

# ARPA-H: The Mission

Advanced Research Projects Agency for Health (ARPA-H)

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# Mission

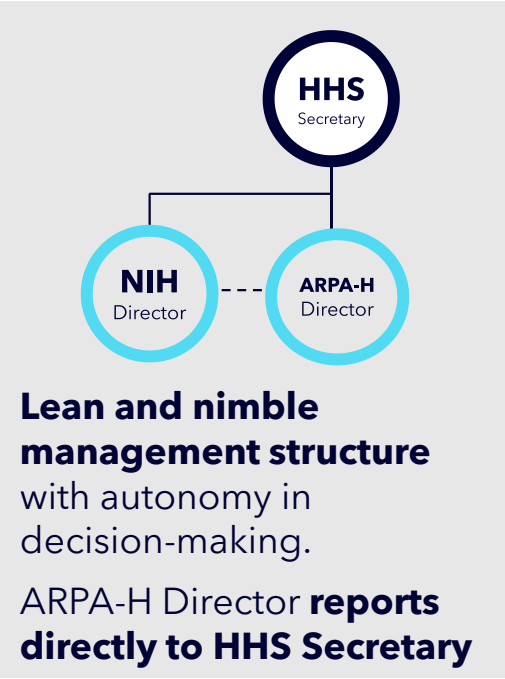
Accelerate better health outcomes for everyone.



# ARPA-H Key Features and Authorities

ARPA-H has unique structures and legal authorities that allow it to **function like a business** – **quickly, nimbly, and decisively.**

- ARPA-H is a **funding agency**
- **Independent** component of HHS within NIH; not an Institute
- No internal research labs; **disease agnostic**
- **\$2.5B appropriations;** budget independent from NIH
- Generally **fund outcome-based contracts**, not grants; accelerated award timelines
- **Bottoms-Up Problem Centric Approach** to address the toughest challenges in health



**Term limits** of 3-6 years bring urgency and idea flow.

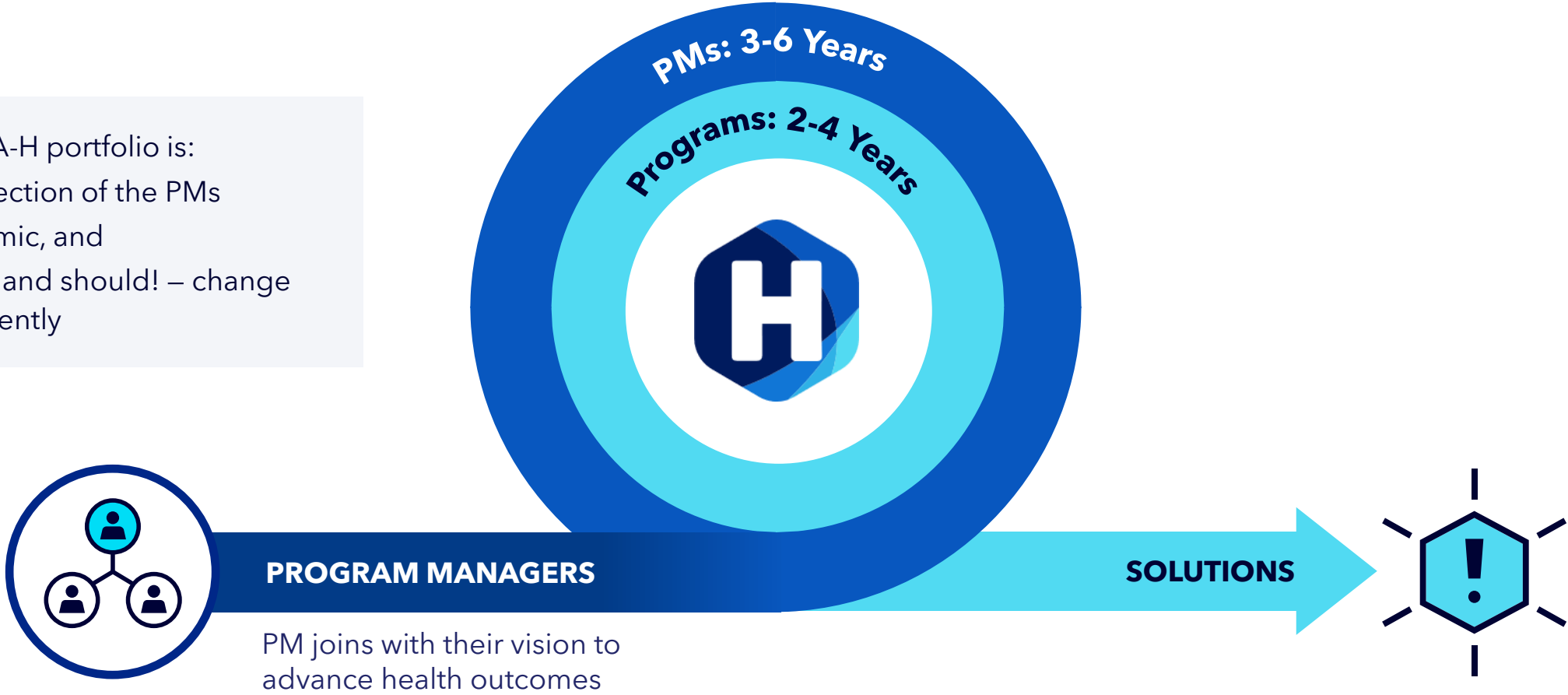
**Flexibility in hiring** allows ARPA-H to recruit at levels competitive with industry.

**Bottom-up decision-making.** PMs have autonomy to make decisions quickly.

**ARPA-H is a problems focused organization**

# The Program and Program Manager Flywheel

The ARPA-H portfolio is:  
(1) a reflection of the PMs  
(2) dynamic, and  
(3) will – and should! – change frequently



# 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? What Health Outcomes are we accelerating?

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

**6** How long will the program take?

**7** How much will the program 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 build trust and prevent that from happening)?

# 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
- Pivot resources when needed

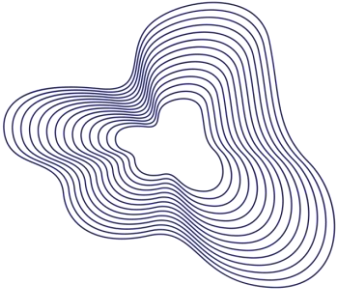
## LEARN & GROW

- 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

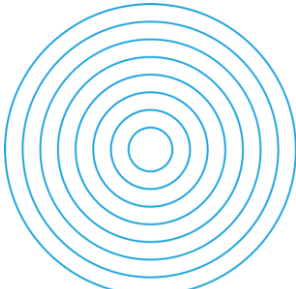
# Initial Mission Focus Areas



## Health Science Futures

### Expanding what's technically possible

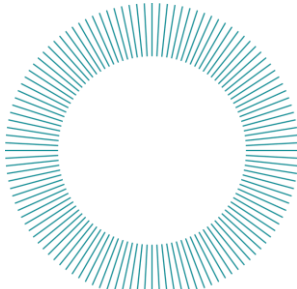
Accelerate advances across research areas and remove limitations that stymie progress towards solutions. These tools and platforms apply to a broad range of diseases.



## Scalable Solutions

### Reaching everyone quickly

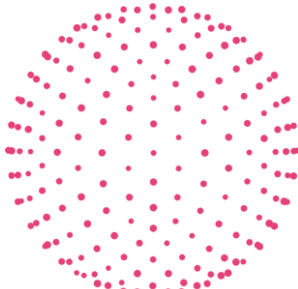
Address health challenges that include geography, distribution, manufacturing, data and information, and economies of scale to create programs that result in impactful, timely, and equitable solutions.



## 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

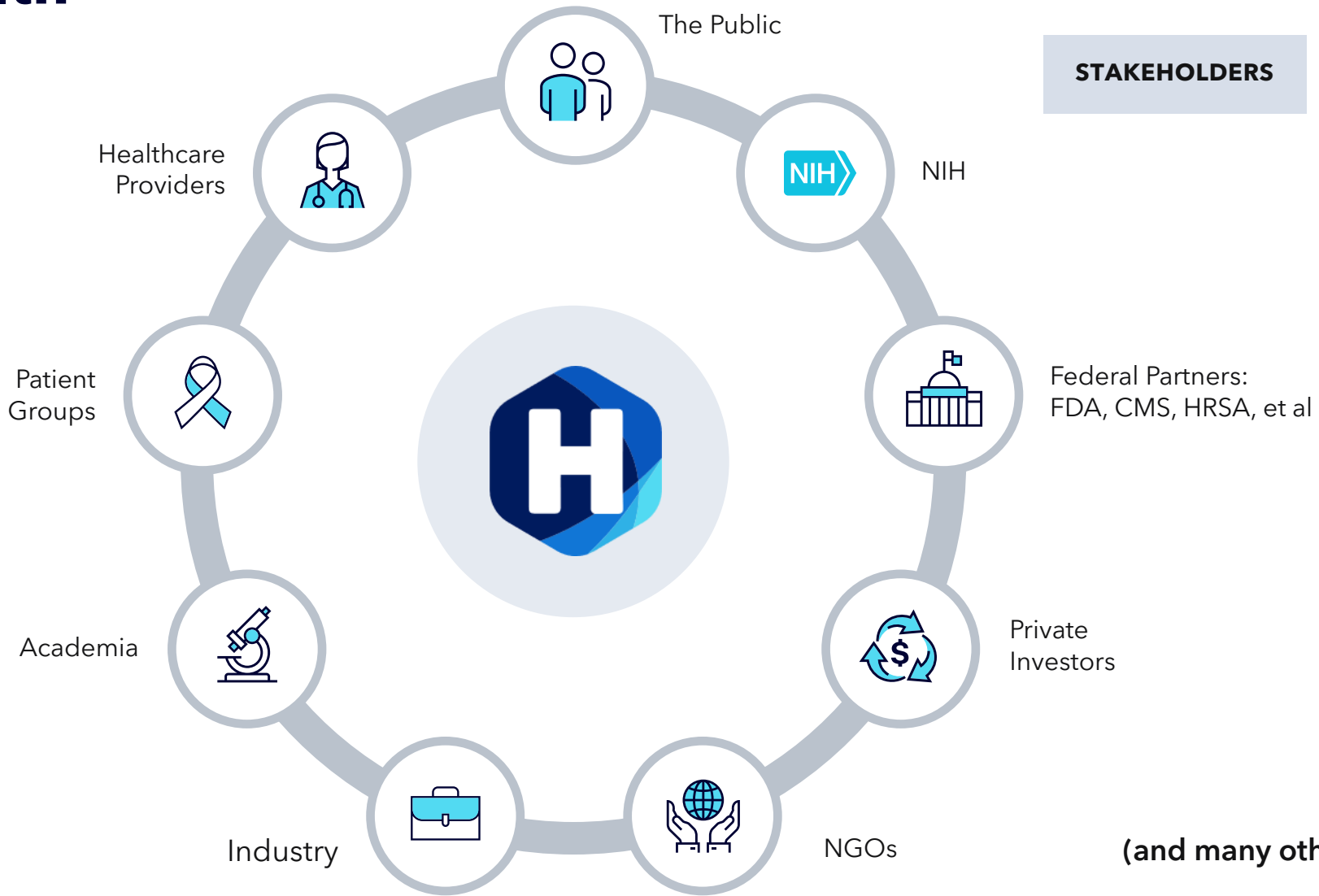
Develop capabilities, business models, and integrations to endure crises such as pandemics, social disruption, and economic instability. Resilient systems need to sustain themselves between crises—from the molecular to the societal—to better achieve outcomes that advance American health and wellbeing.

# ARPA-H Health Ecosystem

CUSTOMERS

PERFORMERS

STAKEHOLDERS



# Project Accelerator Transition Innovation Office (PATIO)

**Our Mission:** PATIO increases the probability that ARPA-H funded health technologies **will reach Americans** by identifying barriers and providing transition and commercialization services to program managers and performers.

Since ARPA-H will not fund performers in perpetuity, PATIO's services increase the odds that solutions attract private investment and customers—to translate the breakthroughs

# Where might the solution go after ARPA-H?

Large  
Established  
Company

Emerging  
Company with  
VC Backing

De Novo  
Startup

Health Care  
System

Other Fed  
Agency

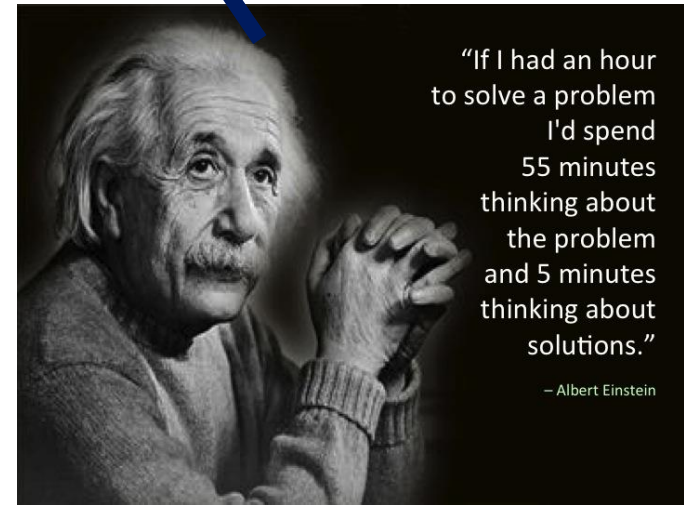
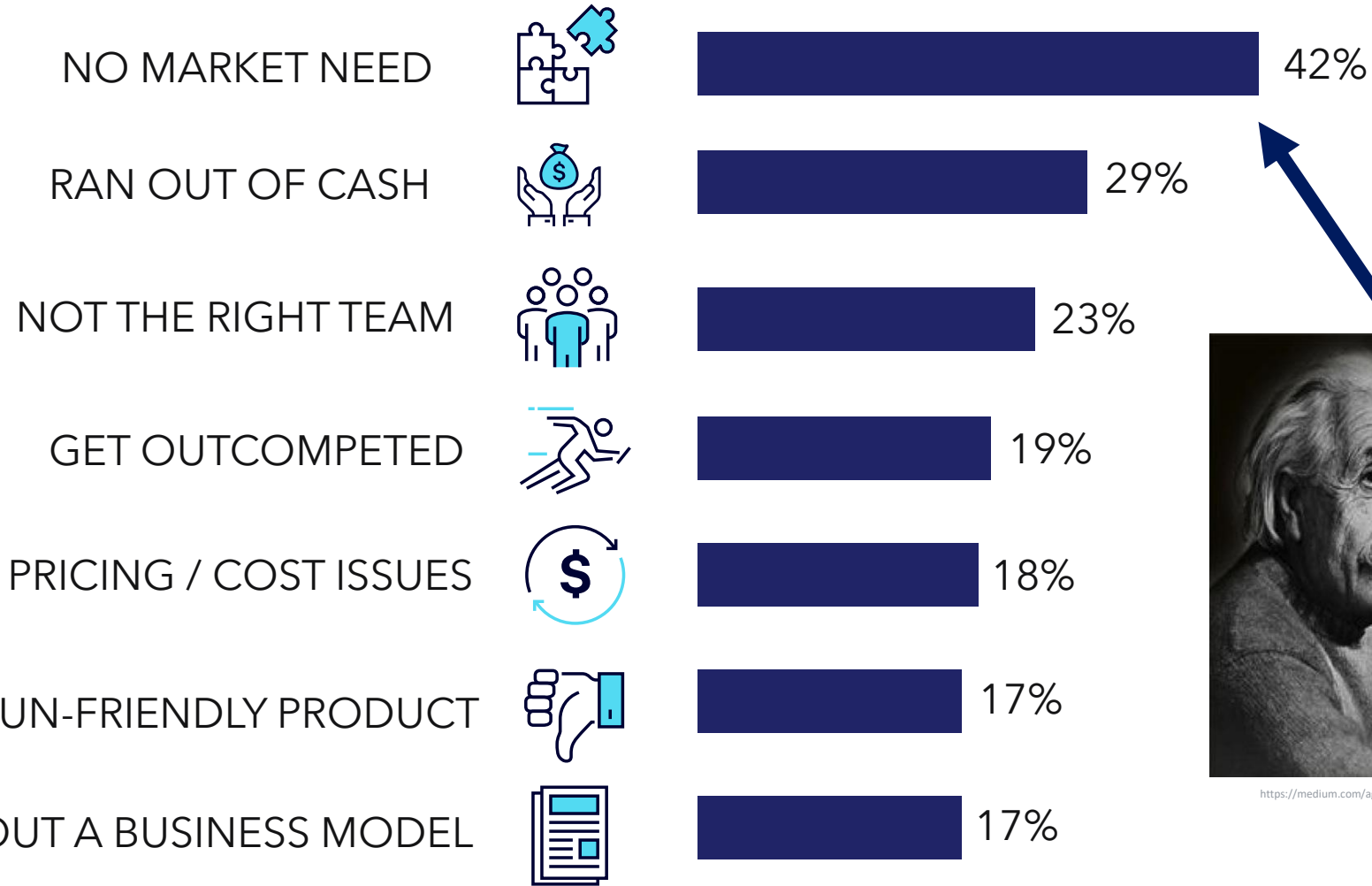
Scaled NGO  
or Non-Profit

Startup NGO  
or Non-Profit

# Most Common Startup Failures

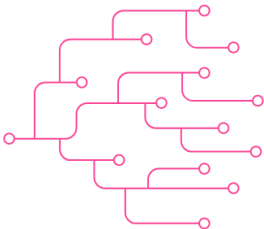
Based on the analysis of 101 startup postmortems

60% of startups fail between the pre-seed and Series A funding stages



<https://medium.com/age-of-awareness/why-school-shouldnt-be-designed-for-learning-db0192a41f20>

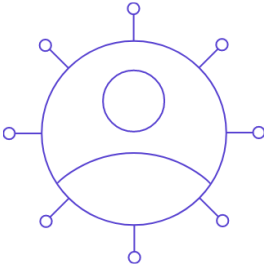
# Our Capabilities



## Technology Transfer and Transition Services (T3X)

Build transition-ready programs by de-risking solutions from program design through performance; runs agency SBIR/STTR program

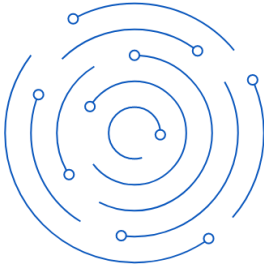
Led by *Janica Patterson*



## Health Ecosystem and Engagements Team (HEET)

Create meaningful bi-directional communication between ARPA-H and America.

Led by *Dan Bram*



## ARPANET-H (ANH)

Connect a fragmented health ecosystem and run transition experiments through projects, events, and democratized learning

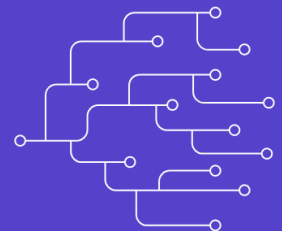
Led by *Amy Lin*



PATIO is led by Craig Gravitz (Director) and Melissa Antman (Deputy Director)



# Technology, Transfer and Transition Services (T3X)

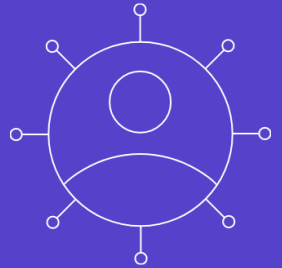


**Build transition-ready programs by de-risking solutions from program design through performance.**

## Capabilities

- **Experts in Residence (XIR) Program** External, recognized transition/commercialization experts identify and solve for blind spots of ARPA-H PMs and programs.
- **Regulatory & Reimbursement Support** Demystify and assist in navigation of these processes. Get involved early to avoid traps.
- **Due Diligence / Landscape Analyses** IP analyses, commercialization landscape to understand a particular technology, competitive landscape to understand key players in the arena, etc.
- **Small Business Program** provides funding for small businesses that possess the expertise to use innovative approaches to enable revolutionary advances in science, technology, or systems leading to developments that contribute toward the agency's mission.

# Health Ecosystem Engagement Team (HEET)



**Create meaningful bi-directional communication between ARPA-H and stakeholders**

## Capabilities

- **Ecosystem Activities & Speaking Opportunities** Broad, in-person engagements where ARPA-H leaders explain the ARPA-H model and mission and build connections.
- **Network on Demand** A self-service platform for ARPA-H PMs and others to access key external stakeholders + ensure de-duplication of efforts.
- **Design Services** Capture the needs and perspectives of expected agency beneficiaries using design research tools and practices.
- **In-Person Discovery Trips** Targeted, deep dive trips with small groups of ARPA-H technical staff to deepen perspectives.

# ARPANET-H (ANH)



**Connect a fragmented health ecosystem and run transition experiments through projects, events, and democratized learning**

## Capabilities

- **Network Activation** Pulsing the network for program feedback, including to source teaming partners; surface targeted input on a topic area, technology application or design; and aggregate feedback at scale with active outreach to external stakeholders
- **R&D projects** New projects, programs, prize challenges, etc., with an associated funding component that is competitively sourced among the spokes to accelerate transition
- **Program Augmentation** Support services for an existing ARPA-H program, such as advanced manufacturing, dataset sourcing and creation, user testing/minimum viable product (MVP) design, clinical trial support, and independent verification and validation (IV&V)
- **Network Events** Convening of spokes or use of hub/spoke spaces for an event to foster connection, collaboration, and network-wide learning



# ARPANET-H

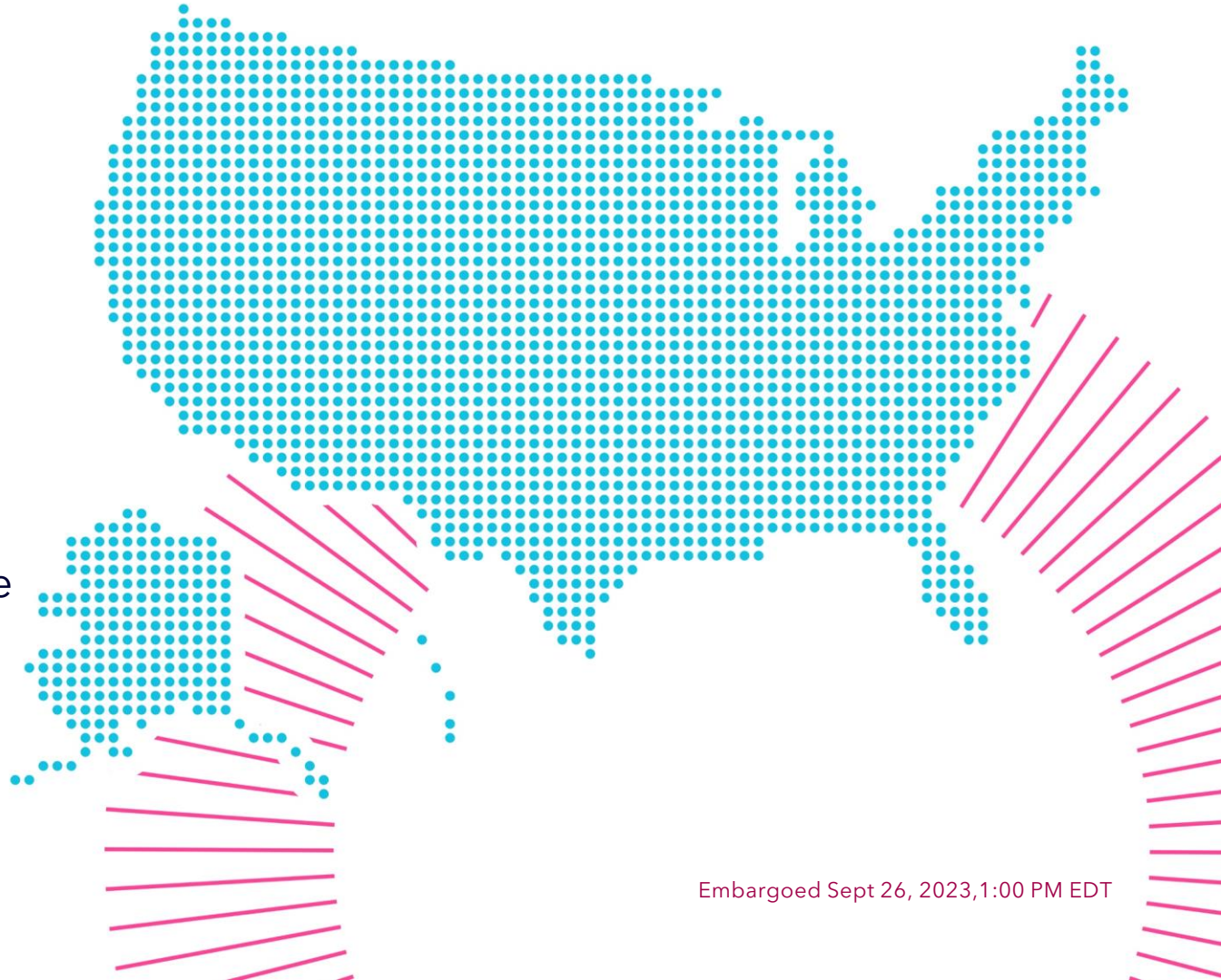
ARPA-H's Nationwide Health Innovation Network

# Our goal: Meet people where they are

ARPA-H was launched to **improve health outcomes for all Americans.**

ARPA-H must **meet people where they are**, whether across communities and geographies. ARPA-H has a responsibility for all Americans, especially those that have been the hardest to reach.

ARPA-H is responsible for **delivering** transformational **health solutions**. This means making sure our programs **transition** into viable approved products and **translate** into practice.



# ARPA-H's Three Hubs

## **National Capital Region**



### **Stakeholder and Operations Hub**

To engage key federal stakeholders to ensure success of program offerings from their inception. These partners contribute regulatory, legislative, and executive expertise to ARPA-H's efforts.

## **Competitive Site Selection Process - Announced 9/26**

### **Dallas, Texas**



### **Customer Experience Hub**

To focus on customer experience and drive user testing, adoption, and access to ARPA-H projects. The consortium will take a human-centered approach to design products and services that people need and want to use.

### **Boston, MA**



### **Investor Catalyst Hub**

To help ARPA-H programs navigate the complexities of the business, transition, and regulatory landscape and provide resources to help performers bring their ideas to market.

# ARPANET-H: A New Model to Engage and Sustain Health Innovation

## The Charge

Build a Health Innovation Platform to serve ARPA-H Program Managers, Performers, and Partners that is rapid, resilient, adaptable, and sustainable:

- ✓ help transformative innovations reach both the market and the end-user
- ✓ connect people, innovators, and institutions as transition and investment partners
- ✓ bring unlikely partners together to collaborate on challenges
- ✓ leverage unique ARPA-H mandate and authorities to fill gaps in the marketplace

## The Approach

- ✓ 2 Technical Hubs, a network of catalyst spokes
  1. Customer Experience
  2. Investor Catalyst
- ✓ **Health ecosystem convener:** Draws on best-suited capabilities through nationwide network of spokes
- ✓ **Opening a dialogue:** Listens closely from diverse partners through public Network Activation Calls
- ✓ **Master Other Transaction Vehicle:** Moves nimbly to easily work with non-traditional partners, including through instant IDIQ-style catalog of resources

# CX Hub: Dallas, Texas

**CONSORTIUM MANAGEMENT FIRM:** Advanced Technology International (ATI)

**Unique capabilities** focused on the patient, provider, and community experience for faster and broader adoption of ARPA-H health innovations.

This Hub applies a human-centered approach to design desirable products and services by co-creating features with end-users; engaging diverse, representative populations across ethnicity, region, and other dimensions; and connecting technical experts, community leads, and research infrastructure providers.



Source Selection Sensitive // Not for public distribution



**Physical Office Space:  
Pegasus Park**

*The hub will maintain a light physical footprint, housing a small number of ARPA-H team members alongside key personnel at each hub to support agency objectives.*

# Investor Catalyst Hub: Greater Boston, MA

**CONSORTIUM MANAGEMENT FIRM:** VentureWell

**Unique capabilities** focused on navigating the complexities of the market landscape.

This Hub applies a commercial lens to ensure innovators can understand investor interests, analyze the competitive landscape, navigate regulatory pathways, and develop robust business models to develop solutions that all Americans can afford and access.



Source Selection Sensitive // Not for public distribution



**Physical Office Space:  
CIC in Cambridge**

*The hub will maintain a light physical footprint, housing a small number of ARPA-H team members alongside key personnel at each hub to support agency objectives.*



# ARPA-H's Small Business Program

# ARPA-H Small Business Program (SBP): Non-Dilutive Opportunities for U.S. Small Businesses

- ARPA-H's SBP focuses on leveraging research advances for real world impact.
- Our SBP topics are generated by ARPA-H Program Managers and align with their programs.
- ARPA-H releases at least one contract solicitation each year addressing topics that are mission-oriented.
- Our SBP positions small businesses to commercialize technological solutions and products that are spun out from ARPA-H programs.

Learn more at our website →



contact us! [sbir@arpa-h.gov](mailto:sbir@arpa-h.gov)

## ARPA-H SBP Advantages

- Simplified contract application process
- Expedited review process only takes a few months!
- Non-dilutive funding. Stable and predictable funding.
- Not a loan, as SBIR/STTR funds do not have to be repaid. IP rights are retained by the small business.
- ARPA-H SBP performers can utilize our suite of entrepreneurial services to help advance and commercialize technologies.



# ARPA-H Small Business Program: 2023 Solicitation Awards

Solicitation Awards



Topic	Project	Performer	Location
Topic 1: Novel telehealth instruments for assessing pediatric well-being	A Smart AI-based Digital Health Framework for Enhancing Pediatric Wellness	Medentum Innovations Inc.	Clintwood, VA
	Digital Assessment of Children's Conditions Using Artificial Intelligence ("DACCS AI")	BelleTorus Corporation ("Belle.ai")	Cambridge, MA
Topic 2: Microneedle-based patches and digital patch interfaces for remote and real-time transdermal drug delivery and chronic disease management	Design Integration and Testing of a Low-Cost Disposable Remotely Controlled Microneedle Transdermal Drug Delivery Device	Satio, Inc.	Boston, MA
	Microneedle-based Patch for Remote and Real-time Transdermal Drug Delivery for Cardiovascular Disease	Triton Systems Inc.	Chelmsford, MA
Topic 3: Robotics for autonomous soft tissue surgery	'Autonomous' minimally invasive surgery approach with robotic tools and a 'smart' vision framework	OptoSurgical	Columbia, MD
Topic 4: Intraoperative contrast agents	Translation of Novel Biliary Tract-specific Contrast Agent to Mediate Successful Image-guided Hepatobiliary Interventions	OptoSurgical	Columbia, MD
	Real-time functional fluorescence nerve imaging for surgery	Trace Biosciences	Portland, OR
Topic 5: Scale-up: Transition disruptive technologies	Highly Miniaturized and Portable MALDI-2 Based Imaging Mass Spectrometry for Point-of-Care Clinical Diagnostics	BaySpec	San Jose, CA

# Update on 2024 ARPA-H Small Business Contract Solicitation:

Pre-Solicitation Released on Jan 8, 2024

- Full solicitation will be released on January 22, 2024
- Proposers will have 30 days to submit
- Carefully review the solicitation prior to submitting your proposals
- Follow the solicitation instructions on how to contact us if you have any questions.



Learn more at our website

## 2024 Small Business Contract Solicitation Topics

*Inexpensive plant-based manufacturing of viruses*

*LymphoLab ProDiscover Kit - Developing a lymphatic vasculature assay kit*

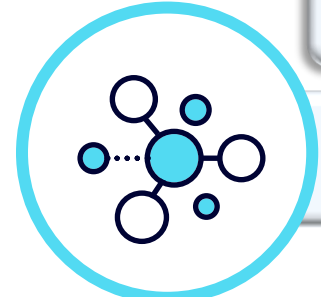
*Continuous monitoring of vascular health using smart biomimetic implantables*

*Fully autonomous neonatal echocardiography for diagnosis of critical congenital heart disease*

*Improving identity and access management with clinical context*

*Personalized medicine platform for predicting response to immunotherapy*

# Open BAA Awardees Rolling Submission through 3.24.24

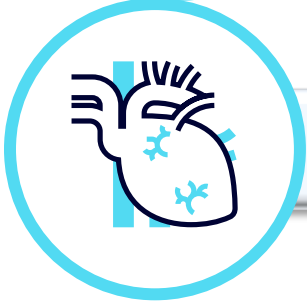


**CUREIT: Curing the Uncurable via RNA-Encoded Immunogene Tuning**  
What if incurable, debilitating diseases could be easily treated through mRNA-encoded therapies that tune your immune system?



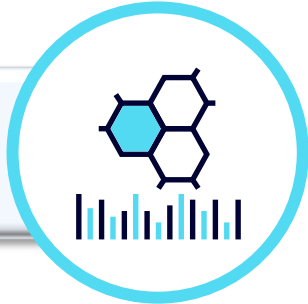
**THOR: Targeted Hybrid Oncotherapeutic Regulation**  
What if we could boost therapy response rates to peritoneal or solid tumor malignancies from 10% to 50%?

**SPIKEs: Programmable Scalable Therapeutics for Immune-directed Cancer-killing**  
What if programable bacteria could be directed to kill cancer inside the body?



**Health Enabling Advancements through Regenerative Tissue Printing (HEART)**  
What if we could 3D print a human heart in an hour?

**CODA: Mapping the Cancer and Organ Degradome Atlas to Unlock Synthetic Biomarkers for Multi-Cancer Early Detection**  
What if a single system could detect a broad range of cancers at the earliest stages of formation?



**CDTR: Stem Cell-Derived Thymus Rejuvenation**  
What if thymus function and immunity could be restored by a simple injection?

**DARTS: Defeating Antibiotic Resistance through Transformative Solutions**  
What if we could identify antibiotic-resistant bacteria in minutes?



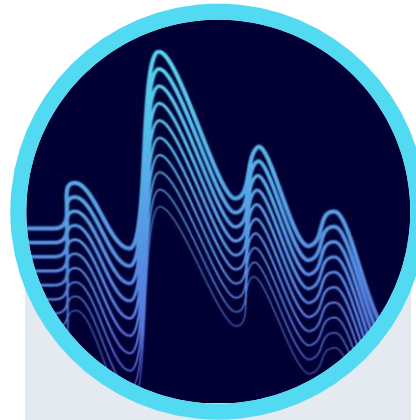
# Engage and Partner with ARPA-H



**Submit your Project Idea to Open BAA**



**Become an ARPANET-H Spoke**



**Keep up-to-date with the Vitals Newsletter**



**Become a Program Manager**

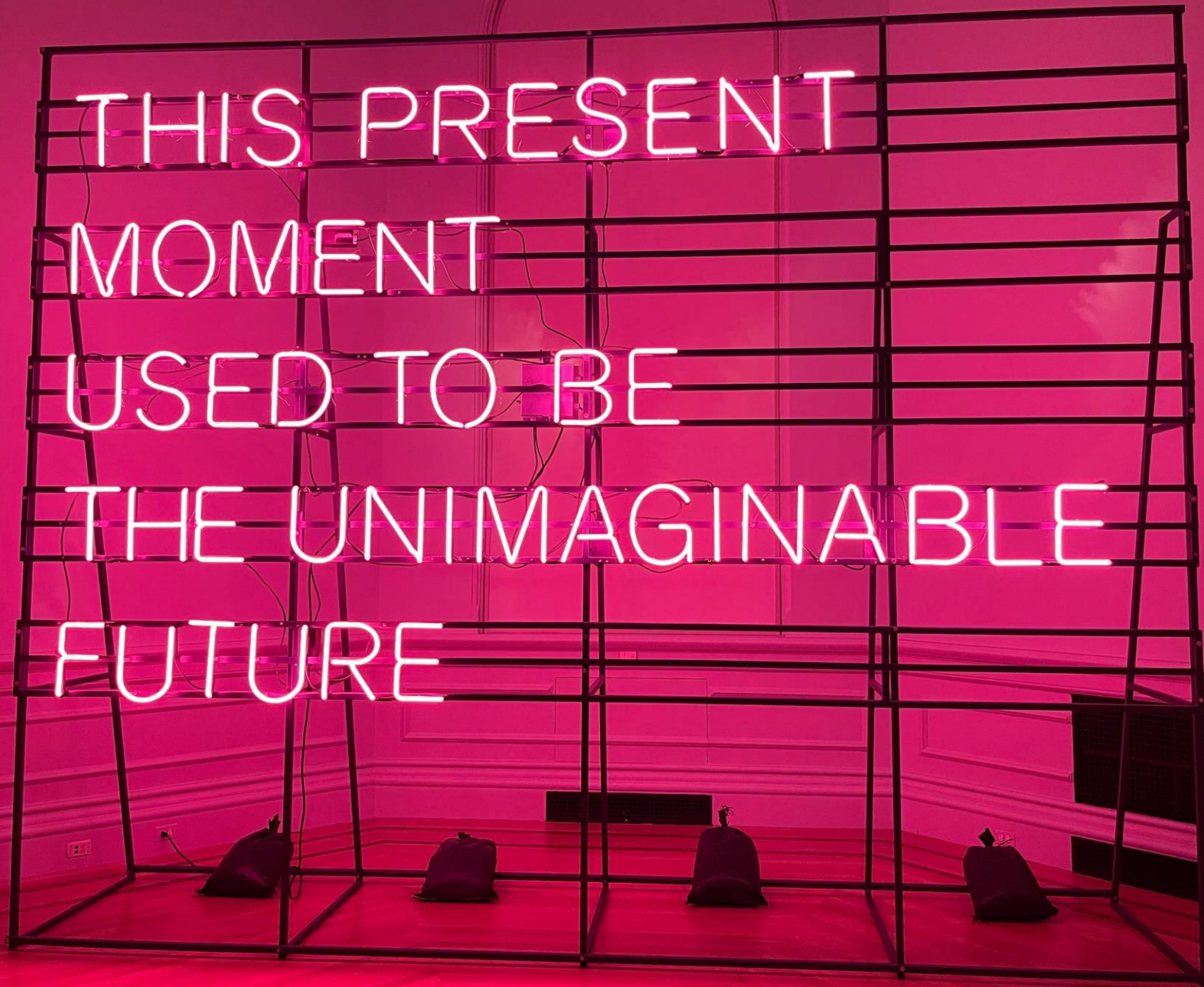


**SBIR Topics Solicitation on 1/22**





@ARPA\_H



**Alicia Eggert**  
**This Present Moment**  
**2019 - 2020**  
Currently @ The Renwick Gallery  
Washington, DC