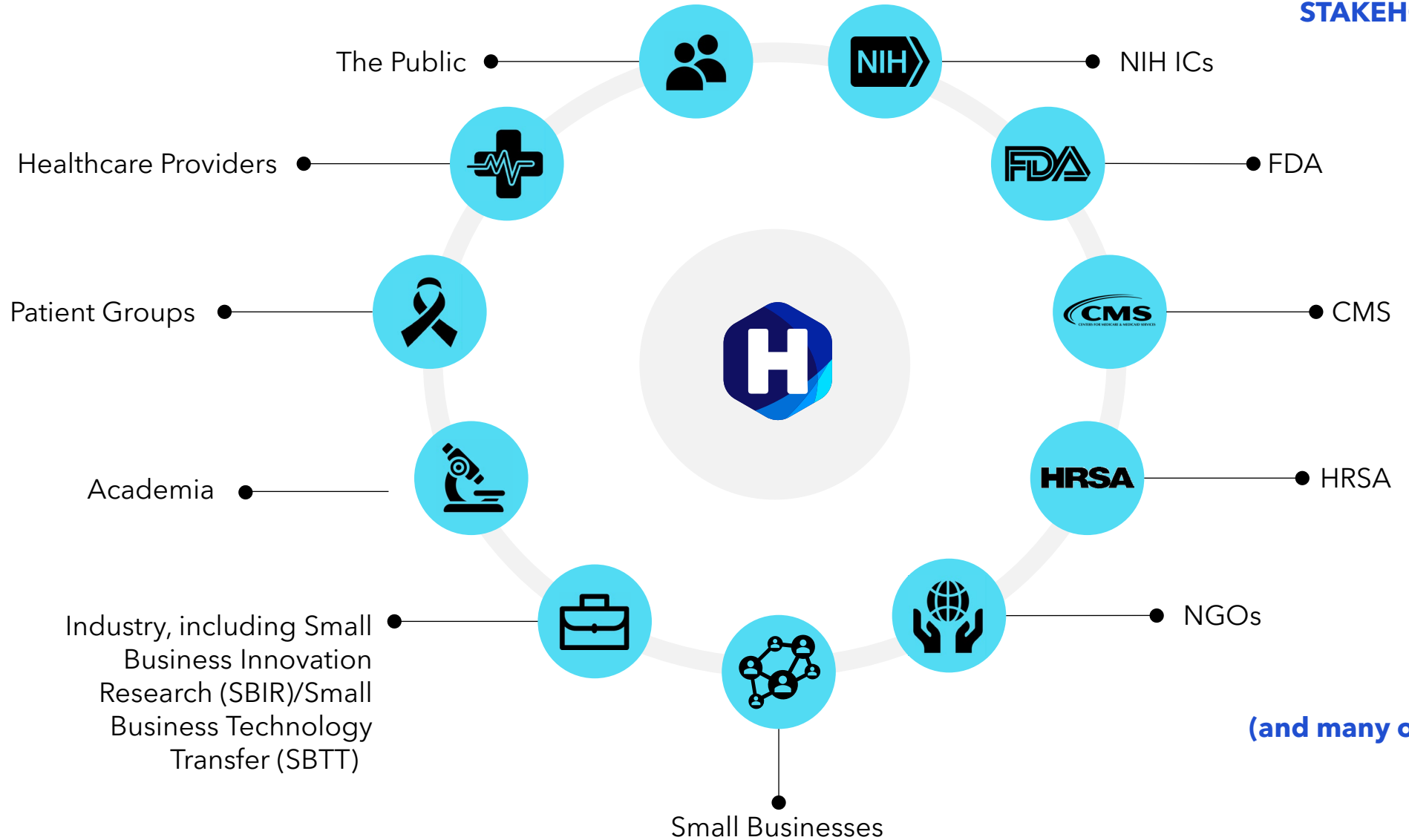
ARPA H

Program Lifecycle
From ideas to solutions in the real world

DESIGN PROGRAMS

- ARPA-Hard and well-defined problems in health
- Heilmeier Framework
- High risk/High consequence
- Stakeholder Insights

BUILD A PERFORMER TEAM

- Solicit solutions from the community
- Find the best non-traditionals, industry, and academics to solve
- Build new coalitions
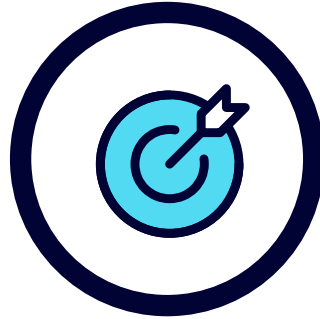
EXECUTE & MEASURE

- Active program management against metrics; PM = CEO
- Stakeholder engagement throughout to ensure transition
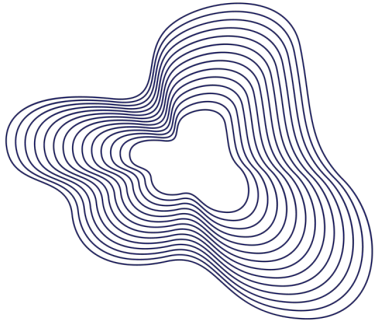- Reappropriate resources when needed

LEARN & GROW

- Capture and share insights
- Technical honesty
- Advance the state of the art; 10x+ improvement, no incremental change

COMMERCIALIZE & TRANSITION

- Assist company formation or licencing
- Provide mentorship, connections to customers, investors
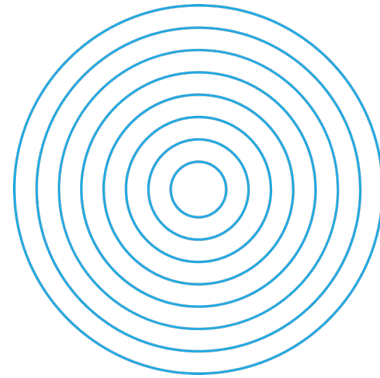- De-risk investments
- Engage SBIR/SBTT

ARPA H

Initial Mission Focus Areas

Health Science Futures

### Expanding what's technically possible

Accelerate advances across research areas and remove limitations that stymie progress towards solutions. These tools and platforms apply to a broad range of diseases.

Scalable Solutions

Reaching everyone quickly

Address health challenges that include geography, distribution, manufacturing, data and information, and economies of scale to create programs that result in impactful, timely, and equitable solutions.
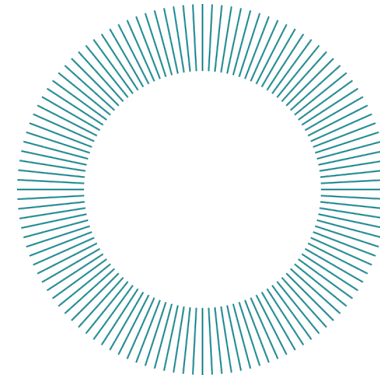
Proactive Health

Keeping people from being patients

Preventative programs will create new capabilities to detect and characterize disease risk and promote treatments and behaviors to anticipate threats to Americans' health, whether those are viral, bacterial, chemical, physical, or psychological.
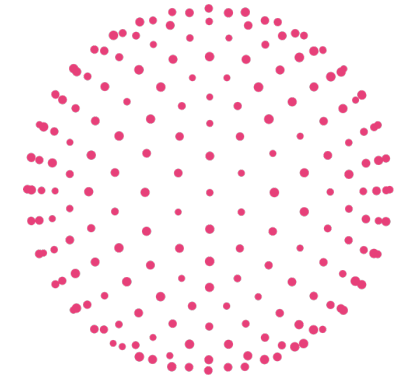
Resilient Systems

Building integrated healthcare systems

Create capabilities, business models, and integrations to weather crises such as pandemics, social disruption, climate change, and economic instability. Systems are sustained between crises – from the molecular to the societal – to achieve better health outcomes.

ARPA H

Initial Mission Focus Areas: Notional Examples
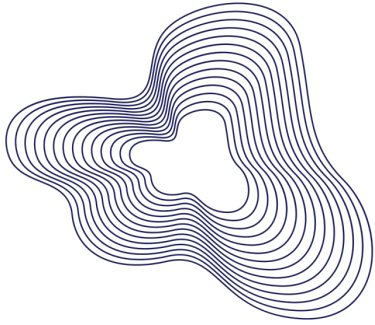
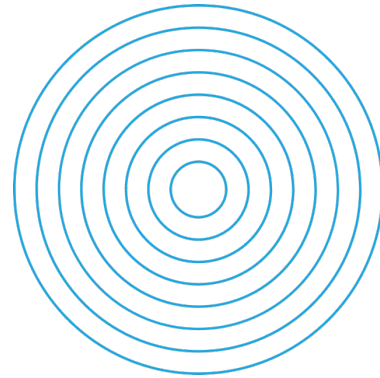## Health Science Futures

Expanding what's technically possible

Imagine if we had mammalian foundries capable of creating programmable cell therapies on demand for a broad range of diseases …

Imagine if a common gene modulation tool could be used to treat multiple rare diseases…

Scalable Solutions

Reaching everyone quickly

Imagine if vaccines used to prevent communicable diseases no longer required cold storage or needles…

Imagine if computers could readily interpret 3D histopathology of specimen and the data could be shared instantly with doctors to improve patient care?
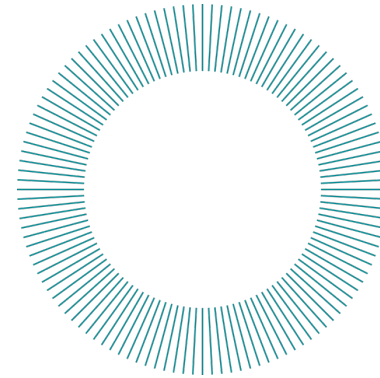
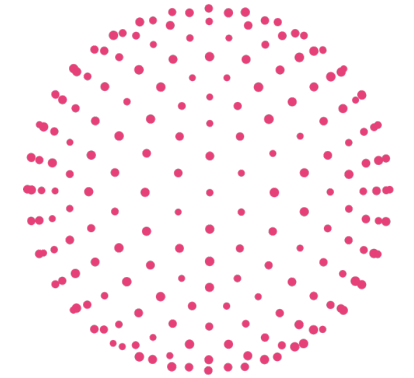## Proactive Health

Keeping people from being patients

Imagine if vaccines were not only safe and effective, but also blocked transmission?

Imagine if wearable consumer devices provided a data readout of environmental risk over time and recommended mitigation strategies…

Resilient Systems

Building integrated healthcare systems

Imagine if new AI/ML tools could predict the best of both biological and chemical synthesis to move the bulk of API development and production domestically…

ARPA H

Program Manager
A "career-defining opportunity"

THE POSITION

- Timebound (3 – 6 years)

- Competitive salary

- PMs diverse in geography, demographics, experience, and topic

- **Full business and technical team support** for day-to-day program management, market assessments, transition, budget, human-centered design, etc.

- **Resources and opportunity to change the future of health**

- **Responsibility to identify well-defined problems in health**, and assemble teams from industry, academics, and government to solve.

THE OPPORTUNITY

"My time as a DARPA PM was probably **one of the most inspiring periods of my professional career.** I cannot think of a more noble endeavor than to work as a PM for the newly created ARPA-H to solve the grand health challenges that society faces."

Darryll J. Pines, Ph.D., NAE

ARPA H

Program Managers

What are the phenotypes of these rational risk takers?

Uncommon people with common traits

RECOGNIZED EXPERTISE

SERIOUS DRIVE

INSTATIABLE CURIOSITY

NO FEAR OF FAILURE

INTERDISCIPLINARY TRACK RECORD

TECHNICAL HONESTY

Different Approaches and Career Stage

THE PROBLEM SOLVER

Motivated by personal experience; can't let it go.

THE ROOKIE

Early Career. Unbiased, looks at the world with fresh eyes.

THE DREAMER

Intensely curious about how the world works, motivated by search for objective facts/truth.

THE STATUS QUO CHALLENGER

Mid-career. Frustrated by the limits of the existing system.

THE TINKERER

Intrinsic desire to build and experiment. Cares about application, not theory.

THE SAGE

Late Career. Experience yields deep understanding.

ARPA-(H)eilmeier Questions
Towards a Well-Defined Problem

1 What are you trying to do? What health problem are you 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?

5 What are the risks? That may prevent you from reaching your objectives? Any risks the program itself may present?

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?

9 To ensure equitable access for all people, how will cost, accessibility, and user experience be addressed?

10 How might this program be misperceived or misused (and how can we prevent that from happening)?

To Define Success

Solutions are **NOT** research grants

At ARPA-H, our Program Managers identify a well-defined problem to pursue through the program life cycle to bring solutions forward that:

Survive in the wild

Real people **want** them and enthusiastically **adopt** them.

Separate the improbable from the impossible

Remove the barriers of today's technologies and systems.

Deliver better health to everyone

The healthy, the sick, providers, hospitals, all 50 states, the world…

Program Managers will use flexible contracting vehicles, including Cooperative Agreements, Contracts, and Other Transactional Authorities to create these solutions.

Project Accelerator Transition Innovation Office (PATIO)
Increasing the odds - at each step - that solutions can "survive in the wild"

PROGRAM LIFECYCLE

PROGRAM DESIGN
- Support PM to find opportunities and gaps
- Market Assessment
- Human-centric design

BAA DEVELOPMENT
- Who are possible performers? Innovation Hubs?
- VC style due-diligence
- Validate transition potential

EARLY PROGRAM PERFORMANCE
- De-risk for investors
- Design MVPs to drive adoption
- Demystify regulatory process

MATURE PROJECTS
- Protect IP
- Help company formation
- Business strategy, legal and marketing services

TRANSITION/OUTPUTS SURVIVE IN THE WILD
- SBIR/STTR
- Transition partner/Third-party investment
- Ongoing mentorship
- Access to key customers and investors

ARPA H

Status Update
Recent ARPA-H Milestones

✓ **Launch at Howard University**

✓ **Website & Social Media Channels**

✓ **Identified 4 Mission Thrusts**

✓ **Engagements with:**

- **More than 30** members of Congress, staff, and intragovernmental partners

- **20 universities'** administrators, vice chancellor/vice presidents of research and associated faculty

- **More than 10** patient advocacy organizations and professional associations
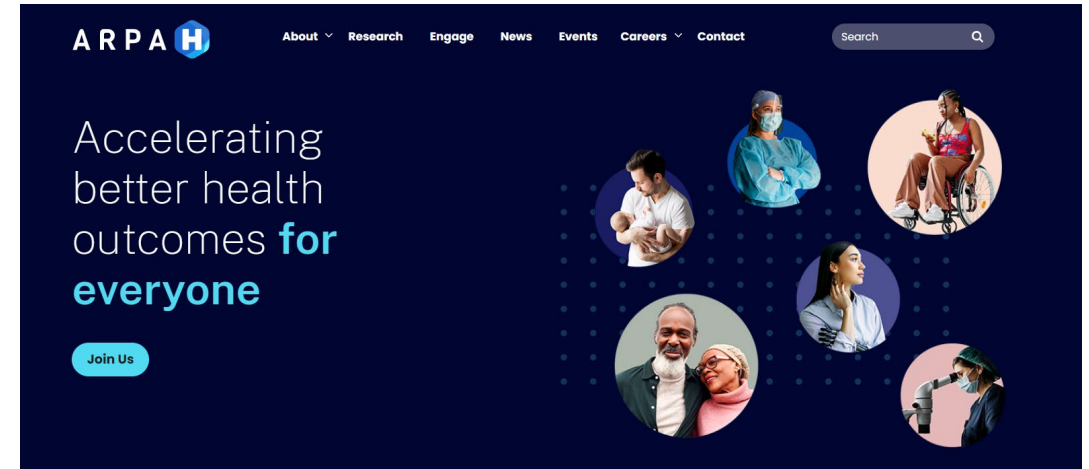
arpa-h.gov landing page

Howard University event, October 25th

ARPA H

ARPA-H Call to Action

Apply - Our top priority is to **hire the Program Managers** that will bring well-defined problems to ARPA-H and build the teams to solve them

https://arpa-h.gov | careers@arpa-h.gov

Engage - We are actively engaging research, patient, and stakeholder, communities; we want to hear from you!

inquiries@arpa-h.gov

@ARPA_H   ARPA-H   @ARPA-H

ARPA H

Reproducing Content, Logos, and Graphics

Information in this presentation can be freely shared, downloaded, and reproduced. Content reproduced without changes should acknowledge ARPA-H as the source.

There are a few exceptions.

- You may encounter documents that were sponsored along with private companies and other organizations. Accordingly, other parties may retain all rights to publish or reproduce these documents or to allow others to do so.
- ARPA-H logos should not be used without explicit review and approval by ARPA-H.
- Some graphics have been licensed by a third party and are restricted in their use.
- Generally, copyrighted materials will include a copyright statement. If you have questions, please contact web@arpa-h.gov.

As a government entity, ARPA-H does not hold rights to the content it produces, and does not sign indemnity or hold harmless statements, release from copyright infringement, or similar documents.

Editing Content

ARPA-H logos must be removed from edited content. ARPA-H content must not be used to imply endorsement of any companies, organizations, commercial products, processes, or services; or to recommend specific medical advice, treatments, or referrals.

Additional Questions

If you have additional questions on ARPA-H copyright, contact web@arpa-h.gov.

ARPA H